Note About Format Item

The Format item specified for each field indicates the section and specific item in the Program Default Database Number Formatting Options form that controls the formatting (units, decimal places, etc.) for the specified field. This form can be accessed using the Options menu > Database > Set Program Default DB Formatting command.

Table: Active Degrees of Freedom

Field: UX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No, indicating if the UX degree of freedom is active.

Field: UY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No, indicating if the UY degree of freedom is active.

Field: UZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No, indicating if the UZ degree of freedom is active.

Field: RX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No, indicating if the RX degree of freedom is active.

Field: RY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No
This item is either Yes or No, indicating if the RY degree of freedom is active.

Field: RZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No, indicating if the RZ degree of freedom is active.

**Table: Analysis Case Definitions**

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the analysis case.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

The type of analysis case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, and LinSteady.

Field: InitialCond
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Zero or the name of a Nonlinear Static case. Zero means that the stiffness used is based on the unstressed state. Otherwise, the stiffness used is that at the end of the specified Nonlinear Static case. This item does not apply to response spectrum and linear modal history analysis cases.

Field: ModalCase
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the modal analysis case used in solving this analysis case. This item only applies to nonlinear static, response spectrum, and modal history cases.

Table: Area Added Mass Assignments

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: MassPerArea
Field is Imported: Yes
Format: Mass/Area (Mass and Weight section of form)
Units: Force-Sec^2/Length^3

Added mass per unit area applied to the area object.

Table: Area Auto Mesh Assignments

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: AutoMesh
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the area object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.

Field: Number1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This the AutoMesh item is Yes, then the area object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.
Field: Number2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This the AutoMesh item is Yes, then the area object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.

Table: Area Loads - Gravity

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the gravity loads are defined.

Field: MultiplierX
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The applied gravity load in the X-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierX scale factor.

Field: MultiplierY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The applied gravity load in the Y-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierY scale factor.

Field: MultiplierZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The applied gravity load in the Z-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierZ scale factor.

**Table: Area Loads - Pore Pressure**

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: Pressure
Field is Imported: Yes
Format: Force/Area (Forces section of form)
Units: Force/Length^2

The pore pressure load applied to the specified face of the Area object.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified pressure. If no joint pattern is specified then this item is reported as None.
Table: Area Loads - Rotate

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: AngularVel
Field is Imported: Yes
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

Angular velocity for rotation about the axis of symmetry of the object.

Table: Area Loads - Surface Pressure

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: Face
Field is Imported: Yes
Format: Controlled by program
Units: Text

The face of the Area object to which the pressure load is applied.
Field: Pressure
Field is Imported: Yes
Format: Force/Area (Forces section of form)
Units: Force/Length^2

The surface pressure load applied to the specified face of the Area object.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified pressure. If no joint pattern is specified then this item is reported as None.

Table: Area Loads - Temperature

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Temperature or Gradient indicating the type of load.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The temperature assignment to the Area object.

Field: TempGrad3
Field is Imported: Yes
Format: Temperature Gradient  (Forces section of form)
Units: Temp/Length

The temperature gradient in the local 3 direction (units are delta temperature/thickness 3-3) assignment to the Area object.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.

Table: Area Loads - Uniform

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the load is defined. Local means that the load is specified in an object local axis direction.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 1, 2, 3, X, Y, Z, X Proj, Y Proj, Z Proj, Gravity or Grav Proj indicating the direction of the load. 1, 2 and 3 indicate the local axes directions of the area object. X, Y and Z indicate the X, Y and Z directions of the specified coordinate system. Gravity is in the negative
global Z direction. X Proj, Y Proj or Z Proj are projected forces in the specified coordinate system. Projected forces are scaled by the sine of the angle between the area object and the direction of load.

**Field: UnifLoad**
- Field is Imported: Yes
- Format: Force/Area (Forces section of form)
- Units: Force/Length2

The uniform load that is applied to the area object in the specified direction.

**Table: Area Loads - Uniform To Frame**

**Field: Area**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of an area object.

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the coordinate system in which the load is defined. Local means that the load is specified in an object local axis direction.

**Field: Dir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either 1, 2, 3, X, Y, Z, X Proj, Y Proj, Z Proj, Gravity or Grav Proj indicating the direction of the load. 1, 2 and 3 indicate the local axes directions of the area object. X, Y and Z indicate the X, Y and Z directions of the specified coordinate system. Gravity is in the negative global Z direction. X Proj, Y Proj or Z Proj are projected forces in the specified coordinate system. Projected forces are scaled by the sine of the angle between the area object and the direction of load.
Field: **UnifLoad**
- Field is Imported: Yes
- Format: Force/Area (Forces section of form)
- Units: Force/Length²

The uniform load, in the specified direction, that is distributed to the surrounding frame objects.

Field: **DistType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either One Way or Two Way indicating the type of distribution used for the load.

**Table: Area Loads - Wind Pressure Coefficients**

Field: **Area**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of an area object.

Field: **LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

Field: **Windward**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the area object receiving the load is on the windward side of the structure. Otherwise it is No.

Typically, building codes specify the wind pressure on the windward side of the structure varies over the height of the structure, whereas it is constant over the structure height on other sides.

Field: **Cp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The wind pressure coefficient specified for the area object.

Field: XComponent
Field is Imported: No
Format: Controlled by program
Units: Unitless

The global X component of the wind pressure coefficient.

Field: YComponent
Field is Imported: No
Format: Controlled by program
Units: Unitless

The global Y component of the wind pressure coefficient.

Field: ZComponent
Field is Imported: No
Format: Controlled by program
Units: Unitless

The global Z component of the wind pressure coefficient.

Table: Area Local Axes Assignments 1 - Typical

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Angle
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle that the local 1 and 2 axes are rotated about the positive local 3 axis, from the default orientation or from the orientation determined by the plane reference vector. The rotation for a positive angle appears counterclockwise when the local +3 axis is pointing toward you.

Field: AdvanceAxes
Field is Imported: No
Format: Controlled by program
Units: Yes/No
This item is Yes if an advanced method is used to define the local axes reference vectors for the area object. Otherwise it is No meaning that the default reference vectors are used.

Default means that the local 3-2 plane for the area object is taken to be vertical, that is, parallel to the global Z-axis. The local 2 axis is taken to have an upward sense (global +Z) unless the object is horizontal (lies in the global X-Y plane) in which case the local 2 axis is taken along the global +Y direction. The local 1 axis is horizontal, that is it lies in the global X-Y plane.

Advanced means that the local axes are defined with respect to user-defined reference vectors. Note that when the advanced system is used, the specified Angle is applied to the local axes orientation defined by the user specified reference vectors.

**Table: Area Local Axes Assignments 2 - Advanced**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Label of an area object.</td>
</tr>
<tr>
<td>LocalPlane</td>
<td>This item indicates the local plane that is to be determined by the plane reference vector. It is either 31 or 32, indicating the 3-1 or the 3-2 plane, respectively.</td>
</tr>
<tr>
<td>PlOption1</td>
<td>This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the plane reference vector.</td>
</tr>
<tr>
<td>PlCoordSys</td>
<td></td>
</tr>
</tbody>
</table>
The coordinate system used to define the plane reference vector coordinate directions and the plane user vector.

Field: CoordDir1
Field is Imported: Yes
Format: Controlled by program
Units: Text

The primary coordinate direction taken at the object center in the specified coordinate system. It is used to determine the reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: CoordDir2
Field is Imported: Yes
Format: Controlled by program
Units: Text

The secondary coordinate direction taken at the object center in the specified coordinate system. It is used to determine the reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PlVecJt1
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecX
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Table: Area Material Temperatures

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The Area object material temperature.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.
Table: Area Reference Temperatures

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The Area object material temperature.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.

Table: Area Section Assignments

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Section
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the area section property assigned to the specified area object.

Field: MatProp
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Default, or the name of a Material. Default means that the material property for the area object is taken from the material.
property designated for the area section that is assigned to the area object.

**Table: Area Section Properties**

**Field: Section**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the area section property.

**Field: Material**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the material property assigned to the area section property.

**Field: MatAngle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Material angle associated with the area section property.

**Field: AreaType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Shell, Plane or Asolid indicating the type of area section.

**Field: Type**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

For shell-type area sections this is either Shell-Thin, Shell-Thick, Membrane, Plate-Thin, or Plate-Thick indicating the type of shell element.

For plane-type area sections this is either Plane-Stress or Plane-Strain indicating the type of plane element.

This item does not apply to asolid-type elements.
Field: **Thickness**

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

For shell-type area sections this is the membrane thickness of the element used for calculating the membrane stiffness for full-shell and pure-membrane sections, and used for self-mass and self-weight calculations.

For plane-type sections this is the thickness of the element. This item does not apply to asolid-type area sections.

Field: **BendThick**

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

This item only applies to shell-type area sections. It is the bending thickness of the section used for calculating the plate-bending and transverse shear stiffnesses for full-shell and pure-plate sections.

Field: **Arc**

Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

This item only applies to asolid-type area sections. It is the object arc, that is, the number of degrees through which the object's planar shape is rotated to define the solid-type object. Inputting 0 for this item means that the arc will be taken as 1 radian.

Field: **InComp**

Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if incompatible bending modes are included in the stiffness formulation. Otherwise it is No. It only applies to plane and asolid type sections.

In general, incompatible modes significantly improve the bending behavior of the object.

Field: **CoordSys**

Field is Imported: Yes
Format: Controlled by program
Units: Text
This item only applies to a solid-type area sections. The asolid axis of symmetry is the Z axis of this coordinate system.

**Field: Color**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color associated with the section.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

**Field: TotalWt**
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

Total weight of all objects in the model that are assigned the specified area section property.

**Field: TotalMass**
Field is Imported: No
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Total mass of all objects in the model that are assigned the specified area section property.

**Field: F11Mod**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

F11 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

**Field: F22Mod**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

F22 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the
similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: F12Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

F12 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: M11Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

M11 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: M22Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

M22 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: M12Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

M12 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: V13Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
V13 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: V23Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

V23 stiffness modifier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: MMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Mass multiplier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Field: WMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Weight multiplier for the specified area section property. This item is used for analysis only, not design. This item is multiplied times the similar modifier specified for the area section; it does not replace the modifier specified for the area section.

Table: Area Spring Assignments

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Face
Field is Imported: Yes
Format: Controlled by program
Units: Text
The face of the area object to which the specified springs are applied.

**Field: Dir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either 1, 2 or 3 indicating the area local axes direction in which the springs are oriented.

**Field: Stiffness**
- Field is Imported: Yes
- Format: Trans Stiffness/Area (Stiffness section of form)
- Units: Force/Length/Length2

Spring stiffness per unit area of the specified face of the area object in the direction specified.

### Table: Area Stiffness Modifiers

**Field: Area**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of an area object.

**Field: f11**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The membrane f11 modifier for the specified area object.

**Field: f22**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The membrane f22 modifier for the specified area object.

**Field: f12**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The membrane f12 modifier for the specified area object.
Field: m11
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The bending m11 modifier for the specified area object.

Field: m22
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The bending m22 modifier for the specified area object.

Field: m12
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The bending m12 modifier for the specified area object.

Field: v13
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The shear v13 modifier for the specified area object.

Field: v23
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The shear v23 modifier for the specified area object.

Field: MassMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The mass modifier for the specified area object.

Field: WeightMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The weight modifier for the specified area object.
Table: Auto Seismic - BOCA96

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: PeriodCalc
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item indicates the method used to determine the building period for use in calculating the magnitude of the auto seismic load. It is either Method A, Prog Calc (short for program calculated), or User.

Field: Ct
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The Ct factor used in calculating the building period (in English units).

Field: UserT
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: R
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 response modification factor.

Field: Aa
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 effective peak acceleration coefficient.

Field: Av
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 effective peak velocity-related coefficient.
Field: S
Field is Imported: Yes
Format: Controlled by program
Units: Text

The BOCA96 site coefficient.

Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: CoeffUsed
Field is Imported: No
Format: Controlled by program
Units: Unitless

The BOCA96 coefficient Cs used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Table: Auto Seismic - IBC2000

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.
Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: PeriodCalc
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item indicates the method used to determine the building period for use in calculating the magnitude of the auto seismic load. It is either Method A, Prog Calc (short for program calculated), or User.

Field: Ct
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Ct factor used in calculating the building period (in English units).

Field: UserT
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec
The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: R
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 response modification factor.

Field: SeisGroup
Field is Imported: Yes
Format: Controlled by program
Units: Text

The IBC2000 seismic group.

Field: SiteClass
Field is Imported: Yes
Format: Controlled by program
Units: Text

The IBC2000 site class.

Field: Ss
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 mapped spectral acceleration for short periods.

Field: S1
Field is Imported: Yes
The IBC2000 mapped spectral acceleration for a one second period.

Field: Fa
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 site coefficient, Fa.

Field: Fv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 site coefficient, Fv.

Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: CoeffUsed
Field is Imported: No
Format: Controlled by program
Units: Unitless

The IBC2000 coefficient Cs used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

**Table: Auto Seismic - NBCC95**

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified auto seismic load applies.

**Field: Dir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

**Field: PercentEcc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

**Field: EccOverride**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

**Field: StructType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Mom Frame or Other indicating the type of structure.

**Field: PeriodCalc**
- Field is Imported: Yes
Field: Ds
  Field is Imported: Yes
  Format: Absolute Distance (Structure Dimensions section of form)
  Units: Length

  Length of wall or braced frame which constitutes the main lateral-force resisting system.

Field: UserT
  Field is Imported: Yes
  Format: Other Time (Seconds) (Time-Related section of form)
  Units: Sec

  The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

Field: MaxZ
  Field is Imported: Yes
  Format: Coordinates (Structure Dimensions section of form)
  Units: Length

  The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
  Field is Imported: Yes
  Format: Coordinates (Structure Dimensions section of form)
  Units: Length

  The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: R
  Field is Imported: Yes
  Format: Controlled by program
  Units: Unitless

  NBCC 95 force modification factor.

Field: Za
  Field is Imported: Yes
  Format: Controlled by program
Units: Text

NBCC95 acceleration-related seismic zone.

Field: Zv
Field is Imported: Yes
Format: Controlled by program
Units: Text

NBCC95 velocity-related seismic zone.

Field: VType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item indicates whether the NBCC95 zonal velocity ratio is program calculated based on Zv, or it is user-defined.

Field: V
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

NBCC95 zonal velocity ratio.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

NBCC95 importance factor.

Field: F
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

NBCC95 foundation factor.

Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.
Field: **FSUsed**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The product of the NBCC95 foundation factor, F, and the NBCC95 seismic response factor, S, used in calculating the base shear. This item is only available after the analysis has been run.

Field: **WeightUsed**

Field is Imported: No  
Format: Weight (Mass and Weight section of form)  
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: **BaseShear**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Field: **FtUsed**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The Ft force (concentrated force at the top of the building) calculated for the specified auto seismic load. This item is only available after the analysis has been run.

### Table: Auto Seismic - NEHRP97

Field: **LoadCase**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: **Dir**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text
This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: PeriodCalc
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item indicates the method used to determine the building period for use in calculating the magnitude of the auto seismic load. It is either Method A, Prog Calc (short for program calculated), or User.

Field: Ct
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Ct factor used in calculating the building period (in English units).

Field: UserT
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: R
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 response modification factor.

Field: SeisGroup
Field is Imported: Yes
Format: Controlled by program
Units: Text

The NEHRP97 seismic group.

Field: SiteClass
Field is Imported: Yes
Format: Controlled by program
Units: Text

The NEHRP97 site class.

Field: Ss
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 mapped spectral acceleration for short periods.

Field: S1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 mapped spectral acceleration for a one second period.
Field: Fa
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 site coefficient, Fa.

Field: Fv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 site coefficient, Fv.

Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: CoeffUsed
Field is Imported: No
Format: Controlled by program
Units: Unitless

The NEHRP97 coefficient Cs used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.
<table>
<thead>
<tr>
<th>Field</th>
<th>Field is Imported</th>
<th>Format</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LoadCase</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Text</td>
</tr>
<tr>
<td>Dir</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Text</td>
</tr>
<tr>
<td>PercentEcc</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td>EccOverride</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Yes/No</td>
</tr>
<tr>
<td>PeriodCalc</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Text</td>
</tr>
<tr>
<td>Ct</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
</tbody>
</table>

**Table: Auto Seismic - UBC94**

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified auto seismic load applies.

**Field: Dir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

**Field: PercentEcc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

**Field: EccOverride**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

**Field: PeriodCalc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item indicates the method used to determine the building period for use in calculating the magnitude of the auto seismic load. It is either Method A, Prog Calc (short for program calculated), or User.

**Field: Ct**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The Ct factor used in calculating the building period (in English units).

**Field: UserT**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

**Field: MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

**Field: MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

**Field: Rw**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The UBC94 numerical factor, Rw.

**Field: Z**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC94 seismic zone factor.

**Field: S**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC94 site coefficient for soil characteristics.
Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC94 importance factor.

Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: CoeffUsed
Field is Imported: No
Format: Controlled by program
Units: Unitless

The UBC94 coefficient C used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Field: FtUsed
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Ft force (concentrated force at the top of the building) calculated for the specified auto seismic load. This item is only available after the analysis has been run.
Table: Auto Seismic - UBC97

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: PeriodCalc
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item indicates the method used to determine the building period for use in calculating the magnitude of the auto seismic load. It is either Method A, Prog Calc (short for program calculated), or User.

Field: Ct
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The Ct factor used in calculating the building period (in English units).

Field: **UserT**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The user-defined value of the building period used in calculating the magnitude of the auto seismic load.

Field: **MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: **MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: **R**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The UBC97 overstrength factor.

Field: **SoilType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC97 soil profile type.

Field: **Z**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC97 seismic zone factor.
Field: Ca
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 coefficient, Ca.

Field: Cv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 coefficient, Cv.

Field: SourceType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The UBC97 seismic source type.

Field: SourceDist
Field is Imported: Yes
Format: Controlled by program
Units: km

The distance to the closest known seismic source in kilometers.

Field: Na
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 near source factor, Na.

Field: Nv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 near source factor, Nv.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 importance factor.
Field: TUsed
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The period used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Field: FtUsed
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Ft force (concentrated force at the top of the building) calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Table: Auto Seismic - UBC97 Isolated

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text
This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: Ri
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 overstrength factor for isolated buildings specified in UBC97 Table A-16-E.

Field: Bd
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 coefficient for damping specified in UBC97 Table A-16-C.

Field: Kmax
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

Maximum effective stiffness of the isolation system.

Field: Kmin
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

Minimum effective stiffness of the isolation system.

Field: SoilType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The UBC97 soil profile type.

Field: Z
Field is Imported: Yes
Format: Controlled by program
Units: Text

The UBC97 seismic zone factor.

Field: Cvd
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 coefficient, Cv.

Field: SourceType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The UBC97 seismic source type.

Field: SourceDist
Field is Imported: Yes
Format: Controlled by program
Units: km

The distance to the closest known seismic source in kilometers.

Field: Nv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 near source factor, Nv.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

**Table: Auto Seismic - User Coefficient**

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either X or Y indicating the global direction in which the specified auto seismic load acts.

Field: PercentEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The percentage eccentricity applicable to all rigid diaphragms. This item only applies if the Dir item indicates that there is eccentricity. Note that if the EccOverride item is Yes, then this eccentricity may be overwritten for some diaphragms.

Field: EccOverride
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item indicates if the percentage eccentricity specified by the PercentEcc item is overwritten for any of the rigid diaphragms in the model.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto seismic loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto seismic loads are applied.

Field: C
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The user-defined base shear coefficient (V = CW).

Field: K
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The user-defined exponent applied to the story height.

Field: WeightUsed
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force
The seismic weight of the structure used to calculate the seismic base shear. This item is only available after the analysis has been run.

Field: BaseShear
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.

Table: Auto Seismic - User Loads

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto seismic load applies.

Field: Diaphragm
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the diaphragm to which the load is applied.

Field: DiaphragmZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the specified diaphragm.

Field: AppPoint
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either CM (short for center of mass) or User indicating the application point of the load.

Field: AddEcc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The additional eccentricity ratio added to the specified load. This added eccentricity causes an MZ moment in the plane of the diaphragm. This item is only applicable when the user seismic load is applied at the center of mass.

**Field: FX**
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force

The force applied to the diaphragm in the global X direction.

**Field: FY**
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force

The force applied to the diaphragm in the global Y direction.

**Field: MZ**
- Field is Imported: Yes
- Format: Moment (Forces section of form)
- Units: Force-Length

The moment applied to the diaphragm about the global Z axis.

**Field: X**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The user-defined global X coordinate of the load application point.

**Field: Y**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The user-defined global Y coordinate of the load application point.

**Field: BaseShear**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The base shear calculated for the specified auto seismic load. This item is only available after the analysis has been run.
### Table: Auto Seismic Eccentricity Overrides

**Field: LoadCase**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Label of the load case to which the specified load applies.

**Field: AutoLdType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This item is either User Coeff, User Loads or the name of the code considered for the specified load case.

**Field: Diaphragm**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

The name of the horizontal rigid diaphragm constraint to which the specified eccentricity applies.

**Field: Eccen**  
Field is Imported: Yes  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length  

User-specified eccentricity for the specified rigid diaphragm constraint. Note that this eccentricity is specified as an absolute length, not a percentage of the structure dimension.

### Table: Auto Seismic Loads To Groups

**Field: LoadCase**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of the load case to which the specified load applies.

**Field: AutoLdType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text
This item is either User Coeff, User Loads or the name of the code considered for the specified load case.

**Field: Group**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the group to which the specified load applies.

**Field: GroupAvgZ**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The average global Z coordinate of all point objects included in the specified group.

**Field: FX**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto seismic force acting in the global X direction at the specified point.

**Field: FY**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto seismic force acting in the global Y direction at the specified point.

**Field: FZ**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto seismic force acting in the global Z direction at the specified point.

**Field: MX**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The applied auto seismic force acting about the global X axis at the specified point.
Field: MY
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Y axis at the specified point.

Field: MZ
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Z axis at the specified point.

Field: X
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto seismic group forces and moments are reported.

Field: Y
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto seismic group forces and moments are reported.

Field: Z
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point at which the auto seismic group forces and moments are reported.

Table: Auto Seismic Loads To Horizontal Diaphragms

Field: LoadCase
Field is Imported: No
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.
Field: AutoLdType

Field is Imported: No
Format: Controlled by program
Units: Text

This item is either User Coeff, User Loads or the name of the code considered for the specified load case.

Field: Diaphragm

Field is Imported: No
Format: Controlled by program
Units: Text

The name of the horizontal rigid diaphragm constraint to which the specified load applies.

Field: DiaphragmZ

Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the specified diaphragm.

Field: FX

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto seismic force acting in the global X direction at the specified point.

Field: FY

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto seismic force acting in the global Y direction at the specified point.

Field: FZ

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto seismic force acting in the global Z direction at the specified point.

Field: MX

Field is Imported: No
The applied auto seismic force acting about the global X axis at the specified point.

Field: MY
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Y axis at the specified point.

Field: MZ
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Z axis at the specified point.

Field: X
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto seismic diaphragm forces and moments are reported.

Field: Y
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto seismic diaphragm forces and moments are reported.

Field: Z
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point at which the auto seismic diaphragm forces and moments are reported.
Table: Auto Seismic Loads To Joints

Field: LoadCase
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

Field: AutoLdType
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This item is either User Coeff, User Loads or the name of the code considered for the specified load case.

Field: JointElem
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint element in the SAP analysis model to which the specified auto seismic force is applied.

Field: Joint
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint object associated with the specified joint element, if any.

Field: FX
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto seismic force acting in the global X direction at the specified point.

Field: FY
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto seismic force acting in the global Y direction at the specified point.
Field: FZ
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto seismic force acting in the global Z direction at the specified point.

Field: MX
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global X axis at the specified point.

Field: MY
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Y axis at the specified point.

Field: MZ
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto seismic force acting about the global Z axis at the specified point.

Field: X
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto seismic joint element forces and moments are reported.

Field: Y
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto seismic joint element forces and moments are reported.
Field: Z
  Field is Imported: No
  Format: Coordinates (Structure Dimensions section of form)
  Units: Length

  The global Z coordinate of the point at which the auto seismic joint
element forces and moments are reported.

Table: Auto Wind - ASCE7-88

Field: LoadCase
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  Label of the load case to which the specified auto wind load applies.

Field: ExposeFrom
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  This item is either Diaphragms or Areaobjects. Diaphragms means that
  the wind exposure is based on the extent of the rigid diaphragms.
  Areaobjects means that the wind exposure is based on user-defined wind
  pressure coefficients assigned to area objects.

Field: Angle
  Field is Imported: Yes
  Format: Angles (Structure Dimensions section of form)
  Units: Degrees

  Angle measured counterclockwise from the positive global X-axis to the
direction that the wind is blowing. This item only applies if the
ExposeFrom item is Diaphragms.

Field: WindwardCp
  Field is Imported: Yes
  Format: Controlled by program
  Units: Unitless

  The windward wind pressure coefficient. This item only applies if the
ExposeFrom item is Diaphragms.

Field: LeewardCp
  Field is Imported: Yes
  Format: Controlled by program
  Units: Unitless
The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

Field: WindSpeed
Field is Imported: Yes
Format: Controlled by program
Units: mph

The basic windspeed in mph.

Field: Exposure
Field is Imported: Yes
Format: Controlled by program
Units: Text

The ASCE7-88 wind exposure type.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-88 wind importance factor.

Field: GustFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-88 gust factor, G.
Field: ExpWidth

Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

Table: Auto Wind - ASCE7-95

Field: LoadCase

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: ExposeFrom

Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms. Areaobjects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

Field: Angle

Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the ExposeFrom item is Diaphragms.

Field: WindwardCp

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: LeewardCp

Field is Imported: Yes
Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length
The global Z-coordinate at the highest level where auto wind loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length
The global Z-coordinate at the lowest level where auto wind loads are applied.

Field: WindSpeed
Field is Imported: Yes
Format: Controlled by program
Units: mph
The basic windspeed in mph.

Field: Exposure
Field is Imported: Yes
Format: Controlled by program
Units: Text
The ASCE7-95 wind exposure type.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The ASCE7-95 wind importance factor.

Field: Kzt
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The ASCE7-95 topographic factor.
Field: **GustFactor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The ASCE7-95 gust factor, G.

Field: **ExpWidth**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

### Table: Auto Wind - ASCE7-98

Field: **LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified auto wind load applies.

Field: **ExposeFrom**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms. Areaobjects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

Field: **Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the ExposeFrom item is Diaphragms.

Field: **WindwardCp**
- Field is Imported: Yes
- Format: Controlled by program
Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: LeewardCp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

Field: WindSpeed
Field is Imported: Yes
Format: Controlled by program
Units: mph

The basic windspeed in mph.

Field: Exposure
Field is Imported: Yes
Format: Controlled by program
Units: Text

The ASCE7-98 wind exposure type.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-98 wind importance factor.
Field: Kzt
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-98 topographic factor.

Field: GustFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-98 gust factor, G.

Field: Kd
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ASCE7-98 wind directionality factor.

Field: ExpWidth
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

Table: Auto Wind - BOCA96

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: ExposeFrom
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms.
Area objects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

Field: **Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the ExposeFrom item is Diaphragms.

Field: **WindwardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: **LeewardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: **MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

Field: **MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

Field: **WindSpeed**
- Field is Imported: Yes
- Format: Controlled by program
- Units: mph
The basic windspeed in mph.

**Field:** **Exposure**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The BOCA96 wind exposure type.

**Field:** **I**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The BOCA96 wind importance factor.

**Field:** **GhType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either User Defined or Per Code indicating how the gust response factor is defined.

**Field:** **Gh**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The BOCA96 gust response factor.

**Field:** **ExpWidth**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

**Table: Auto Wind - BS6399-95**

**Field:** **LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
Label of the load case to which the specified auto wind load applies.

**Field: ExposeFrom**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that
the wind exposure is based on the extent of the rigid diaphragms.
Areaobjects means that the wind exposure is based on user-defined wind
pressure coefficients assigned to area objects.

**Field: Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the
direction that the wind is blowing. This item only applies if the
ExposeFrom item is Diaphragms.

**Field: WindwardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The windward wind pressure coefficient. This item only applies if the
ExposeFrom item is Diaphragms.

**Field: LeewardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The leeward wind pressure coefficient. This item only applies if the
ExposeFrom item is Diaphragms.

**Field: MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto wind loads are
applied.

**Field: MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length
The global Z-coordinate at the lowest level where auto wind loads are applied.

**Field: Ve**
- Field is Imported: Yes
- Format: Controlled by program
- Units: meter/sec

The effective wind speed in meters per second.

**Field: Ca**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The BS6399-95 size effect factor.

**Field: Cr**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The BS6399-95 dynamic augmentation factor.

**Field: ExpWidth**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

**Table: Auto Wind - NBCC95**

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified auto wind load applies.

**Field: ExposeFrom**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms. Areaobjects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

**Field: Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the ExposeFrom item is Diaphragms.

**Field: WindwardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

**Field: LeewardCp**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

**Field: MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

**Field: MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

**Field: VelPressure**
- Field is Imported: Yes
The NBCC95 velocity pressure in kPa.

Field: Cg
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NBCC95 gust effect factor.

Field: ExpWidth
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

Table: Auto Wind - UBC94

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: ExposeFrom
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms. Areaobjects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

Field: Angle
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees
Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the ExposeFrom item is Diaphragms.

**Field: WindwardCq**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

**Field: LeewardCq**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

**Field: MaxZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

**Field: MinZ**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

**Field: WindSpeed**
- Field is Imported: Yes
- Format: Controlled by program
- Units: mph

The basic windspeed in mph.

**Field: Exposure**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC94 wind exposure type.
Field: \text{I}
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC94 wind importance factor.

Field: \text{ExpWidth}
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

Table: Auto Wind - UBC97

Field: \text{LoadCase}
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: \text{ExposeFrom}
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Diaphragms or Areaobjects. Diaphragms means that the wind exposure is based on the extent of the rigid diaphragms. Areaobjects means that the wind exposure is based on user-defined wind pressure coefficients assigned to area objects.

Field: \text{Angle}
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

Angle measured counterclockwise from the positive global X-axis to the direction that the wind is blowing. This item only applies if the \text{ExposeFrom} item is Diaphragms.

Field: \text{WindwardCq}
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The windward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: LeewardCq
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The leeward wind pressure coefficient. This item only applies if the ExposeFrom item is Diaphragms.

Field: MaxZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the highest level where auto wind loads are applied.

Field: MinZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate at the lowest level where auto wind loads are applied.

Field: WindSpeed
Field is Imported: Yes
Format: Controlled by program
Units: mph

The basic windspeed in mph.

Field: Exposure
Field is Imported: Yes
Format: Controlled by program
Units: Text

The UBC97 wind exposure type.

Field: I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The UBC97 wind importance factor.
Field: ExpWidth
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either User or From Diaphs indicating how the program determines the exposure width for the wind. From Diaphs means that the program calculates the exposure width based on the extent of the diaphragm in a direction perpendicular to the wind load.

Table: Auto Wind - User

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: Diaphragm
Field is Imported: Yes
Format: Controlled by program
Units: Text

Rigid diaphragm constraint for which the specified exposure width applies.

Field: DiaphragmZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the specified diaphragm.

Field: FX
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The force applied to the diaphragm in the global X direction.

Field: FY
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The force applied to the diaphragm in the global Y direction.
Field: MZ
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

The moment applied to the diaphragm about the global Z axis.

Field: X
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The user-defined global X coordinate of the load application point.

Field: Y
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The user-defined global Y coordinate of the load application point.

Table: Auto Wind Exposure For Horizontal Diaphragms

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: Diaphragm
Field is Imported: Yes
Format: Controlled by program
Units: Text

Rigid diaphragm constraint for which the specified exposure width applies.

Field: DiaphragmZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the specified diaphragm.

Field: X
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X-coordinate of the point where the wind force is applied.

Field: Y
   Field is Imported: Yes
   Format: Coordinates (Structure Dimensions section of form)
   Units: Length

The global Y-coordinate of the point where the wind force is applied.

Field: TribWidth
   Field is Imported: Yes
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

The exposure width for the specified diaphragm.

Field: TribHeight
   Field is Imported: Yes
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

The tributary height of wind load applied to the specified diaphragm.

Table: Auto Wind Loads To Groups

Field: LoadCase
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Label of the load case to which the specified load applies.

Field: AutoLdType
   Field is Imported: No
   Format: Controlled by program
   Units: Text

This item is either User or the name of the code considered for the specified load case.

Field: Group
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Label of the group to which the auto wind load applies.
Field: **GroupAvgZ**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

The average global Z coordinate of all point objects included in the specified group.

Field: **FX**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global X direction at the specified point.

Field: **FY**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global Y direction at the specified point.

Field: **FZ**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global Z direction at the specified point.

Field: **MX**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The applied auto wind force acting about the global X axis at the specified point.

Field: **MY**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The applied auto wind force acting about the global Y axis at the specified point.
Field: MZ
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global Z axis at the specified point.

Field: X
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto wind group forces and moments are reported.

Field: Y
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto wind group forces and moments are reported.

Field: Z
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point at which the auto wind group forces and moments are reported.

**Table: Auto Wind Loads To Horizontal Diaphragms**

Field: LoadCase
Field is Imported: No
Format: Controlled by program
Units: Text

Label of the load case to which the specified auto wind load applies.

Field: AutoLdType
Field is Imported: No
Format: Controlled by program
Units: Text

This item is either User or the name of the code considered for the specified load case.
Field: Diaphragm
Field is Imported: No
Format: Controlled by program
Units: Text

Horizontal rigid diaphragm constraint to which the specified wind load applies.

Field: DiaphragmZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the specified diaphragm.

Field: FX
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto wind force acting in the global X direction at the specified point.

Field: FY
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto wind force acting in the global Y direction at the specified point.

Field: FZ
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The applied auto wind force acting in the global Z direction at the specified point.

Field: MX
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global X axis at the specified point.

Field: MY
Field is Imported: No
The applied auto wind force acting about the global Y axis at the specified point.

Field: **MZ**

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global Z axis at the specified point.

Field: **X**

Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto wind diaphragm forces and moments are reported.

Field: **Y**

Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto wind diaphragm forces and moments are reported.

Field: **Z**

Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point at which the auto wind diaphragm forces and moments are reported.

**Table: Auto Wind Loads To Joints**

Field: **LoadCase**

Field is Imported: No
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.
Field: **AutoLdType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This item is either User or the name of the code considered for the specified load case.

Field: **JointElem**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint element in the SAP analysis model to which the specified auto wind force is applied.

Field: **Joint**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint object associated with the specified joint element, if any.

Field: **FX**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global X direction at the specified point.

Field: **FY**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global Y direction at the specified point.

Field: **FZ**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The applied auto wind force acting in the global Z direction at the specified point.
Field: MX
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global X axis at the specified point.

Field: MY
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global Y axis at the specified point.

Field: MZ
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The applied auto wind force acting about the global Z axis at the specified point.

Field: X
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point at which the auto wind joint element forces and moments are reported.

Field: Y
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point at which the auto wind joint element forces and moments are reported.

Field: Z
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point at which the auto wind joint element forces and moments are reported.
Table: Bridge Loads 1 - Lane Definitions

Field: LaneName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the specified lane.

Field: Frame
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a frame object that is part of the lane.

Field: Eccen
- Field is Imported: Yes
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

Constant lane eccentricity associated with the specified frame object.

Table: Bridge Loads 2 - Standard Vehicles

Field: VehName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name (Label) of the standard vehicle.

Field: Type
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Hn-44, HSn-44, Hn-44L, HSn-44L, AML, HL-93K, HL-93M, HL-93S, P5, P7, P9, P11, P13, Cooper E 80, UICn, or RL indicating the type of standard vehicle.

For the Hn-44, HSn-44, Hn-44L and HSn-44L vehicles, n is the nominal weight of the vehicle in tons. For example, if the scale factor for a HSn-44 vehicle is 20, then the vehicle specified is a HS20-44.

For the UICn vehicle n is the magnitude of the uniform load in kN/m.
Field: ScaleFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This item only applies to Hn-44, HSn-44, Hn-44L, HSn-44L and UICnS standard vehicles. It is the scale factor represented by the n in the vehicle type. For example, a scale factor of 20 for a HSn-44 type vehicle means a HS20-44 vehicle.

Field: DynAllow
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This item only applies to HL-93K, HL-93M and HL-93S standard vehicles. It is the dynamic load allowance, that is, it is the additive percentage by which the concentrated truck or tandem axle loads will be increased. The uniform lane load is not affected.

Table: Bridge Loads 3 - General Vehicles 1

Field: VehName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name (Label) of the general vehicle.

Field: SupportMom
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the Vehicle is to be used for negative span moments over supports. Otherwise it is No.

Field: IntSupport
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the Vehicle is to be used for vertical forces at (1) interior supports, (2) reactions, and (3) spring supports. Otherwise it is No.

Field: OtherResp
Field is Imported: Yes
Field: LeadUnif
Field is Imported: Yes
Format: Force/Length (Forces section of form)
Units: Force/Length

The leading uniform load.

Field: TrailUnif
Field is Imported: Yes
Format: Force/Length (Forces section of form)
Units: Force/Length

The trailing uniform load.

Field: FirstAxle
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The first axle load.

Field: AxleMom
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Floating axle load for span moments.

Field: AxleOther
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Floating axle load for all response quantities except moments.

Field: NumInter
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of sets of intermediate loads specified for this Moving Load case.

This item is Yes if the Vehicle is to be used for response quantities other than those listed for the SupportMom and IntSupport items. Otherwise it is No.
### Table: Bridge Loads 4 - General Vehicles 2

**Field:** VehName  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Name (Label) of the general vehicle.

**Field:** InterUnif  
Field is Imported: Yes  
Format: Force/Length (Forces section of form)  
Units: Force/Length  

An intermediate uniform load.

**Field:** InterAxle  
Field is Imported: Yes  
Format: Force (Forces section of form)  
Units: Force  

An intermediate axle load.

**Field:** InterMinD  
Field is Imported: Yes  
Format: Length (Section Dimensions section of form)  
Units: Length  

The minimum distance between the current and preceding axles.

**Field:** InterMaxD  
Field is Imported: Yes  
Format: Length (Section Dimensions section of form)  
Units: Length  

The maximum distance between the current and preceding axles. If this value is 0 then it means an infinite distance.

### Table: Bridge Loads 5 - Vehicle Classes

**Field:** VehClass  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Name of the vehicle class.
Field: VehName
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   Name of a vehicle assigned to the vehicle class.

Field: ScaleFactor
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   A scale factor that multiplies the vehicle load of the associated vehicle.

Table: Bridge Loads 6 - Bridge Response

Field: InitialCond
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   This is either Zero or the name of a Nonlinear Static case. Zero means that the stiffness used is based on the unstressed state. Otherwise, the stiffness used is that at the end of the specified Nonlinear Static case. This item does not apply to response spectrum and linear modal history analysis cases.

Field: Displs
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   The name of the group chosen for displacement output for all moving load analysis cases. If no displacement output is specified then this item is None.

Field: Reactions
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   The name of the group chosen for reaction output for all moving load analysis cases. If no reaction output is specified then this item is None.

Field: Springs
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
The name of the group chosen for spring force output for all moving load analysis cases. If no spring force output is specified then this item is None.

**Field: Frames**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of the group chosen for frame force output for all moving load analysis cases. If no frame force output is specified then this item is None.

**Field: CalcMethod**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Exact or it is a positive integer. A positive integer means that the Quick calculation method is used, and the integer specifies the refinement level.

**Field: Correspond**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if corresponding values are calculated for frames. Otherwise it is No.

### Table: Case - Buckling 1 - General

**Field: Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Buckling-type analysis case.

**Field: NumBuckMode**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of buckling modes requested.
Field: EigenTol

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The eigenvalue convergence tolerance for the buckling analysis case.

Table: Case - Buckling 2 - Load Assignments

Field: Case

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Buckling-type analysis case.

Field: LoadType

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Load case or Accel indicating the type of load specified.

Field: LoadName

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either the name of a load case, Accel UX, Accel UY, or Accel UZ.

Accel UX, UY and UZ imply a uniform acceleration acting in the global X, Y and Z directions, respectively. The force applied at each joint is proportional to the mass tributary to that joint.

Field: LoadSF

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A unitless scale factor that multiplies the associated load case value.

Field: TransAccSF

Field is Imported: Yes
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²
A scale factor (with translational acceleration units) that multiplies the associated acceleration value.

**Table: Case - Direct History 1 - General**

**Field:** Case  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of the Direct History-type analysis case.

**Field:** OutSteps  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The number of output time steps.

**Field:** StepSize  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The output time-step size.

**Table: Case - Direct History 2 - Load Assignments**

**Field:** Case  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of the Direct History-type analysis case.

**Field:** LoadType  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

This is either Load case or Accel indicating the type of load specified.

**Field:** LoadName  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text
This item is either the name of a load case or it is one of Accel U1, Accel U2, or Accel U3. The Accel items refer to ground acceleration loads in acceleration local coordinates. Note that the acceleration local coordinates are defined by the CoordSys and Angle items.

**Field: Function**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a function defining the time variation of the ground acceleration or load case.

**Field: LoadSF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Scale factor multiplying the ordinate values of the specified function.

**Field: TransAccSF**
- Field is Imported: Yes
- Format: Acceleration-Trans (Time-Related section of form)
- Units: Length/sec²

Scale factor multiplying the ordinate values of the specified function.

**Field: TimeFactor**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Scale factor multiplying the time (abscissa) values of the specified function.

**Field: ArrivalTime**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Arrival time for the specified function.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
Coordinate system used to define the acceleration directions. This item only applies when the LoadType item is Acceleration.

Field: **Angle**

Field is Imported: Yes  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

Coordinate angle between the acceleration local 1 axis and the +X-axis of the coordinate system specified by the CoordSys item. The rotation is about the Z-axis of the specified coordinate system. This item only applies when the LoadType item is Acceleration.

### Table: Case - Direct History 3 - Proportional Damping

Field: **Case**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of the Direct History-type analysis case.

Field: **SpecifyType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Direct, Period or Frequency indicating the method used to specify the mass and stiffness coefficients. Direct means that they are directly specified. Period means that they are specified using two periods and two associated damping ratios. Frequency means that they are specified using two frequencies and two associated damping ratios.

Field: **MassCoeff**

Field is Imported: Yes  
Format: Controlled by program  
Units: 1/Sec

The specified mass coefficient.

Field: **StiffCoeff**

Field is Imported: Yes  
Format: Other Time (Seconds) (Time-Related section of form)  
Units: Sec

The specified stiffness coefficient.
Field: **Period1**  
Field is Imported: No  
Format: Period (Time-Related section of form)  
Units: Sec  

The first period value used when the SpecifyType item is Period.

Field: **Frequency1**  
Field is Imported: No  
Format: Frequency (Time-Related section of form)  
Units: Cyc/sec  

The first frequency value used when the SpecifyType item is Frequency.

Field: **Damping1**  
Field is Imported: No  
Format: Damping Ratios (Damping Items section of form)  
Units: Unitless  

The first damping ratio value used when the SpecifyType item is either Period or Frequency.

Field: **Period2**  
Field is Imported: No  
Format: Period (Time-Related section of form)  
Units: Sec  

The second period value used when the SpecifyType item is Period.

Field: **Frequency2**  
Field is Imported: No  
Format: Frequency (Time-Related section of form)  
Units: Cyc/sec  

The second frequency value used when the SpecifyType item is Frequency.

Field: **Damping2**  
Field is Imported: No  
Format: Damping Ratios (Damping Items section of form)  
Units: Unitless  

The second damping ratio value used when the SpecifyType item is either Period or Frequency.
Table: Case - Direct History 4 - Integration Parameters

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Direct History-type analysis case.

Field: IntMethod
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Newmark, Wilson, Collocation, HilberHughesTaylor or ChungHulbert indicating the time integration method used.

Field: Gamma
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The value of the Gamma integration parameter. This item is an input value for the Newmark, Collocation and ChungHulbert integration methods.

Gamma is not an input value for the HilberHughesTaylor integration method. In this case it is calculated from Alpha.

Field: Beta
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The value of the Beta integration parameter. This item is an input value for the Newmark, Collocation and ChungHulbert integration methods.

Beta is not an input value for the HilberHughesTaylor integration method. In this case it is calculated from Alpha.

Field: Theta
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The value of the Theta integration parameter. This item is an input value for the Wilson and Collocation integration methods.
Field: Alpha
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The value of the Alpha integration parameter. This item is an input value for the HilberHughesTaylor and ChungHulbert integration methods.

Field: AlphaM
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The value of the AlphaM integration parameter. This item is an input value for the ChungHulbert integration method.

---

Table: Case - Direct History 5 - Nonlinear Parameters

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Direct History-type analysis case.

Field: GeoNonLin
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either None, P-Delta, or Large Displ indicating the type of geometric nonlinearity used for this analysis case, if any.

Field: DTMax
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Maximum allowed substep size.

Field: DTMin
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Minimum allowed substep size.
Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Maximum iterations per substep.

Field: ItConvTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Iteration convergence tolerance.

Field: EvLumpTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Event lumping tolerance.

Field: FrameTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if frame object tension or compression only is considered. Otherwise it is No.

Field: FrameHinge
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if frame object hinges are considered. Otherwise it is No.

Field: CableTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if cable object tension or compression only is considered. Otherwise it is No.

Field: LinkTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No
This item is Yes if hook and gap object tension and compression only is considered. Otherwise it is No.

Field: LinkOther
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if other link object nonlinearity is considered. Otherwise it is No. This item includes all link nonlinearity not included in the LinkTC item.

Table: Case - Modal 1 - General

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Modal-type analysis case.

Field: ModeType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Eigen or Ritz indicating the type of modes requested.

Field: MaxNumModes
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of modes requested.

Field: MinNumModes
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum number of modes requested.

Field: EigenShift
Field is Imported: Yes
Format: Frequency (Time-Related section of form)
Units: Cyc/sec
The eigenvalue shift frequency. This item only applies when the ModeType is Eigen.

Field: EigenCutoff
Field is Imported: Yes
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The eigenvalue cutoff frequency radius. This item only applies when the ModeType is Eigen.

Field: EigenTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The relative convergence tolerance on eigenvalues. This item only applies when the ModeType is Eigen.

Table: Case - Modal 2 - Load Assignments - Eigen

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Modal-type analysis case.

Field: LoadType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is Acceleration indicating the type of load specified.

Field: LoadName
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Accel UX, Accel UY, or Accel UZ.

Field: TargetPar
Field is Imported: Yes
Format: Controlled by program
Units: Percent

The target mass participation ratio.
Field: StatCorrect
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if static correction modes are to be calculated.
Otherwise it is No.

Table: Case - Modal 3 - Load Assignments - Ritz

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Modal-type analysis case.

Field: LoadType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Load case, Accel or Link indicating the type of load specified.

Field: LoadName
Field is Imported: Yes
Format: Controlled by program
Units: Text

If the LoadType item is Load, then this is the name of a load case.

If the LoadType item is Acceleration, then this is either Accel UX, Accel UY or Accel UZ.

If the LoadType item is Link, then this All Links.

Field: MaxCycles
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of generation cycles to be performed for the specified ritz starting vector. Inputting 0 means there is no limit on the number of cycles.

Field: TargetPar
Field is Imported: Yes
Format: Controlled by program  
Units: Percent  

The target dynamic participation ratio.

Table: Case - Modal History 1 - General

Field: Case  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Name of the Modal History-type analysis case.

Field: HistoryType  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

This item is either Transient, Periodic or Static indicating the type of modal history. For linear modal histories all three types are applicable. For nonlinear modal histories only the Transient type is applicable.

Field: OutSteps  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The number of output time steps.

Field: StepSize  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The output time-step size.

Field: DampingType  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This item is either Constant, Inter-Period, Inter-Freq or Pro-Direct, Pro-Period, or Pro-Freq indicating the method used to specify the modal damping.
Inter-Period means to interpolate based on damping given at specified periods. Inter-Freq means to interpolate based on damping given at specified frequencies.

Pro-Direct means mass and stiffness proportional coefficients are directly specified. Pro-Period means that mass and stiffness proportional coefficients are calculated based on two specified period and damping sets. Pro-Freq means that mass and stiffness proportional coefficients are calculated based on two specified frequency and damping sets.

Field: ConstDamp
Field is Imported: Yes
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

This item only applies if the DampingType item is Constant. It is the constant damping value.

Table: Case - Modal History 2 - Load Assignments

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Modal History-type analysis case.

Field: LoadType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Load case or Accel indicating the type of load specified.

Field: LoadName
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either the name of a load case or it is one of Accel U1, Accel U2, or Accel U3. The Accel items refer to ground acceleration loads in acceleration local coordinates. Note that the acceleration local coordinates are defined by the CoordSys and Angle items.

Field: Function
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of a function defining the time variation of the ground acceleration or load case.

**Field: LoadSF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Scale factor multiplying the ordinate values of the specified function.

**Field: TransAccSF**
- Field is Imported: Yes
- Format: Acceleration-Trans (Time-Related section of form)
- Units: Length/sec²

Scale factor multiplying the ordinate values of the specified function.

**Field: TimeFactor**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Scale factor multiplying the time (abscissa) values of the specified function.

**Field: ArrivalTime**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Arrival time for the specified function.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Coordinate system used to define the acceleration directions. This item only applies when the LoadType item is Acceleration.

**Field: Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Coordinate angle between the acceleration local 1 axis and the +X-axis of the coordinate system specified by the CoordSys item. The rotation is
about the Z-axis of the specified coordinate system. This item only applies when the LoadType item is Acceleration.

**Table: Case - Modal History 3 - Interpolated Damping**

**Field: Case**
  - Field is Imported: Yes
  - Format: Controlled by program
  - Units: Text

  Name of the Modal History-type analysis case.

**Field: Period**
  - Field is Imported: Yes
  - Format: Period (Time-Related section of form)
  - Units: Sec

  The period at which the specified damping ratio applies.

**Field: Frequency**
  - Field is Imported: Yes
  - Format: Frequency (Time-Related section of form)
  - Units: Cyc/sec

  The frequency at which the specified damping ratio applies.

**Field: Damping**
  - Field is Imported: Yes
  - Format: Damping Ratios (Damping Items section of form)
  - Units: Unitless

  The damping ratio as a fraction of critical damping (0.05 = 5%).

**Table: Case - Modal History 4 - Proportional Damping**

**Field: Case**
  - Field is Imported: Yes
  - Format: Controlled by program
  - Units: Text

  Name of the Modal History-type analysis case.

**Field: SpecifyType**
  - Field is Imported: No
  - Format: Controlled by program
  - Units: Text
This is either Direct, Period or Frequency indicating the method used to specify the mass and stiffness coefficients. Direct means that they are directly specified. Period means that they are specified using two periods and two associated damping ratios. Frequency means that they are specified using two frequencies and two associated damping ratios.

Field: MassCoeff
Field is Imported: Yes
Format: Controlled by program
Units: 1/Sec

The specified mass coefficient.

Field: StiffCoeff
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The specified stiffness coefficient.

Field: Period1
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The first period value used when the SpecifyType item is Period.

Field: Frequency1
Field is Imported: No
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The first frequency value used when the SpecifyType item is Frequency.

Field: Damping1
Field is Imported: No
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

The first damping ratio value used when the SpecifyType item is either Period or Frequency.

Field: Period2
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The second period value used when the SpecifyType item is Period.
Field: Frequency2
Field is Imported: No
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The second frequency value used when the SpecifyType item is Frequency.

Field: Damping2
Field is Imported: No
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

The second damping ratio value used when the SpecifyType item is either Period or Frequency.

Table: Case - Modal History 5 - Damping Overrides

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Modal History-type analysis case.

Field: Mode
Field is Imported: Yes
Format: Controlled by program
Units: Text

The mode number to which the specified damping applies.

Field: Damping
Field is Imported: Yes
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

Fraction of critical damping for the specified mode (0.05 = 5% critical damping).

Table: Case - Modal History 6 - Nonlinear Parameters

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the Modal History-type analysis case.

**Field: PeriodStat**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Period at which, and below, modes are treated as static.

**Field: DTMax**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Maximum allowed substep size.

**Field: DTMin**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Minimum allowed substep size.

**Field: FConvTol**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Relative force convergence tolerance.

**Field: EConvTol**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Relative energy convergence tolerance.

**Field: ForceItMax**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Maximum number of force iterations for large substeps.

**Field: ForceItMin**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
Minimum number of force iterations for large substeps.

Field: **ConvFactor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Convergence factor.

Field: **FrameTC**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if frame object tension or compression only is considered. Otherwise it is No.

Field: **FrameHinge**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if frame object hinges are considered. Otherwise it is No.

Field: **CableTC**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if cable object tension or compression only is considered. Otherwise it is No.

Field: **LinkTC**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if hook and gap object tension and compression only is considered. Otherwise it is No.

Field: **LinkOther**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if other link object nonlinearity is considered. Otherwise it is No. This item includes all link nonlinearity not included in the LinkTC item.
#### Table: Case - Moving Load 1 - Lane Assignments

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case</strong></td>
<td>Name of the Moving Load-type analysis case.</td>
</tr>
<tr>
<td><strong>AssignNum</strong></td>
<td>The lane assignment number.</td>
</tr>
<tr>
<td><strong>VehClass</strong></td>
<td>The vehicle class used for this lane assignment.</td>
</tr>
<tr>
<td><strong>ScaleFactor</strong></td>
<td>A scale factor that multiplies the vehicle loads in the associated vehicle class.</td>
</tr>
<tr>
<td><strong>MinLoaded</strong></td>
<td>Minimum number of lanes to be loaded by the specified vehicle class for this lane assignment.</td>
</tr>
<tr>
<td><strong>MaxLoaded</strong></td>
<td>Maximum number of lanes to be loaded by the specified vehicle class for this lane assignment.</td>
</tr>
<tr>
<td><strong>NumLanes</strong></td>
<td>Field is Imported: No</td>
</tr>
</tbody>
</table>
Format: Controlled by program
Units: Unitless

Total number of lanes loaded by the specified vehicle class for this lane assignment.

**Table: Case - Moving Load 2 - Lanes Loaded**

**Field: Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Moving Load-type analysis case.

**Field: AssignNum**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The lane assignment number.

**Field: Lane**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a lane that is loaded by the vehicle class associated with this lane assignment.

**Table: Case - Moving Load 3 - MultiLane Factors**

**Field: Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Moving Load-type analysis case.

**Field: NumberLanes**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of loaded lanes considered.
Field: **ScaleFactor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The multiple-lane scale factor applied to the Moving Load analysis case if the number of loaded lanes is that specified by the NumberLanes item.

**Table: Case - Response Spectrum 1 - General**

Field: **Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Response Spectrum-type analysis case.

Field: **ModalCombo**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The modal combination method. This is either CQC, SRSS, ABS, or GMC.

Field: **GMCf1**
- Field is Imported: Yes
- Format: Frequency (Time-Related section of form)
- Units: Cyc/sec

GMCf1 and GMCf2 are frequencies that define the rigid-response content of the ground motion when the GMC modal combination method is used.

Field: **GMCf2**
- Field is Imported: Yes
- Format: Frequency (Time-Related section of form)
- Units: Cyc/sec

GMCf1 and GMCf2 are frequencies that define the rigid-response content of the ground motion when the GMC modal combination method is used.

Field: **DirCombo**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
The directional combination method. This is either SRSS or ABS.

Field: ABSSF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The scale factor used for the ABS directional combination method.

Field: DampingType
Field is Imported: No
Format: Controlled by program
Units: Text

This item is either Constant, Inter-Period, Inter-Freq or Pro-Direct, Pro-Period, or Pro-Freq indicating the method used to specify the modal damping.

Inter-Period means to interpolate based on damping given at specified periods. Inter-Freq means to interpolate based on damping given at specified frequencies.

Pro-Direct means mass and stiffness proportional coefficients are directly specified. Pro-Period means that mass and stiffness proportional coefficients are calculated based on two specified period and damping sets. Pro-Freq means that mass and stiffness proportional coefficients are calculated based on two specified frequency and damping sets.

Field: ConstDamp
Field is Imported: Yes
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

This item only applies if the DampingType is Constant. It is the constant modal damping (as a fraction of critical damping, 0.05 = 5%) applied to all modes. The damping reported here does not include any additional modal damping that may come from link objects in the structure.

Field: FuncDamp
Field is Imported: Yes
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

All functions used for the specified response spectrum analysis case are assumed to be defined at this fraction of critical damping.
## Table: Case - Response Spectrum 2 - Load Assignments

**Field: Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Response Spectrum-type analysis case.

**Field: LoadType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is Acceleration indicating the type of load specified.

**Field: LoadName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Accel U1, Accel U2, or Accel U3.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the coordinate system used to define the local acceleration directions.

**Field: Function**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a function that defines the response spectrum curve used for the specified acceleration.

**Field: Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The coordinate angle between the response spectrum local 1 axis and the positive X-axis in the coordinate system specified by the CoordSys item. Positive angles are measured counterclockwise from the coordinate system X axis to the response spectrum local 1 axis.
Field: TransAccSF
Field is Imported: Yes
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

A scale factor multiplying the acceleration values of the associated response spectrum function.

Table: Case - Response Spectrum 3 - Interpolated Damping

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Response Spectrum-type analysis case.

Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The period at which the specified damping ratio applies.

Field: Frequency
Field is Imported: Yes
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The frequency at which the specified damping ratio applies.

Field: Damping
Field is Imported: Yes
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

The damping ratio as a fraction of critical damping (0.05 = 5%).

Table: Case - Response Spectrum 4 - Proportional Damping

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the Response Spectrum-type analysis case.

**Field: SpecifyType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Direct, Period or Frequency indicating the method used to specify the mass and stiffness coefficients. Direct means that they are directly specified. Period means that they are specified using two periods and two associated damping ratios. Frequency means that they are specified using two frequencies and two associated damping ratios.

**Field: MassCoeff**
- Field is Imported: Yes
- Format: Controlled by program
- Units: 1/Sec

The specified mass coefficient.

**Field: StiffCoeff**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The specified stiffness coefficient.

**Field: Period1**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec

The first period value used when the SpecifyType item is Period.

**Field: Frequency1**
- Field is Imported: No
- Format: Frequency (Time-Related section of form)
- Units: Cyc/sec

The first frequency value used when the SpecifyType item is Frequency.

**Field: Damping1**
- Field is Imported: No
- Format: Damping Ratios (Damping Items section of form)
- Units: Unitless

The first damping ratio value used when the SpecifyType item is either Period or Frequency.
Field: **Period2**  
Field is Imported: No  
Format: Period (Time-Related section of form)  
Units: Sec  

The second period value used when the SpecifyType item is Period.

Field: **Frequency2**  
Field is Imported: No  
Format: Frequency (Time-Related section of form)  
Units: Cyc/sec  

The second frequency value used when the SpecifyType item is Frequency.

Field: **Damping2**  
Field is Imported: No  
Format: Damping Ratios (Damping Items section of form)  
Units: Unitless  

The second damping ratio value used when the SpecifyType item is either Period or Frequency.

**Table: Case - Response Spectrum 5 - Damping Overrides**

Field: **Case**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Name of the Response Spectrum-type analysis case.

Field: **Mode**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

The mode number to which the specified damping applies.

Field: **Damping**  
Field is Imported: Yes  
Format: Damping Ratios (Damping Items section of form)  
Units: Unitless  

Fraction of critical damping for the specified mode (0.05 = 5% critical damping).
Table: Case - Static 1 - Load Assignments

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Static-type analysis case.

Field: LoadType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Load case, Accel, or Mode indicating the type of load specified. The Mode load type only applies to Nonlinear static analysis cases.

Field: LoadName
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either the name of a load case, Accel UX, Accel UY, Accel UZ, or a mode number.

Accel UX, UY and UZ imply a uniform acceleration acting in the global X, Y and Z directions, respectively. The force applied at each joint is proportional to the mass tributary to that joint.

A mode number, together with an associated Modal analysis case implies a force at each joint in proportion to the product of the modal displacement, the modal circular frequency squared, and the mass tributary to that joint. The force is assumed to act in the direction of the modal displacement.

Field: LoadSF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A unitless scale factor that multiplies the associated load case (or mode) value.

Field: TransAccSF
Field is Imported: Yes
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec2

A uniformly distributed translational acceleration at each joint.
A scale factor (with translational acceleration units) that multiplies the associated acceleration value.

Table: Case - Static 2 - Nonlinear Load Application

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Static-type analysis case.

Field: LoadApp
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Full Load or Displ Ctrl indicating the type of load application.

Field: DisplType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Conjugate or Monitored indicating the control displacement type.

Field: TargetDispl
Field is Imported: Yes
Format: Translational Displ (Displacements section of form)
Units: Length

The target translational displacement for the displacement-controlled nonlinear static case.

Field: TargetRot
Field is Imported: Yes
Format: Rotational Displ (Displacements section of form)
Units: Radians

The target rotational displacement for the displacement-controlled nonlinear static case.

Field: MonitorDOF
Field is Imported: Yes
Format: Controlled by program
Units: Text
This item is either U1, U2, U3, R1, R2, or R3. It is the degree of freedom of the specified joint for which the displacement is monitored.

Field: MonitorJt
Field is Imported: Yes
Format: Controlled by program
Units: Text

The label of the joint at which the displacement is monitored.

Field: GenDispl
Field is Imported: Yes
Format: Controlled by program
Units: Text

The label of a generalized displacement for which the displacement is monitored.

Table: Case - Static 3 - Nonlinear Stage Information

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Static-type analysis case.

Field: Stage
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stage number considered.

Field: Operation
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Add or Remove indicating whether the specified group is to be added to the structure or removed from the structure.

Field: GroupName
Field is Imported: Yes
Format: Controlled by program
Units: Text
The name of the group that is to be added to or removed from the structure for the specified stage.

### Table: Case - Static 4 - Nonlinear Parameters

**Field: Case**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Static-type analysis case.

**Field: Unloading**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Unload Entire, Local Redist or Restart Secant indicating the unloading method used when a hinge drops load.

**Field: GeoNonLin**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either None, P-Delta, or Large Displ indicating the type of geometric nonlinearity used for this analysis case, if any.

**Field: ResultsSave**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Final State or Multiple States indicating the how much of the analysis results are saved.

**Field: MinNumState**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The specified minimum number of saved states. This item only applies if the ResultsSave item is Multiple States.

**Field: MaxNumState**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The specified maximum number of saved states. This item only applies if the ResultsSave item is Multiple States.

Field: PosIncOnly
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if positive displacement increments only are saved. Otherwise it is No. This item only applies if the ResultsSave item is Multiple States.

Field: MaxTotal
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Maximum total number of steps per stage.

Field: MaxNull
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Maximum number of null (zero) steps per stage.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Maximum number of iterations per step.

Field: ItConvTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Relative iteration convergence tolerance.

Field: EvLumpTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Relative event lumping tolerance.
Field: FrameTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if frame object tension or compression only is considered. Otherwise it is No.

Field: FrameHinge
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if frame object hinges are considered. Otherwise it is No.

Field: CableTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if cable object tension or compression only is considered. Otherwise it is No.

Field: LinkTC
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if hook and gap object tension and compression only is considered. Otherwise it is No.

Field: LinkOther
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if other link object nonlinearity is considered. Otherwise it is No. This item includes all link nonlinearity not included in the LinkTC item.

Table: Case - Steady State 1 - General

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the Undamped Steady State-type analysis case.

Field: LoadFreq
Field is Imported: Yes
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The load frequency used for this steady-state analysis case.

### Table: Case - Steady State 2 - Load Assignments

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Steady State-type analysis case.

Field: LoadType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Load case or Accel indicating the type of load specified.

Field: LoadName
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either the name of a load case, Accel UX, Accel UY, or Accel UZ.

Accel UX, UY and UZ imply a uniform acceleration acting in the global X, Y and Z directions, respectively. The force applied at each joint is proportional to the mass tributary to that joint.

Field: LoadSF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A unitless scale factor that multiplies the associated load case value.

Field: TransAccSF
Field is Imported: Yes
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

A scale factor (with translational acceleration units) that multiplies the associated acceleration value.

Table: Connectivity - Area

Field: Area
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of an area object.

Field: Joint1
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 1 for the Area object.

Field: Joint2
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 2 for the Area object.

Field: Joint3
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 3 for the Area object.

Field: Joint4
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 4 for the Area object.

Field: Area
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length²
Area of the area object.

**Field: Volume**
- Field is Imported: No
- Format: Length3 (Section Dimensions section of form)
- Units: Length3

Volume of the area object (area times membrane thickness).

**Table: Connectivity - Frame/Cable**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: JointI**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of joint I for the Frame object.

**Field: JointJ**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of joint J for the Frame object.

**Field: Length**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

Total length of the frame object.

**Table: Connectivity - Link**

**Field: Link**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Link object.
Field: JointI
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint I for the Link object.

Field: JointJ
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint J for the Link object.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Total length of the link object.

Table: Connectivity - Solid

Field: Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: Joint1
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 1 for the Solid object.

Field: Joint2
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 2 for the Solid object.

Field: Joint3
Field is Imported: Yes
Format: Controlled by program
Units: Text
Label of joint 3 for the Solid object.

Field: Joint4
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 4 for the Solid object.

Field: Joint5
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 5 for the Solid object.

Field: Joint6
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 6 for the Solid object.

Field: Joint7
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 7 for the Solid object.

Field: Joint8
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of joint 8 for the Solid object.

Field: Volume
Field is Imported: No
Format: Length3 (Section Dimensions section of form)
Units: Length3

Total volume of the solid object.
### Table: Constraint Definitions - Beam

#### Field: Name
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a Beam constraint.

#### Field: CoordSys
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the coordinate system in which the Beam constraint is defined.

#### Field: Axis
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Axis in the specified coordinate system that is parallel to the axis of the Beam constraint. This may be X, Y, Z or Auto. If Auto then the axis is automatically determined from the joints assigned to the constraint.

### Table: Constraint Definitions - Body

#### Field: Name
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a Body constraint.

#### Field: CoordSys
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the coordinate system in which the Body constraint is defined.

#### Field: UX
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if DOF UX is constrained. Otherwise it is No.
Field: UY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UY is constrained. Otherwise it is No.

Field: UZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UZ is constrained. Otherwise it is No.

Field: RX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RX is constrained. Otherwise it is No.

Field: RY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RY is constrained. Otherwise it is No.

Field: RZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RZ is constrained. Otherwise it is No.

Table: Constraint Definitions - Diaphragm

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a Diaphragm constraint.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the coordinate system in which the Diaphragm constraint is defined.

Field: **Axis**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Axis in the specified coordinate system that is perpendicular to the plane of the Diaphragm constraint. This may be X, Y, Z or Auto. If Auto then the axis is automatically determined from the joints assigned to the constraint.

Field: **MultiLevel**

Field is Imported: Yes  
Format: Controlled by program  
Units: Yes/No

This item is either Yes or No.

If this item is Yes, then when the diaphragm constraint is assigned to selected joints using the Assign menu > Joint > Constraints command the program automatically creates new diaphragm constraint assignments at each different Z level among the selected joints. The Z level is determined in the constraint coordinate system.

The new diaphragms constraint names have a prefix of the original diaphragm name and a suffix of the elevation. The elevation portion of the name is in the database units for the model, that is the units in which the model was created.

Each selected point is assigned the diaphragm constraint for its Z elevation. The net result is a series of diaphragm assignments at different Z elevations.

Note that this special multilevel assignment only works when the constraint assignment is made using the Assign menu > Joint > Constraints command. Any multilevel assignment made through the database is ignored and an error message is generated in the import log.

**Table: Constraint Definitions - Equal**

Field: **Name**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of a Equal constraint.
Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the coordinate system in which the Equal constraint is defined.

Field: UX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UX is constrained. Otherwise it is No.

Field: UY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UY is constrained. Otherwise it is No.

Field: UZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UZ is constrained. Otherwise it is No.

Field: RX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RX is constrained. Otherwise it is No.

Field: RY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RY is constrained. Otherwise it is No.

Field: RZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RZ is constrained. Otherwise it is No.
### Table: Constraint Definitions - Line

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Name  | Field is Imported: Yes  
Format: Controlled by program  
Units: Text  
Name of a Line constraint. |
| CoordSys | Field is Imported: Yes  
Format: Controlled by program  
Units: Text  
Name of the coordinate system in which the Body constraint is defined. |
| UX | Field is Imported: Yes  
Format: Yes/No  
This item is Yes if DOF UX is constrained. Otherwise it is No. |
| UY | Field is Imported: Yes  
Format: Yes/No  
This item is Yes if DOF UY is constrained. Otherwise it is No. |
| UZ | Field is Imported: Yes  
Format: Yes/No  
This item is Yes if DOF UZ is constrained. Otherwise it is No. |
| RX | Field is Imported: Yes  
Format: Yes/No  
This item is Yes if DOF RX is constrained. Otherwise it is No. |
| RY | Field is Imported: Yes  
Format: Yes/No |
This item is Yes if DOF RY is constrained. Otherwise it is No.

Field: RZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RZ is constrained. Otherwise it is No.

Table: Constraint Definitions - Local

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a Local constraint.

Field: U1
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF U1 is constrained. Otherwise it is No.

Field: U2
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF U2 is constrained. Otherwise it is No.

Field: U3
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF U3 is constrained. Otherwise it is No.

Field: R1
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF R1 is constrained. Otherwise it is No.

Field: R2
Field is Imported: Yes
Field: R3

Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF R3 is constrained. Otherwise it is No.

Table: Constraint Definitions - Plate

Field: Name

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a Plate constraint.

Field: CoordSys

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the coordinate system in which the Plate constraint is defined.

Field: Axis

Field is Imported: Yes
Format: Controlled by program
Units: Text

Axis in the specified coordinate system that is perpendicular to the plane of the Plate constraint. This may be X, Y, Z or Auto. If Auto then the axis is automatically determined from the joints assigned to the constraint.

Table: Constraint Definitions - Rod

Field: Name

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a Rod constraint.
Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the coordinate system in which the Rod constraint is defined.

Field: Axis
Field is Imported: Yes
Format: Controlled by program
Units: Text

Axis in the specified coordinate system that is parallel to the axis of the Rod constraint. This may be X, Y, Z or Auto. If Auto then the axis is automatically determined from the joints assigned to the constraint.

Table: Constraint Definitions - Weld

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a Weld constraint.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the coordinate system in which the Weld constraint is defined.

Field: UX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UX is constrained. Otherwise it is No.

Field: UY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF UY is constrained. Otherwise it is No.

Field: UZ
Field is Imported: Yes
This item is Yes if DOF UZ is constrained. Otherwise it is No.

Field: RX
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RX is constrained. Otherwise it is No.

Field: RY
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RY is constrained. Otherwise it is No.

Field: RZ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if DOF RZ is constrained. Otherwise it is No.

Field: Tolerance
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The distance tolerance for the weld constraint. All joints within this distance of each other are "welded", that is, they are constrained by an internal body constraint.

Table: Coordinate Systems

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a coordinate system.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text
This item is either Cartesian, Cylindrical or General indicating the type of coordinate system.

Field: X
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global X-coordinate of the origin of the coordinate system specified.

Field: Y
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Y-coordinate of the origin of the coordinate system specified.

Field: Z
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Z-coordinate of the origin of the coordinate system specified.

Field: AboutZ
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The rotation of a coordinate system relative to the global coordinate system is defined as follows: (1) Rotate the coordinate system about the positive global Z-axis as defined by the AboutZ item. (2) Rotate the coordinate system about the positive global Y-axis as defined by the AboutY item. (3) Rotate the coordinate system about the positive global X-axis as defined by the AboutX item. Note that the order in which these rotations are performed is important.

Field: AboutY
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The rotation of a coordinate system relative to the global coordinate system is defined as follows: (1) Rotate the coordinate system about the positive global Z-axis as defined by the AboutZ item. (2) Rotate the coordinate system about the positive global Y-axis as defined by the AboutY item. (3) Rotate the coordinate system about the positive global
X-axis as defined by the AboutY item. Note that the order in which these rotations are performed is important.

**Field: AboutX**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The rotation of a coordinate system relative to the global coordinate system is defined as follows: (1) Rotate the coordinate system about the positive global Z-axis as defined by the AboutZ item. (2) Rotate the coordinate system about the positive global Y-axis as defined by the AboutY item. (3) Rotate the coordinate system about the positive global X-axis as defined by the AboutY item. Note that the order in which these rotations are performed is important.

**Table: Database Documentation**

**Field: TableKey**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The table name key. This key is used internally by the program and CAN NOT be changed by the user.

**Field: TableName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of the database table as it appears in the database and in the printed output.

**Field: FieldKey**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The field name key. This key is used internally by the program and CAN NOT be changed by the user.

**Field: FieldName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
The name of the database field as it appears in the database and in the printed output.

Field: Description
Field is Imported: Yes
Format: Controlled by program
Units: Text

Description of a field in the associated database table.

Field: FieldFormat
Field is Imported: Yes
Format: Controlled by program
Units: Text

The format type associated with the field.

Field: FieldImport
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the field is imported. Otherwise it is No.

Field: FieldRepeat
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

If the table needs to be broken up when printed, then if this item is Yes the associated field will be repeated.

Field: FieldGroup
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Fields with the same group number are typically printed together in the printed output.

Field: TableType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Input, Documentation or Output indicating the type of table.
Field: TableArea
Field is Imported: Yes
Format: Controlled by program
Units: Text

The area of the Database Tables form which includes the check box that activates display of the associated table.

Field: TableChkBox
Field is Imported: Yes
Format: Controlled by program
Units: Text

The check box that activates display of the associated table.

Table: Database Field Names

Field: TableName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The table name.

Field: FieldKey
Field is Imported: Yes
Format: Controlled by program
Units: Text

The field name key. This key is used internally by the program and CAN NOT be changed by the user.

Field: FieldName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the database field as it appears in the database.

Table: Database Format Types

Field: FormatType
Field is Imported: Yes
Format: Controlled by program
Units: Text
Type of item as specified in the Database Display Format Form which is accessed using the Options menu > Preferences > Database Display Format command.

Field: Units
Field is Imported: Yes
Format: Controlled by program
Units: Text

The units specified in the Database Display Format Form for the item.

Field: DecPlaces
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of decimal places specified in the Database Display Format Form for the item.

Field: MinSigFig
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum number of significant figures specified in the Database Display Format Form for the item.

Field: ZeroTol
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The zero tolerance specified in the Database Display Format Form for the item.

Field: AlwaysE
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

The value specified for the Always Use E Format item in the Database Display Format Form for the item.

Field: ConvFactor
Field is Imported: No
Format: Controlled by program
Units: Unitless
The units conversion factor. Multiplying the value in the database table by this factor gives the value in the units specified in the Units field.

Field: UnitsCurr
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the database data is always displayed in the current units. Otherwise it is No.

Field: OverrideE
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the program is not to automatically convert to E format when the specified value is too small to display with the specified number of significant figures and decimal places. Otherwise it is No.

When this item is Yes a value to small to display with the specified number of significant figures and decimal places is displayed with less significant figures and decimal places. If the value is smaller than $1 / (10^{\text{NumDecimalPlaces}}) / 2$, then it is reported as zero, regardless of the specified zero tolerance. If the value is greater than $1 / (10^{\text{NumDecimalPlaces}}) / 2$ but less than $1 / (10^{\text{NumDecimalPlaces}})$, then it is reported as $1 / (10^{\text{NumDecimalPlaces}})$.

Table: Database Table Names

Field: TableKey
Field is Imported: Yes
Format: Controlled by program
Units: Text

The table name key. This key is used internally by the program and CAN NOT be changed by the user.

Field: TableName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the database table as it appears in the database.
Table: Frame Added Mass Assignments

Field: Frame
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: MassPerLen
- Field is Imported: Yes
- Format: Mass/Length (Mass and Weight section of form)
- Units: Force-Sec2/Length2

Added mass per unit length applied to the frame object.

Table: Frame Cable Assignments

Field: Frame
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: NumSegments
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of segments into which the program will internally discretize the cable object.

Field: ShapeType
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Tension or Sag indicating which user specified parameter (Tension or Sag) will be used by the program to calculate the cable shape.

Field: Tension
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force
A user specified tension that is used by the program to calculate the cable shape. See also the DrapeType item.

**Field: Sag**
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

A user specified cable sag that is used by the program to calculate the cable shape. See also the DrapeType item.

**Field: ShapeLoad**
- Field is Imported: Yes
- Format: Force/Length (Forces section of form)
- Units: Force/Length

A user uniform load that is used together with the cable self weight when the program calculates the cable shape.

**Table: Frame Design Procedures**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignProc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either From Material or No Design indicating the design procedure for the frame object.

**Table: Frame Insertion Point Assignments**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: CardinalPt**
- Field is Imported: Yes
Format: Controlled by program
Units: Text

The cardinal point for the object. This item defines the relative position of the object section on the line representing the frame/cable object. It may be any one of the following:
1 (bottom left),
2 (bottom center),
3 (bottom right),
4 (middle left),
5 (middle center),
6 (middle right),
7 (top left),
8 (top center),
9 (top right),
10 (centroid), and
11 (shear center).
Note that the numbers 1 through 10 are analogous to those specified for the cardinal point in Intergraph FrameWorks.

Field: JtOffsetXI
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global X direction at the I-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Field: JtOffsetYI
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global Y direction at the I-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Field: JtOffsetZI
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global Z direction at the I-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Field: JtOffsetXJ
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global X direction at the J-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Field: JtOffsetYJ
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global Y direction at the J-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Field: JtOffsetZJ
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The rigid frame joint offset in the global Z direction at the J-end of the frame object. The offset is measured from the joint location to the end of the frame object (at the cardinal point).

Table: Frame Loads - Distributed

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the load is defined. Local means that the load is specified in an object local axis direction.
Field: **Type**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Force or Moment indicating the type of load assigned.

Field: **Dir**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 1, 2, 3, X, Y, Z, X Proj, Y Proj, Z Proj, Gravity or Grav Proj indicating the direction of the load. 1, 2 and 3 indicate the local axes directions of the frame object. X, Y and Z indicate the X, Y and Z directions of the specified coordinate system. Gravity is in the negative global Z direction. X Proj, Y Proj or Z Proj are projected forces in the specified coordinate system. Projected forces are scaled by the sine of the angle between the frame object and the direction of load. Projected moments are scaled by the cosine of the angle between the frame object and the direction of load.

Field: **DistType**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either RelDist or AbsDist. It indicates which of the distance fields (RelDist or AbsDist) will be read on import.

Field: **RelDistA**
Field is Imported: Yes
Format: Relative Distance (Structure Dimensions section of form)
Units: Unitless

The specified relative distance from the I-end of the frame object to the starting point of the load segment considered. The relative distance is equal to the absolute distance divided by the beam length.

Field: **RelDistB**
Field is Imported: Yes
Format: Relative Distance (Structure Dimensions section of form)
Units: Unitless

The specified relative distance from the I-end of the frame object to the ending point of the load segment considered. The relative distance is equal to the absolute distance divided by the beam length.
Field: AbsDistA
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute distance from the I-end of the frame object to the
starting point of the load segment considered.

Field: AbsDistB
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute distance from the I-end of the frame object to the
ending point of the load segment considered.

Field: FOverLA
Field is Imported: Yes
Format: Force/Length (Forces section of form)
Units: Force/Length

The force intensity at the starting point of the load segment considered.

Field: FOverLB
Field is Imported: Yes
Format: Force/Length (Forces section of form)
Units: Force/Length

The force intensity at the ending point of the load segment considered.

Field: MOverLA
Field is Imported: Yes
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The moment intensity at the starting point of the load segment
considered.

Field: MOverLB
Field is Imported: Yes
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The moment intensity at the ending point of the load segment considered.
Table: **Frame Loads - Gravity**

Field: **Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

Field: **CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the coordinate system in which the gravity loads are defined.

Field: **MultiplierX**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The applied gravity load in the X-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierX scale factor.

Field: **MultiplierY**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The applied gravity load in the Y-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierY scale factor.

Field: **MultiplierZ**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The applied gravity load in the Z-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierZ scale factor.
Table: Frame Loads - Point

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the load is defined. Local means that the load is specified in an object local axis direction.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Force or Moment indicating the type of load assigned.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 1, 2, 3, X, Y, Z or Gravity indicating the direction of the load. 1, 2 and 3 indicate the local axes directions of the frame object. X, Y and Z indicate the X, Y and Z directions of the specified coordinate system. Gravity is in the negative global Z direction.

Field: DistType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either RelDist or AbsDist. It indicates which of the distance fields (RelDist or AbsDist) will be read on import.
Field: RelDist

Field is Imported: Yes
Format: Relative Distance (Structure Dimensions section of form)
Units: Unitless

The specified relative distance from the I-end of the frame object to the load location. The relative distance is equal to the absolute distance divided by the beam length.

Field: AbsDist

Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute distance from the I-end of the frame object to the load location.

Field: Force

Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The point force applied at the specified location along the frame object.

Field: Moment

Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

The point moment applied at the specified location along the frame object.

Table: Frame Loads - Temperature

Field: Frame

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: LoadCase

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.
This item is either Temperature, Gradient2, or Gradient3 indicating the type of temperature load applied to the frame object.

The temperature assignment to the Frame object.

The temperature gradient in the local 2 direction (units are delta temperature/thickness 2-2) assignment to the Frame object.

The temperature gradient in the local 3 direction (units are delta temperature/thickness 3-3) assignment to the Frame object.

The label of a Joint Pattern of scale factors multiplying the temperature change and temperature gradient values. If no pattern is specified then a unit scale factor is assumed at every joint.

Table: Frame Local Axes Assignments 1 - Typical

Label of a Frame object.
Field: **Angle**
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle that the local 2 and 3 axes are rotated about the positive local 1 axis, from the default orientation or from the orientation determined by the plane reference vector. The rotation for a positive angle appears counterclockwise when the local +1 axis is pointing toward you.

Field: **MirrorAbt2**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This is Yes if, for design, the frame section is assumed to be mirrored (flipped) about the local 2-axis. This item does not affect the analysis, it only affects the design.

Field: **MirrorAbt3**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This is Yes if, for design, the frame section is assumed to be mirrored (flipped) about the local 3-axis. This item does not affect the analysis, it only affects the design.

Field: **AdvanceAxes**
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if an advanced method is used to define the local axes reference vectors for the frame object. Otherwise it is No meaning that the default reference vectors are used.

Default means that the local 1-axis for the frame object goes from the I-end to the J-end of the object. The local 2-axis direction is specified by an angle measured from the global +Z axis (or from the global +X axis if the object local 1-axis is parallel to the global +Z axis). The rotation for a positive angle appears counterclockwise when the local +1 axis is pointing toward you.

Advanced means that the local axes are defined with respect to user-defined reference vectors. Note that when the advanced system is used, the specified Angle is applied to the local axes orientation defined by the user specified reference vectors.
### Table: Frame Local Axes Assignments 2 - Advanced

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Field:** Frame | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
|                | Label of a Frame object.                                                 |
| **Field:** LocalPlane | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
|                | This item indicates the local plane that is to be determined by the plane 
reference vector. It is either 12 or 13, indicating the 1-2 or the 1-3 plane, 
respectively. |
| **Field:** PIOption1 | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
|                | This is either Coord Dir, Two Joints or User Vector indicating the first 
method used to determine the plane reference vector. |
| **Field:** PICoordSys | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
|                | The coordinate system used to define the plane reference vector 
coordinate directions and the plane user vector. |
| **Field:** CoordDir1 | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
|                | The primary coordinate direction taken at the object center in the 
specified coordinate system. It is used to determine the reference 
| **Field:** CoordDir2 | Field is Imported: Yes  
Format: Controlled by program  
Units: Text                                                                 |
The secondary coordinate direction taken at the object center in the specified coordinate system. It is used to determine the reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PlVecJt1
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecX
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.
Table: Frame Material Temperatures

Field: Frame
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  Label of a Frame object.

Field: Temp
  Field is Imported: Yes
  Format: Temperature (Forces section of form)
  Units: Temp

  The Frame object material temperature.

Field: JtPattern
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  Label of a Joint Pattern of scale factors that multiply the specified material temperatures. If no joint pattern is specified then this item is reported as None.

Table: Frame NL Hinge Assignments

Field: Frame
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  Label of a Frame object.

Field: AssignHinge
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  The name of a hinge property assigned to the specified frame object.

Field: GenHinge
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The name of the hinge property generated by the program for the specified frame object based on the assigned hinge property.
Field: DistType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either RelDist or AbsDist. It indicates which of the distance fields (RelDist or AbsDist) will be read on import.

Field: RelDist
Field is Imported: Yes
Format: Relative Distance (Structure Dimensions section of form)
Units: Unitless

The specified relative distance from the I-end of the frame object to the hinge location. The relative distance is equal to the absolute distance divided by the beam length.

If you specify a hinge that falls on the end length offsets at the ends of the frame object, then the program automatically relocates the hinge at the inside face of the end offset.

Field: AbsDist
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute distance from the I-end of the frame object to the hinge location

If you specify a hinge that falls on the end length offsets at the ends of the frame object, then the program automatically relocates the hinge at the inside face of the end offset.

Field: ActualDist
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

that the program will use.

Typically the ActualDist item is the same as the AbsDist item, however, if you specified that the hinge falls on the end length offset of the frame object, then the ActualDist and AbsDist items will be different.

Table: Frame Offset Along Length Assignments

Field: Frame
Field is Imported: Yes
Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Automatic or User indicating how the offsets along the length of the frame object are determined. Automatic means that the offset length is determined automatically from the frame object connectivity. User defined means that the user specified the offsets.

Field: LengthI
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Offset along the length of the frame object at the I-end of the object.

Field: LengthJ
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Offset along the length of the frame object at the J-end of the object.

Field: RigidFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The rigid zone factor. This is the fraction of the end offset length assumed to be rigid for bending and shear deformations.

Table: Frame Output Station Assignments

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: StationType
Field is Imported: Yes
This is either MinNumSta or MaxStaSpcg. It indicates which of the output station fields (MinNumSta or MaxStaSpcg) will be read on import.

Field: MinNumSta
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum number of output stations along the frame object. If the MaxStaSpcg item is specified for the frame object then this item is blank.

Field: MaxStaSpcg
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The maximum spacing between output stations along the frame object. If the MinNumSta item is specified for the frame object then this item is blank.

Table: Frame P-Delta Force Assignments

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Coordinate system used to define the projection of the P-Delta axial force.

Field: Direction
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Local 1, X Proj, Y Proj or Z Proj indicating the direction of the specified force.
Field: Force
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

P-Delta axial force in the specified direction. If the direction is a projection then this is the projection of the P-Delta axial force upon the indicated axis of the specified coordinate system.

Table: Frame Prestress 1 - Patterns

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Tension
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The tension in the prestressing cable.

Field: Drapel
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The cable drape at the I-end of the frame object measured from the centroid of the frame object, in the local 2-axis direction. The cable drape at the I and J ends of the object is positive measured upward from the centroid. The cable drape at the center of the object is positive measured downward.

Field: DrapeCenter
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The cable drape at the center of the frame object measured from the centroid of the frame object, in the local 2-axis direction. The cable drape at the I and J ends of the object is positive measured upward from the centroid. The cable drape at the center of the object is positive measured downward.
Field: DrapeJ

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The cable drape at the J-end of the frame object measured from the centroid of the frame object, in the local 2-axis direction. The cable drape at the I and J ends of the object is positive measured upward from the centroid. The cable drape at the center of the object is positive measured downward.

Table: Frame Prestress 2 - Load Multipliers

Field: Frame

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: LoadCase

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: Multiplier

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A scale factor that multiplies the prestress load created by all prestressing tendons that act on the object.

Table: Frame Property Modifiers

Field: Frame

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: AMod

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for frame cross-section (axial) area. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: AS2Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for frame shear area in the 2 direction. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: AS3Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for frame shear area in the 3 direction. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: JMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for frame torsional constant. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: I22Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for frame moment of inertia about the local 2-axis. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: I33Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Multiplier for frame moment of inertia about the local 3-axis. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: MassMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for the frame element self mass. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Field: WeightMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Multiplier for the frame element self weight. This item is multiplied times the similar modifier specified for the frame section; it does not replace the modifier specified for the frame section.

Table: Frame Reference Temperatures

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The Frame object reference temperature.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified reference temperatures. If no joint pattern is specified then this item is reported as None.
**Table: Frame Release Assignments 1 - General**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

Label of a Frame object.

**Field: PI**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the axial degree of freedom is released at the I-end of the frame object.

**Field: V2I**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the shear in the local 2-axis direction degree of freedom is released at the I-end of the frame object.

**Field: V3I**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the shear in the local 3-axis direction degree of freedom is released at the I-end of the frame object.

**Field: TI**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the torsion degree of freedom is released at the I-end of the frame object.

**Field: M2I**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the moment about the local 2-axis degree of freedom is released at the I-end of the frame object.
Field: M3I
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the moment about the local 3-axis degree of freedom is released at the I-end of the frame object.

Field: PJ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the axial degree of freedom is released at the J-end of the frame object.

Field: V2J
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the shear in the local 2-axis direction degree of freedom is released at the J-end of the frame object.

Field: V3J
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the shear in the local 3-axis direction degree of freedom is released at the J-end of the frame object.

Field: TJ
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the torsion degree of freedom is released at the I-end of the frame object.

Field: M2J
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes or No indicating whether the moment about the local 2-axis degree of freedom is released at the J-end of the frame object.
### Field: M3J
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes or No indicating whether the moment about the local 3-axis degree of freedom is released at the J-end of the frame object.

### Field: PartialFix
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is Yes if any of the releases assigned at the specified frame end have partial fixity. Otherwise it is No.

### Table: Frame Release Assignments 2 - Partial Fixity

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>PI</td>
<td>Partial fixity spring stiffness for axial deformations at the I-end of the frame object.</td>
</tr>
<tr>
<td>V2I</td>
<td>Partial fixity spring stiffness for shear deformations in the local 2-axis direction at the I-end of the frame object.</td>
</tr>
<tr>
<td>V3I</td>
<td>Partial fixity spring stiffness for shear deformations in the local 3-axis direction at the I-end of the frame object.</td>
</tr>
</tbody>
</table>
Field: TI
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for torsional deformations at the I-end of the frame object.

Field: M2I
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for moment (rotational) deformations about the local 2-axis at the I-end of the frame object.

Field: M3I
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for moment (rotational) deformations about the local 3-axis at the I-end of the frame object.

Field: PJ
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

Partial fixity spring stiffness for axial deformations at the J-end of the frame object.

Field: V2J
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

Partial fixity spring stiffness for shear deformations in the local 2-axis direction at the J-end of the frame object.

Field: V3J
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

Partial fixity spring stiffness for shear deformations in the local 3-axis direction at the J-end of the frame object.
Field: TJ
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for torsional deformations at the I-end of the frame object.

Field: M2J
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for moment (rotational) deformations about the local 2-axis at the J-end of the frame object.

Field: M3J
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

Partial fixity spring stiffness for moment (rotational) deformations about the local 3-axis at the J-end of the frame object.

Table: Frame Section Assignments

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: SectionType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either I/Wide Flange, Channel, Tee, Angle, Double Angle, Box/Tube, Pipe, Rectangular, Circle, General, Auto Select List, or Nonprismatic indicating the type of frame section assigned to the object.

Field: AutoSelect
Field is Imported: Yes
Format: Controlled by program
Units: Text
If the frame section type is an auto select list then this column contains the name of the auto select section list assigned to the object. Otherwise it is N.A.

Field: **AnalSect**

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is the name of the analysis section assigned to the frame object. The analysis section is the frame section property that was used in the last analysis performed. If no analysis has been performed then it is the name of the frame section assigned to the object.

Field: **DesignSect**

Field is Imported: No
Format: Controlled by program
Units: Text

This is the name of the design section currently associated with the object. If no design has been run then this item is reported as N.A.

Field: **MatProp**

Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Default, or the name of a Material. Default means that the material property for the line object is taken from the material property designated for the frame section that is assigned to the line object.

**Table: Frame Section Properties 1 - General**

Field: **SectionName**

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the frame section, for example, W8X10 or FSEC1.

Field: **Material**

Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the material property assigned to the frame section.
Field: Shape

Field is Imported: Yes
Format: Controlled by program
Units: Text

The section shape type. It is one of the following:
- I/Wide Flange
- Channel
- Tee
- Angle
- Double Angle
- Box/Tube
- Pipe
- Rectangular
- Circle
- General
- Auto Select List
- Nonprosmatic

Field: t3

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Overall depth of the section measured perpendicular to the local 3-axis.
This dimension is the primary dimension affecting I33.

Field: t2

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Overall width of the section measured perpendicular to the local 2-axis.
This dimension is the primary dimension affecting I22.

Field: tf

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Flange thickness for the section. This applies to both the top and bottom flanges of all sections except I/Wide Flange sections for which it only applies to the top flange. The flanges are oriented parallel to the section local 3-axis.

Field: tw

Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Web thickness for the section. For double angles it is the web thickness of one of the angles. For double channels it is the web thickness of one of the channels. For pipes it is the wall thickness of the pipe. The webs are oriented parallel to the section local 2-axis.

**Field: t2b**

Field is Imported: Yes  
Format: Length (Section Dimensions section of form)  
Units: Length  
This item only applies to I/Wide Flange sections. It is the width of the bottom flange.

**Field: tfb**

Field is Imported: Yes  
Format: Length (Section Dimensions section of form)  
Units: Length  
This item only applies to I/Wide Flange sections. It is the thickness of the bottom flange.

**Field: dis**

Field is Imported: Yes  
Format: Length (Section Dimensions section of form)  
Units: Length  
This is the separation distance between double angles or double channels.

**Field: Area**

Field is Imported: Yes  
Format: Area (Section Dimensions section of form)  
Units: Length2  
Cross-section area of the section.

**Field: TorsConst**

Field is Imported: Yes  
Format: Length4 (Section Dimensions section of form)  
Units: Length4  
Torsional constant.

**Field: I33**

Field is Imported: Yes  
Format: Length4 (Section Dimensions section of form)  
Units: Length4
Moment of inertia for bending about the local 3 axis.

Field: I22
Field is Imported: Yes
Format: Length$^4$ (Section Dimensions section of form)
Units: Length$^4$

Moment of inertia for bending about the local d axis.

Field: AS2
Field is Imported: Yes
Format: Area (Section Dimensions section of form)
Units: Length$^2$

Shear area for shear in the local 2-axis direction.

Field: AS3
Field is Imported: Yes
Format: Area (Section Dimensions section of form)
Units: Length$^2$

Shear area for shear in the local 3-axis direction.

Field: S33
Field is Imported: Yes
Format: Length$^3$ (Section Dimensions section of form)
Units: Length$^3$

Section modulus for bending about the local 3 axis.

Field: S22
Field is Imported: Yes
Format: Length$^3$ (Section Dimensions section of form)
Units: Length$^3$

Section modulus for bending about the local 2 axis.

Field: Z33
Field is Imported: Yes
Format: Length$^3$ (Section Dimensions section of form)
Units: Length$^3$

Plastic modulus for bending about the local 3 axis.

Field: Z22
Field is Imported: Yes
Format: Length$^3$ (Section Dimensions section of form)
Units: Length$^3$
Plastic modulus for bending about the local 2 axis.

Field: R33
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

Radius of gyration about the local 3 axis.

Field: R22
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

Radius of gyration about the local 2 axis.

Field: ConcCol
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is either Yes, indicating that the frame section is a concrete column, or it is No. If it is Yes then additional information about the section is included in the Concrete Column Properties table.

Field: ConcBeam
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is either Yes, indicating that the frame section is a concrete beam, or it is No. If it is Yes then additional information about the section is included in the Concrete Beam Properties table.

Field: Color
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either a defined color or an integer representation of the color associated with the section.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.
Field: TotalWt
   Field is Imported: No
   Format: Weight (Mass and Weight section of form)
   Units: Force

   Total weight of all objects in the model that are assigned the specified
   frame section property.

Field: TotalMass
   Field is Imported: No
   Format: Mass (Mass and Weight section of form)
   Units: Force-Sec2/Length

   Total mass of all objects in the model that are assigned the specified
   frame section property.

Field: FromFile
   Field is Imported: Yes
   Format: Controlled by program
   Units: Yes/No

   This item is Yes if the section properties are obtained from a section
   property database file. Otherwise it is No.

Field: AMod
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Area modifier for the specified frame section property. This item is used
   for analysis only, not design. For nonprismatic sections this item is taken
   by the analysis as 1 regardless of what you input.

Field: A2Mod
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear area modifier for shear parallel to the local 2-axis for the specified
   frame section property. This item is used for analysis only, not design.
   For nonprismatic sections this item is taken by the analysis as 1
   regardless of what you input.

Field: A3Mod
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless
Shear area modifier for shear parallel to the local 3-axis for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: JMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Torsional constant modifier for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: I2Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Moment of inertia modifier for bending about the local 2-axis for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: I3Mod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Moment of inertia modifier for bending about the local 3-axis for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: MMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Mass multiplier for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: WMod
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Mass multiplier for the specified frame section property. This item is used for analysis only, not design. For nonprismatic sections this item is taken by the analysis as 1 regardless of what you input.

Field: SectInFile
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the section as it appears in the section property database file.

Field: FileName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name (full path) of the section property database file from which the section properties are to be obtained. This item only applies when theFromFile item is Yes.

### Table: Frame Section Properties 2 - Concrete Column

Field: SectionName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a frame section property assigned to a frame object.

Field: ReinfConfig
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Rectangular or Circular indicating the configuration of the column longitudinal reinforcing.

Field: LatReinf
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Ties or Spiral indicating the type of column lateral (shear) reinforcing.

Field: Cover
Field is Imported: Yes
The distance from the edge of the column to the center of the longitudinal reinforcement.

In the special case of circular reinforcement in a rectangular column, the cover is taken to be the minimum distance from the edge of the column to a circle drawn through the center of each rebar in the circular reinforcement pattern.

Field: NumBars3Dir
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This item applies to a rectangular reinforcing configuration. It is the number of longitudinal bars (including the corner bar) on each face of the column that is parallel to the local 3-axis of the column.

Field: NumBars2Dir
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This item applies to a rectangular reinforcing configuration. It is the number of longitudinal bars (including the corner bar) on each face of the column that is parallel to the local 2-axis of the column.

Field: NumBarsCirc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This item applies to a circular reinforcing configuration. It is the total number of longitudinal reinforcing bars in the column.

Field: BarSize
Field is Imported: Yes
Format: Controlled by program
Units: Text

The specified size of longitudinal reinforcing bars in the column.

Field: ReinfType
Field is Imported: Yes
Format: Controlled by program
Units: Text
This is either Check or Design indicating whether the column longitudinal reinforcing is to be designed or checked.

### Table: Frame Section Properties 3 - Concrete Beam

#### Field: SectionName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a frame section property assigned to a frame object.

#### Field: TopCover
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The distance from the top of the beam to the centroid of the top longitudinal reinforcement.

#### Field: BotCover
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The distance from the bottom of the beam to the centroid of the bottom longitudinal reinforcement.

#### Field: TopLeftArea
- Field is Imported: Yes
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length2

The total area of longitudinal reinforcement at the top left end of the beam.

#### Field: TopRghtArea
- Field is Imported: Yes
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length2

The total area of longitudinal reinforcement at the top right end of the beam.

#### Field: BotLeftArea
- Field is Imported: Yes
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length2
The total area of longitudinal reinforcement at the bottom left end of the beam.

Field: BotRghtArea
Field is Imported: Yes
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total area of longitudinal reinforcement at the bottom right end of the beam.

Table: Frame Section Properties 4 - Auto Select

Field: ListName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the auto select section list.

Field: SectionName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a frame section that is assigned to the auto select section list.

Table: Frame Section Properties 5 - Nonprismatic

Field: SectionName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of the frame section.

Field: NumSegments
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of segments that define the nonprismatic section.

Field: SegmentNum
Field is Imported: No
Format: Controlled by program
Units: Unitless

The segment number.

Field: StartSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the frame section property at the beginning of the specified segment.

Field: EndSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the frame section property at the end of the specified segment.

Field: LengthType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Absolute or Variable indicating the type of length specified. For import this item determines which of the two length fields, AbsLength or VarLength will be read.

Field: AbsLength
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute (fixed) length of the segment, if any.

Field: VarLength
Field is Imported: Yes
Format: Relative Distance (Structure Dimensions section of form)
Units: Unitless

The specified variable length of the segment, if any.

Field: EI33Var
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Linear, Parabolic or Cubic indicating the variation of E*I33 along the specified segment.
Field: El22Var
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Linear, Parabolic or Cubic indicating the variation of E*I22 along the specified segment.

Table: Frame Spring Assignments

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 1, 2, or 3 indicating one of the local axes directions for the frame object.

Field: Stiffness
Field is Imported: Yes
Format: Trans Stiffness/Length (Stiffness section of form)
Units: Force/Length/Length

The line spring stiffness assigned to the frame object in the specified direction.

Table: Frame Auto Subdivision Assignments

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: AutoDivide
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No
This item is Yes if the frame object is to be (internally) automatically subdivided by the program for analysis.

Field: AtJoints
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if automatic subdivision is to occur at intermediate joints along the frame object.

Field: AtFrames
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if automatic subdivision is to occur at intersections with other frame objects.

Field: NumSegments
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum number of segments that the frame is to be divided into. If this item is zero then it does not apply.

Field: MaxLength
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The maximum length of segments that the frame is to be divided into. If this item is zero then it does not apply.

Field: MaxDegrees
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The maximum number of degrees that segments of curved frame members are to be divided into. If this item is zero then it does not apply.

Table: Frame Tension And Compression Limits

Field: Frame
Field is Imported: Yes
Field: TensLimit
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if a tension limit exists for the frame object. Otherwise it is No. For import, the Tension item is only read if this item is Yes.

Field: CompLimit
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if a compression limit exists for the frame object. Otherwise it is No. For import, the Compression item is only read if this item is Yes.

Field: Tension
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The tension limit for the frame object.

Field: Compression
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The compression limit for the frame object.

Table: Function - Plot Functions

Field: PlotFunc
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a plot function.

Field: Type
Field is Imported: Yes
Format: Controlled by program
This is the type of plot function. It may be LoadFunc, Energy, BaseReac, Joint, Frame, AreaShell, AreaPlane, AreaASolid, Solid, Link or SectionCut.

**Field: ObjectLabel**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

For Joint, Frame, AreaShell, AreaPlane, AreaASolid, Solid and Link-type plot functions this is the label of the object for which the plot function is defined. For Section Cut plot functions it is the name of the section cut. The field is not filled for Load Function, Energy and BaseReac-type plot functions.

**Field: DistType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either RelDist or AbsDist. It indicates which of the distance fields (RelDist or AbsDist) will be read on import.

**Field: RelDist**
- Field is Imported: Yes
- Format: Relative Distance (Structure Dimensions section of form)
- Units: Unitless

The relative distance from the I-end of the frame object to the location where the frame forces are to be reported. If this location does not fall at an output station then the output forces are reported at the output station closest to the specified location. The relative distance is equal to the absolute distance divided by the length of the frame object.

**Field: AbsDist**
- Field is Imported: Yes
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The absolute distance from the I-end of the frame object to the location where the frame forces are to be reported. If this location does not fall at an output station then the output forces are reported at the output station closest to the specified location.

**Field: Joint**
- Field is Imported: Yes
- Format: Controlled by program
Units: Text

This item applies to AreaShell, AreaPlane, AreaASolid and Solid-type plot functions. It is the joint where the force or stress is reported.

Field: Component
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item depends on the type of plot function. The following values are possible for each plot function:

Load Function: Acc Dir 1, Acc Dir 2, Acc DirZ, or the name of any load case.

Energy: Input, Kinetic, Potential, Modal Damping, Link Damper, Link Hysteretic and Error.

Base: VX, VY, VZ, MX, MY, MZ

Joint: RelDispU1, RelDispU2, RelDispU3, RelDispR1, RelDispR2, RelDispR3, RelVelU1, RelVelU2, RelVelU3, RelVelR1, RelVelR2, RelVelR3, RelAccelU1, RelAccelU2, RelAccelU3, RelAccelR1, RelAccelR2, RelAccelR3, AbsDispU1, AbsDispU2, AbsDispU3, AbsDispR1, AbsDispR2, AbsDispR3, AbsVelU1, AbsVelU2, AbsVelU3, AbsVelR1, AbsVelR2, AbsVelR3, AbsAccelU1, AbsAccelU2, AbsAccelU3, AbsAccelR1, AbsAccelR2, AbsAccelR3, SpringF1, SpringF2, SpringF3, SpringM1, SpringM2, SpringM3, ReactionF1, ReactionF2, ReactionF3, ReactionM1, ReactionM2, ReactionM3.

Frame: P, V2, V3, T, M2, M3

AreaShell Resultants: F11, F22, F12, FMax, FMin, FVM, M11, M22, M12, MM1, MM2, MM3, MMax, MMin, V13, V23, VMax.

AreaShell Top Stresses: TopS11, TopS22, TopS12, TopSMax, TopSMin, TopSVM, TopS13, TopS23, TopSVMax.


AreaPlane: S11, S22, S33, S12, SMax, SMin, SVM.

AreaASolid: S11, S22, S33, S12, SMax, SMin, SVM.

Solid: S11, S22, S33, S12, S13, S23, SMax, SMid, SMin, SVM.
Table: Function - Response Spectrum - BOCA96

Field: Mode
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either All, indicating that all modes are considered in the output, or it is a single mode number, indicating that only the specified mode is considered in the output.

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the BOCA96 response spectrum function.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: No
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

Field: Aa
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 seismic coefficient representing the effective peak acceleration.
Field: Av
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 seismic coefficient representing the effective peak velocity-related acceleration.

Field: R
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 response modification factor.

Field: S
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The BOCA96 coefficient for the soil profile characteristics of the site.

Table: Function - Response Spectrum - EuroCode8

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the EuroCode8 response spectrum function.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: No
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.
Field: Ag
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The EuroCode8 design ground acceleration.

Field: SoilClass
Field is Imported: Yes
Format: Controlled by program
Units: Text

The EuroCode8 subsoil class. This is either A, B or C.

Field: DampFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The EuroCode8 damping correction factor.

Table: Function - Response Spectrum - From File

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the response spectrum function from file.

Field: Frequency
Field is Imported: No
Format: Frequency (Time-Related section of form)
Units: Cyc/sec

The response spectrum function frequency value.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrumcase.

Field: Accel
Field is Imported: No
The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

**Field: HeaderLines**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Number of header lines in the file that ETABS will ignore.

**Field: DataType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Freq vs Accel or Period vs Accel.

**Field: FileName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the text file containing the function.

### Table: Function - Response Spectrum - IBC2000

**Field: Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the IBC2000 response spectrum function.

**Field: Period**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec

The response spectrum function period value.

**Field: Accel**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum.

Field: SDS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 design earthquake spectral response at short periods.

Field: SD1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The IBC2000 design earthquake spectral response at a one second period.

Table: Function - Response Spectrum - NBCC95

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the NBCC95 response spectrum function.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: No
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum.

Field: V
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NBCC95 zonal velocity ratio.

Field: Za
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NBCC95 acceleration-related seismic zone.

Field: Zv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NBCC95 velocity-related seismic zone.

Table: Function - Response Spectrum - NEHRP97

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the NEHRP97 response spectrum function.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: No
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

Field: SDS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The NEHRP97 design earthquake spectral response at short periods.

Field: SD1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NEHRP97 design earthquake spectral response at a one second period.

Table: Function - Response Spectrum - NZS4203

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the NZS4203 response spectrum function.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: No
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

Field: ScaleFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The NZS4203 scaling factor. The ordinates of the response spectrum are calculated using 1992 NZS4203 Equations 4.6.3 and 4.6.4. If you are using Equation 4.6.3 then you input the scaling factor as $Sp \times R \times Z \times Ls$. If you are using Equation 4.6.4 then you input the scaling factor as $Sm \times Sp \times R \times Z \times Lu$.

Field: SoilCat
Field is Imported: Yes
The NZS4203 site subsoil category. This is either A, B or C.

**Table: Function - Response Spectrum - UBC94**

**Field: Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the UBC94 response spectrum function.

**Field: Period**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec

The response spectrum function period value.

**Field: Accel**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrumcase.

**Field: Z**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The UBC94 seismic zone.

**Field: SoilType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The UBC94 soil type. This is either 1, 2 or 3.
**Table: Function - Response Spectrum - UBC97**

**Field: Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the UBC97 response spectrum function.

**Field: Period**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec

The response spectrum function period value.

**Field: Accel**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

**Field: Ca**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The UBC97 seismic coefficient Ca.

**Field: Cv**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The UBC97 seismic coefficient Cv.

**Table: Function - Response Spectrum - User**

**Field: Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the user-defined response spectrum function.
Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The response spectrum function period value.

Field: Accel
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The response spectrum function acceleration value. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the response spectrum case.

Table: Function - Time History - Cosine

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Cosine time history function.

Field: Time
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

Time value for a step in the time history function.

Field: Value
Field is Imported: No
Format: Controlled by program
Units: Unitless

The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The period of the Cosine function, that is, the time in seconds that it takes for the function to complete one cycle.
Field: StepsPerCyc
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The number of function value points provided for each cycle of the function.

Field: NumCycles
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The number of cycles in the function.

Field: Amplitude
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The maximum function value in the function.

Table: Function - Time History - From File

Field: Name
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   Name of the time history function from file.

Field: Time
   Field is Imported: No
   Format: Other Time (Seconds) (Time-Related section of form)
   Units: Sec

   Time value for a step in the time history function.

Field: Value
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The time history function value at the specified time. Note that this item
   is unitless. The acceleration units are in the scale factor that you specify
   for the function when you define the time history case.
Field: HeaderLines  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The number of lines ETABS will ignore at the beginning of the file.

Field: PrefixChars  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The number of characters ETABS will ignore at the beginning of each line in the file.

Field: PtsPerLine  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

How many function values, or sets of time and function values, depending on the DataType, are specified on each line of the file.

Field: DataType  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

This is either Equal Interval or Time and Value. Equal Interval means that the file contains function values that are spaced at an equal time value that is specified in the Interval column. Time and Value means that the file contains sets of time and function values.

Field: FormatType  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

This is either Free of Fixed indicating the format type for the data in the file.

Field: FixedLength  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

This is the number of characters per item that applies if the format type is Fixed.
Field: **Interval**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

An equal time interval between function values. This item applies when DataType is Equal Interval.

Field: **FileName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the text file containing the function.

**Table: Function - Time History - Ramp**

Field: **Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the Ramp time history function.

Field: **Time**
- Field is Imported: No
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Time value for a step in the time history function.

Field: **Value**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

Field: **RampTime**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The time it takes for the ramp function to initially reach its maximum value.
Field: Amplitude
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum function value in the function.

Field: MaxTime
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

The time at the end of the ramp function.

Table: Function - Time History - Sawtooth

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Sawtooth time history function.

Field: Time
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

Time value for a step in the time history function.

Field: Value
Field is Imported: No
Format: Controlled by program
Units: Unitless

The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The period of the Sawtooth function, that is, the time in seconds that it takes for the function to complete one cycle.
Field: RampTime
   Field is Imported: Yes
   Format: Other Time (Seconds) (Time-Related section of form)
   Units: Sec

   The time it takes for the Sawtooth function to ramp up from a function value of zero to its maximum amplitude.

Field: NumCycles
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The number of cycles in the function.

Field: Amplitude
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The maximum function value in the function.

Table: Function - Time History - Sine

Field: Name
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   Name of the Sine time history function.

Field: Time
   Field is Imported: No
   Format: Other Time (Seconds) (Time-Related section of form)
   Units: Sec

   Time value for a step in the time history function.

Field: Value
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.
Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The period of the Sine function, that is, the time in seconds that it takes for the function to complete one cycle.

Field: StepsPerCyc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of function value points provided for each cycle of the function.

Field: NumCycles
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of cycles in the function.

Field: Amplitude
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum function value in the function.

Table: Function - Time History - Triangular

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the Triangular time history function.

Field: Time
Field is Imported: No
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

Time value for a step in the time history function.

Field: Value
Field is Imported: No
The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

Field: Period
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The period of the Triangular function, that is, the time in seconds that it takes for the function to complete one cycle.

Field: NumCycles
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of cycles in the function.

Field: Amplitude
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum function value in the function.

Table: Function - Time History - User

Field: Name
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the user-defined time history function.

Field: Time
Field is Imported: Yes
Format: Other Time (Seconds) (Time-Related section of form)
Units: Sec

Time value for a step in the time history function.

Field: Value
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

**Table: Function - Time History - User Periodic**

**Field: Name**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the user-defined periodic time history function.

**Field: Time**
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

Time value for a step in the time history function.

**Field: Value**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The time history function value at the specified time. Note that this item is unitless. The acceleration units are in the scale factor that you specify for the function when you define the time history case.

**Field: NumCycles**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of cycles in the function.

**Table: General Grids**

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of the coordinate system with which the general grid system is associated.
Field: GridID

Field is Imported: Yes
Format: Controlled by program
Units: Text

The label for the grid line.

Field: LineType

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Straight or Arc indicating the line type. If it is Straight then the X1, Y1, X2 and Y2 items are specified to define the line. If it is Arc then the X1, Y1, X2, Y2, XC and YC items are specified to define the arc.

Field: X1

Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The X coordinate of end point 1 on the grid line in the specified coordinate system. Note that the default bubble location is at the endpoint 2 end of the grid line.

Field: Y1

Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The Y coordinate of end point 1 on the grid line in the specified coordinate system. Note that the default bubble location is at the endpoint 2 end of the grid line.

Field: X2

Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The X coordinate of end point 2 on the grid line in the specified coordinate system. Note that the default bubble location is at the endpoint 2 end of the grid line.

Field: Y2

Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length
The Y coordinate of end point 2 on the grid line in the specified coordinate system. Note that the default bubble location is at the endpoint 2 end of the grid line.

Field: XC
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

This item only applies to arcs. It is the X coordinate of a third point on the arc in the specified coordinate system.

Field: YC
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

This item only applies to arcs. It is the Y coordinate of a third point on the arc in the specified coordinate system.

Field: PrimaryGrid
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This is either Yes indicating that the grid line is a primary grid line or it is No indicating that it is a secondary grid line. Secondary grid lines do not display bubbles or grid ID text.

Field: LineColor
Field is Imported: Yes
Format: Controlled by program
Units: Text

The color of the grid line.

Field: ColorByUser
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This is either Yes indicating that the grid line color was specified by the user, or it is No indicating that grid line color was set by the program.

Field: BubbleSize
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length
The diameter of the grid line bubble.

**Field: SwitchBub**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This is either Yes indicating that the grid line bubble is to be switched from the default 2-end of the grid line to the 1-end, or it is No indicating that the bubble is to be at the 2-End.

**Field: Visible**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This is either Yes indicating that the grid line is visible or it is No indicating that it is not visible.

---

**Table: Generalized Displacement Definitions 1 - Translational**

**Field: GenDispl**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the generalized displacement.

**Field: Joint**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a joint included in the generalized displacement.

**Field: U1SF**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor that multiplies the translation of the U1 degree of freedom of the joint.

**Field: U2SF**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The scale factor that multiplies the translation of the U2 degree of freedom of the joint.

Field: U3SF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The scale factor that multiplies the translation of the U3 degree of freedom of the joint.

Field: R1SF
Field is Imported: Yes
Format: Gen Displ L/Rad (Displacements section of form)
Units: Length/rad

The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

Field: R2SF
Field is Imported: Yes
Format: Gen Displ L/Rad (Displacements section of form)
Units: Length/rad

The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

Field: R3SF
Field is Imported: Yes
Format: Gen Displ L/Rad (Displacements section of form)
Units: Length/rad

The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

Table: Generalized Displacement Definitions 2 - Rotational

Field: GenDispl
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the generalized displacement.

Field: Joint
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a joint included in the generalized displacement.

Field: **U1SF**
- Field is Imported: Yes
- Format: Gen Displ Rad/L (Displacements section of form)
- Units: Rad/Length

The scale factor that multiplies the translation of the U1 degree of freedom of the joint.

Field: **U2SF**
- Field is Imported: Yes
- Format: Gen Displ Rad/L (Displacements section of form)
- Units: Rad/Length

The scale factor that multiplies the translation of the U2 degree of freedom of the joint.

Field: **U3SF**
- Field is Imported: Yes
- Format: Gen Displ Rad/L (Displacements section of form)
- Units: Rad/Length

The scale factor that multiplies the translation of the U3 degree of freedom of the joint.

Field: **R1SF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

Field: **R2SF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

Field: **R3SF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The scale factor that multiplies the rotation of the R1 degree of freedom of the joint.

**Table: Grid Lines**

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the coordinate system for which the grid lines are defined.

**Field: AxisDir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either X, R, Y, T or Z indicating the axis direction used to locate the grid line. X and Y only apply to Cartesian coordinate systems. R and T only apply to Cylindrical coordinate systems. Z applies to both Cartesian and Cylindrical coordinate systems.

**Field: XRYZCoord**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Location of the grid line along the axis specified by the AxisDir item when the AxisDir item is X, R, Y or Z.

**Field: TAngle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

Location (angle) of the grid line when the AxisDir item is T.

**Field: Visible**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the grid line is visible. Otherwise it is No.
Table: Groups 1 - Definitions

Field: GroupName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a group.

Field: Selection
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the group is specified to be used for selection. Otherwise it is No.

Field: SectionCut
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the group is specified to be used for defining section cuts. Otherwise it is No.

Field: Steel
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the group is specified to be used for defining steel frame design groups. Otherwise it is No.

Field: Concrete
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the group is specified to be used for defining concrete frame design groups. Otherwise it is No.

Field: Aluminum
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the group is specified to be used for defining aluminum design groups. Otherwise it is No.
Field: **ColdFormed**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for defining cold formed design groups. Otherwise it is No.

Field: **Stage**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for defining stages for nonlinear static analysis. Otherwise it is No.

Field: **Bridge**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for reporting bridge response output. Otherwise it is No.

Field: **AutoSeismic**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for reporting auto seismic loads. Otherwise it is No.

Field: **AutoWind**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for reporting auto wind loads. Otherwise it is No.

Field: **MassWeight**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the group is specified to be used for reporting group masses and weight. Otherwise it is No.
Table: Groups 2 - Assignments

Field: GroupName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a group.

Field: ObjectType
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The type of object specified, e.g., joint, frame, area, solid or link.

Field: ObjectLabel
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of an object that is part of the specified group.

Table: Groups 3 - Masses and Weights

Field: GroupName
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a group.

Field: SelfMass
- Field is Imported: Yes
- Format: Mass (Mass and Weight section of form)
- Units: Force-Sec2/Length

The cumulative self mass of all objects in the group.

Field: SelfWeight
- Field is Imported: Yes
- Format: Weight (Mass and Weight section of form)
- Units: Force

The cumulative self weight of all objects in the group.
Field: **TotalMassX**
- Field is Imported: Yes
- Format: Mass (Mass and Weight section of form)
- Units: Force-Sec^2/Length

The cumulative total X-direction mass of all objects in the group.

Field: **TotalMassY**
- Field is Imported: Yes
- Format: Mass (Mass and Weight section of form)
- Units: Force-Sec^2/Length

The cumulative total Y-direction mass of all objects in the group.

Field: **TotalMassZ**
- Field is Imported: Yes
- Format: Mass (Mass and Weight section of form)
- Units: Force-Sec^2/Length

The cumulative total Z-direction mass of all objects in the group.

**Table: Hinge Props 1 - Overview**

Field: **HingeName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a frame object nonlinear hinge.

Field: **Type**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: **NumDOFs**
- Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of active degrees of freedom in the frame nonlinear hinge.

Field: P
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the P degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property.

Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: V2
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the V2 degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property.

Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: V3
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the V3 degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property.
Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: T
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the T degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property.
Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: M2
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the M2 degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property.
Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: M3
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the M3 degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.
No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property. Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Field: PMM
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either No, Yes or Yes, default. It indicates if the PMM degree of freedom is active in the hinge and, if so, whether or not it is based on default hinge properties.

No means the degree of freedom is not active. Yes means the degree of freedom is active, and it is not defined using a default hinge property. Yes, default means the degree of freedom is active, and it is defined using a default hinge property.

For import, note that if the PMM degree of freedom is Yes (or Yes, default) then the P, M2 and M3 degrees of freedom must all be No.

Table: Hinge Props 2 - General

Field: HingeName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a frame object nonlinear hinge.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.
Field: **DOF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either P, V2, V3, T, M2, M3 and PMM indicating the degree of freedom considered.

Field: **RigidPlast**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

If the force-deformation behavior of the hinge is rigid-plastic then this item is Yes. Otherwise it is No. Currently all hinges are rigid-plastic, i.e., this item is always Yes.

Field: **Symmetric**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is either Yes, indicating that the hinge is symmetric, or it is No. Symmetric means that the negative force deformation behavior is the same as the positive force deformation behavior.

Field: **FDType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Force-Displ, Moment-Rot or Stress-Strain indicating the type of force-deformation specified.

For import this item only applies to P, V2 and V3 degrees of freedom. It is either Force-Displ or Stress-Strain.

Field: **UseYldForce**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is either Yes or No. Yes means that the specified forces or moments used to define the hinge force deformation curve are to be scaled using the program calculated yield force of the frame section to which the hinge is assigned.

Field: **UseYldDispl**
- Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No. Yes means that the specified displacements or rotations used to define the hinge force deformation curve are to be scaled using the program calculated (approximate) yield displacement or rotation of the frame section to which the hinge is assigned.

Field: FDPosForSF
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The scale factor use to scale positive forces when the force-deformation type is Force-Displ.

Field: FDPosDisSF
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The scale factor use to scale positive displacements when the force-deformation type is Force-Displ.

Field: FDNegForSF
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The scale factor use to scale negative forces when the force-deformation type is Force-Displ.

Field: FDNegDisSF
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

The scale factor use to scale negative displacements when the force-deformation type is Force-Displ.

Field: MRPosMoSF
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

The scale factor use to scale positive moments when the force-deformation type is Moment-Rot.
Field: **MRPosRoSF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor use to scale positive rotations when the force-deformation type is Moment-Rot.

Field: **MRNegMoSF**
- Field is Imported: Yes
- Format: Moment (Forces section of form)
- Units: Force-Length

The scale factor use to scale negative moments when the force-deformation type is Moment-Rot.

Field: **MRNegRoSF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor use to scale negative rotations when the force-deformation type is Moment-Rot.

Field: **SSPosStrsSF**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The scale factor use to scale positive stresses when the force-deformation type is Stress-Strain.

Field: **SSPosStnSF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The scale factor use to scale positive strains when the force-deformation type is Stress-Strain.

Field: **SSNegStrsSF**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The scale factor use to scale negative stresses when the force-deformation type is Stress-Strain.
Field: SSNegStnSF
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The scale factor used to scale negative strains when the force-deformation type is Stress-Strain.

Field: LengthType
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   This item only applies when the force-deformation type is Stress-Strain. It indicates whether on import the Absolute length field (SSAbsLen) or the Relative length field (SSRelLen) field will be read.

Field: SSAbsLen
   Field is Imported: Yes
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

   The absolute length of a hinge whose force-deformation type is Stress-Strain.

Field: SSRelLen
   Field is Imported: Yes
   Format: Relative Distance (Structure Dimensions section of form)
   Units: Unitless

   The relative length of a hinge whose force-deformation type is Stress-Strain. The relative distance is equal to the absolute distance divided by the beam length.

Table: Hinge Props 3 - Force-Deformation Data

Field: HingeName
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   The name of a frame object nonlinear hinge.

Field: Type
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either P, V2, V3, T, M2, M3 and PMM indicating the degree of freedom considered.

Field: FDPoint
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either -E, -D, -C, -B, A, B, C, D or E indicating a point on the specified hinge force de-formation curve. The Force and Displ items listed in the next two columns (fields) apply to this point. Note that FD is short for Force-Displacement.

Field: Force
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The force, moment or stress used to define the specified point (see FDPoint column) on the hinge force deformation curve. Note that the units for this item are provided by its associated scale factor in the Hinge Force Deformation Information table.

Field: Displ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The displacement, rotation or strain used to define the specified point (see FDPoint column) on the hinge force deformation curve. Note that the units for this item are provided by its associated scale factor in the Hinge Force Deformation Information table.
**Table: Hinge Props 4 - Acceptance Criteria**

Field: HingeName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a frame object nonlinear hinge.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either P, V2, V3, T, M2, M3 and PMM indicating the degree of freedom considered.

Field: ACPoint
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either IO, LS or CP indicating a particular acceptance criteria. The ACPos and ACNeg items listed in the next two columns (fields) apply to this point. Note that the AC is short for Acceptance Criteria.

IO is short for immediate occupancy, LS is short for life safety and CP is short for collapse prevention.

Field: ACPos
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The acceptable positive deformation for the specified acceptance criteria. Note that the units for this item are provided by its associated scale factor in the Hinge Force Deformation Information table.

Field: ACNeg
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The acceptable negative deformation for the specified acceptance criteria. Note that the units for this item are provided by its associated scale factor in the Hinge Force Deformation Information table.

Table: Hinge Props 5 - PMM Surface - General

Field: HingeName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a frame object nonlinear hinge.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: PCurve
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Elastic-Plastic or it is Proportional. It refers to the axial force-deformation characteristics of the hinge. When specified as
Proportional it means it is proportional to the specified moment rotation curve.

Field: **IntType**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User, Steel: AISC-LRFD, Steel: FEMA-273 or Conc: ACI 318-99.

AISC-LRFD interaction surfaces are calculated using AISC LRFD93 Specification Equations H1-1a and H1-1b with phi equal to one.

FEMA-273 interaction surfaces are calculated using FEMA-273 (October 1997) Equation 5-4.

ACI 318-99 interaction surfaces are constructed with phi equal to one.

Field: **ExpectedFy**
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress used in calculating AISC-LRFD and FEMA-273 interaction surfaces.

Field: **DoublySym**
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is either Yes or No. It indicates whether or not a user-defined interaction surface it is doubly symmetric.

Field: **NumCurves**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of separate P-M curves used to define a user-defined interaction surface.

Field: **NumPoints**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The number of points on each P-M curve in a user-defined interaction surface.

Field: IntPScale
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The scale factor for the P values in a user-defined interaction surface.

Field: IntMScale
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

The scale factor for the various M values in a user-defined interaction surface.

Table: Hinge Props 6 - PMM Surface - Data

Field: HingeName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a frame object nonlinear hinge.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: PtNum
Field is Imported: Yes
Format: Controlled by program
Units: Text
The point number on the P-M curve.

Field: P
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The axial force at the specified PointNum on each P-M curve.

Table: Hinge Props 7 - PMM Surface - Curve Angles

Field: HingeName
Field is Imported: No
Format: Controlled by program
Units: Text

The name of a frame object nonlinear hinge.

Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either User or it is something like 'Gen (FH1) B1.' The second item indicates a generated hinge.

For the generated hinge the 'Gen' item is short for generated. The item in parenthesis, FH1 in this example, is the name of the default or user-defined hinge property from which the generated hinge properties were derived. The last item, B1 in this case, is the name of the frame object to which the hinge is assigned.

Only user defined hinge properties are imported.

Field: CurveNum
Field is Imported: No
Format: Controlled by program
Units: Unitless

The P-M curve number.

Field: Angle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle associated with the specified curve number. An angle of 0 degrees means that the specified moment is about the positive local 2-
axis of the section. An angle of 90 degrees means that the specified moment is about the positive local 3-axis of the section.

Table: Joint Added Mass Assignments

Field: Joint
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a joint.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Joint Local or Global indicating the coordinate system in which the joint masses are defined.

In general we recommend defining joint masses in the joint local coordinate system. All analyses are performed using the local coordinate system. When masses that are defined in the global coordinate system are converted to the joint local coordinate system for analysis, all off-diagonal mass values in the joint local system (if any) are ignored. In other words, any mass coupling that may occur as a result of the coordinate transformation is ignored.

Field: Mass1
Field is Imported: Yes
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Translational mass assigned to the specified joint in the local 1 (or global X) direction.

Field: Mass2
Field is Imported: Yes
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Translational mass assigned to the specified joint in the local 2 (or global Y) direction.

Field: Mass3
Field is Imported: Yes
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length
Translational mass assigned to the specified joint in the local 3 (or global Z) direction.

Field: MMI1  
Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²  

Rotational mass moment of inertia assigned to the specified joint about the local 1 (global X) axis.

Field: MMI2  
Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²  

Rotational mass moment of inertia assigned to the specified joint about the local 2 (global Y) axis.

Field: MMI3  
Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²  

Rotational mass moment of inertia assigned to the specified joint about the local 3 (global Z) axis.

Table: Joint Constraint Assignments

Field: Joint  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Label of a joint that is assigned the specified constraint.

Field: Constraint  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Label of a constraint.

Field: Type  
Field is Imported: No  
Format: Controlled by program  
Units: Text
This is either Body, Diaphragm, Plate, Rod, Beam, Equal, Local, Weld or indicating the type of constraint.

**Table: Joint Coordinates**

**Field: Joint**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a joint.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The coordinate system in which the specified joint was last defined (edited).

**Field: CoordType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Cartesian or Cylindrical indicating how the items in the X or R, Y, T, and Z fields are to be interpreted. See the documentation of those fields for more information.

**Field: XorR**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

If the CoordType item is Cartesian then this is the X coordinate of the specified joint in the coordinate system specified by the CoordSys item.

If the CoordType item is Cylindrical then this is the R coordinate of the specified joint in the coordinate system specified by the CoordSys item.

**Field: Y**
- Field is Imported: Yes
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length
The Y coordinate of the specified joint in the coordinate system specified by the CoordSys item. This item only applies if the CoordType item is Cartesian.

Field: T
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The T coordinate of the specified joint in the coordinate system specified by the CoordSys item. This item only applies if the CoordType item is Cylindrical.

Field: Z
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The Z coordinate of the specified joint in the coordinate system specified by the CoordSys item.

Field: SpecialJt
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

The item is Yes if the specified joint is designated as a Special Joint. Otherwise it is No.

The significance of a Special joint is that it is not automatically deleted by the graphic interface if (or when) no objects are connected to it. If a joint is not designated as a special joint, then the graphic interface will always delete it if it is not connected to an object.

If a point is created in the graphic interface using either the Draw menu > Add Special Joint command, or its associated toolbar button, then that point is designated as a Special Joint. If a point is automatically created in the graphic interface as a result of drawing another object, then that joint is not designated as a Special Joint.

Field: GlobalX
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global X coordinate of the specified joint.

Field: GlobalY
Field is Imported: No
Field: GlobalZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Z coordinate of the specified joint.

Table: Joint Loads - Force

Field: Joint
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a joint.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the load case is defined.

Field: F1
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Force applied to the joint in the local 1 direction.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

Field: F2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Force applied to the joint in the local 2 direction.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

Field: F3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Force applied to the joint in the local 3 direction.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

Field: M1
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Moment about the local 1-axis applied to the joint.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

Field: M2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Moment about the local 2-axis applied to the joint.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

Field: M3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Moment about the local 3-axis applied to the joint.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.
### Table: Joint Loads - Ground Displacement

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint</td>
<td>Label of a joint.</td>
</tr>
<tr>
<td>LoadCase</td>
<td>Label of the load case to which the specified load applies.</td>
</tr>
<tr>
<td>CoordSys</td>
<td>Label of the coordinate system in which the load case is defined.</td>
</tr>
<tr>
<td>U1</td>
<td>Translational ground displacement applied to the joint in the local 1 direction. Note that the joint must be restrained (or have a spring) in the local 1 direction for this load to be active. If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.</td>
</tr>
<tr>
<td>U2</td>
<td>Translational ground displacement applied to the joint in the local 2 direction. Note that the joint must be restrained (or have a spring) in the local 2 direction for this load to be active. If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.</td>
</tr>
<tr>
<td>U3</td>
<td>Field is Imported: Yes</td>
</tr>
</tbody>
</table>
Format: Translational Displ (Displacements section of form)  
Units: Length

Translational ground displacement applied to the joint in the local 3 direction. Note that the joint must be restrained (or have a spring) in the local 3 direction for this load to be active.

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R1</strong></td>
<td>Rotational ground displacement applied to the joint about the local 1-axis. Note that the joint must be restrained (or have a spring) about the local 1-axis for this load to be active.</td>
</tr>
<tr>
<td>Field is Imported: Yes</td>
<td></td>
</tr>
<tr>
<td>Format: Rotational Displ (Displacements section of form)</td>
<td></td>
</tr>
<tr>
<td>Units: Radians</td>
<td></td>
</tr>
</tbody>
</table>

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R2</strong></td>
<td>Rotational ground displacement applied to the joint about the local 2-axis. Note that the joint must be restrained (or have a spring) about the local 2-axis for this load to be active.</td>
</tr>
<tr>
<td>Field is Imported: Yes</td>
<td></td>
</tr>
<tr>
<td>Format: Rotational Displ (Displacements section of form)</td>
<td></td>
</tr>
<tr>
<td>Units: Radians</td>
<td></td>
</tr>
</tbody>
</table>

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R3</strong></td>
<td>Rotational ground displacement applied to the joint about the local 3-axis. Note that the joint must be restrained (or have a spring) about the local 3-axis for this load to be active.</td>
</tr>
<tr>
<td>Field is Imported: Yes</td>
<td></td>
</tr>
<tr>
<td>Format: Rotational Displ (Displacements section of form)</td>
<td></td>
</tr>
<tr>
<td>Units: Radians</td>
<td></td>
</tr>
</tbody>
</table>

If the associated coordinate system is the global coordinate system then axes 1, 2 and 3 correspond to global axes X, Y and Z, respectively.
### Table: Joint Local Axes Assignments 1 - Typical

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint</td>
<td>Name of the joint.</td>
</tr>
<tr>
<td>AngleA</td>
<td>AngleA, AngleB and AngleC define the rotation of the joint local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the joint local coordinate system with respect to the global axes. The orientation of the joint local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.</td>
</tr>
<tr>
<td>AngleB</td>
<td>AngleA, AngleB and AngleC define the rotation of the joint local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the joint local coordinate system with respect to the global axes. The orientation of the joint local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.</td>
</tr>
<tr>
<td>AngleC</td>
<td>AngleA, AngleB and AngleC define the rotation of the joint local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the joint local coordinate system with respect to the global axes. The orientation of the joint local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.</td>
</tr>
</tbody>
</table>
AngleA, AngleB and AngleC define the rotation of the joint local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the joint local coordinate system with respect to the global axes.

The orientation of the joint local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.

**Field: AdvanceAxes**
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is Yes if an advanced method is used to define the local axes reference vectors for the joint. Otherwise it is No meaning that the default reference vectors are used.

In the default system the joint positive local 1, 2 and 3 axes are parallel to the global positive X, Y and Z axes, respectively.

In the advanced system the joint local axes are defined with respect to user-defined reference vectors. Note that when the advanced system is used, the specified Angle is applied to the local axes orientation defined by the user specified reference vectors.

**Table: Joint Local Axes Assignments 2 - Advanced**

**Field: Joint**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the joint.

**Field: LocalPlane**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item indicates the local plane that is to be determined by the plane reference vector. It is either 12, 13, 21, 23, 31, or 32.
Field: AxOption1
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the axial reference vector.

Field: AxCoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

The coordinate system used to define the axial reference vector coordinate direction and the axial user vector.

Field: AxCoordDir
Field is Imported: Yes
Format: Controlled by program
Units: Text

Axial coordinate direction taken at the joint in the specified coordinate system and used to define the axis reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: AxVecJt1
Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the current joint. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: AxVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the current joint. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: PIOption1
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the plane reference vector.

Field: PlCoordSys
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The coordinate system used to define the plane reference vector coordinate directions and the plane user vector.

Field: CoordDir1
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The primary coordinate direction taken at the joint in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: CoordDir2
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The secondary coordinate direction taken at the joint in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PlVecJt1
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the current joint. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecJt2
Field is Imported: Yes  
Format: Controlled by program  
Units: Text
.PIVecJt1 and PIVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the current joint. If both PIVecJt1 and PIVecJt2 are specified as 0 then they are not used to define the plane reference vector.

<table>
<thead>
<tr>
<th>Field</th>
<th>Field is Imported</th>
<th>Format</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AxVecX</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The X direction component of the axis reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AxVecY</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Y direction component of the axis reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AxVecZ</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Z direction component of the axis reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIVecX</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIVecY</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIVecZ</td>
<td>Yes</td>
<td>Controlled by program</td>
<td>Unitless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

**Table: Joint Panel Zone Assignments**

- **Field: Joint**
  - Field is Imported: Yes
  - Format: Controlled by program
  - Units: Text

  Label of a joint.

- **Field: PZFrom**
  - Field is Imported: Yes
  - Format: Controlled by program
  - Units: Text

  This is either Elastic, User or Link. It identifies how the panel zone properties are defined. In the Assign Panel Zone form that appears when you select a point and click the Assign menu > Joint/Point > Panel Zone command there are four options for the panel zone properties. They are:
    - Elastic properties from column,
    - Elastic properties from column and doubler plate,
    - Specified spring properties, and
    - Specified link property.

  The PZFrom item is specified as Elastic for each of the first two options above. The DoublerPl item in the output table tells you if a doubler plate is considered in the properties. If a nonzero doubler plate thickness is reported then the doubler plate is considered when computing the panel zone properties.

  The PZFrom item is specified as User when there are specified spring properties. These spring properties are reported in the MajorStiff and MinorStiff items in the output table.

  The PZFrom item is specified as Link when there is a specified link property. The link object name is reported in the PZLink item in the output table.

- **Field: DoublerPl**
  - Field is Imported: Yes
  - Format: Length (Section Dimensions section of form)
  - Units: Length

  Thickness of the doubler plate.
Field: **MajorStiff**

- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

Specified panel zone rotational spring stiffness for major axis bending (about the local 3-axis of the column and panel zone).

Field: **MinorStiff**

- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

Specified panel zone rotational spring stiffness for minor axis bending (about the local 2-axis of the column and panel zone).

Field: **PZLink**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a link object specified to define the panel zone properties.

Field: **PZConnect**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either 'Beams to Other Objects' or 'Braces to Other Objects' indicating how the panel zone connects the elements at the specified joint.

Field: **AxesFrom**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Column or User indicating how the local axes of the panel zone are defined. If the axes are user-defined then the PZAxesAngle item defines the orientation of the panel zone local axes.

Field: **PZAxesAngle**

- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

This item only applies if the AxesFrom item is 'User defined.' It is the angle measured counter-clockwise from the positive global X-axis to the local 2-axis of the panel zone.
**Table: Joint Pattern Assignments**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint</td>
<td>Label of a joint.</td>
</tr>
<tr>
<td>Pattern</td>
<td>Name of the specified joint pattern.</td>
</tr>
<tr>
<td>Value</td>
<td>Joint pattern value at the specified joint.</td>
</tr>
</tbody>
</table>

**Table: Joint Pattern Definitions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>Name of the specified joint pattern.</td>
</tr>
</tbody>
</table>

**Table: Joint Restraint Assignments**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint</td>
<td>Label of a joint.</td>
</tr>
<tr>
<td>U1</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>
This item is Yes if the U1 degree of freedom is restrained at the specified joint. Otherwise it is No.

Field: U2
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the U2 degree of freedom is restrained at the specified joint. Otherwise it is No.

Field: U3
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the U3 degree of freedom is restrained at the specified joint. Otherwise it is No.

Field: R1
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the R1 degree of freedom is restrained at the specified joint. Otherwise it is No.

Field: R2
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the R2 degree of freedom is restrained at the specified joint. Otherwise it is No.

Field: R3
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the R3 degree of freedom is restrained at the specified joint. Otherwise it is No.

Table: Joint Spring Assignments 1 - Uncoupled

Field: Joint
Field is Imported: Yes
Format: Controlled by program
Units: Text
Label of a joint.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text
Label of the coordinate system in which the joint springs are defined.

Field: U1
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length
The spring stiffness in the U1 (UX) direction for the specified coordinate system at the indicated joint.

Field: U2
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length
The spring stiffness in the U2 (UY) direction for the specified coordinate system at the indicated joint.

Field: U3
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length
The spring stiffness in the U3 (UZ) direction for the specified coordinate system at the indicated joint.

Field: R1
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad
The spring stiffness in the R1 (RX) direction for the specified coordinate system at the indicated joint.

Field: R2
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad
The spring stiffness in the R2 (RY) direction for the specified coordinate system at the indicated joint.

Field: R3
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The spring stiffness in the R3 (RZ) direction for the specified coordinate system at the indicated joint.

Table: Joint Spring Assignments 2 - Coupled

Field: Joint
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a joint.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the coordinate system in which the joint springs are defined.

Field: U1
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The spring stiffness in the U1 (UX) direction for the specified coordinate system at the indicated joint.

Field: U1U2
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The spring stiffness in the U1U2 (UXUY) direction for the specified coordinate system at the indicated joint.

Field: U2
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length
The spring stiffness in the U2 (UY) direction for the specified coordinate system at the indicated joint.

Field: U1U3
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The spring stiffness in the U1U3 (UXUZ) direction for the specified coordinate system at the indicated joint.

Field: U2U3
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The spring stiffness in the U2U3 (UYUZ) direction for the specified coordinate system at the indicated joint.

Field: U3
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The spring stiffness in the U3 (UZ) direction for the specified coordinate system at the indicated joint.

Field: U1R1
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U1R1 (UXRX) direction for the specified coordinate system at the indicated joint.

Field: U2R1
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U2R1 (UYRX) direction for the specified coordinate system at the indicated joint.

Field: U3R1
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad
The spring stiffness in the U3R1 (UZRX) direction for the specified coordinate system at the indicated joint.

Field: R1
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The spring stiffness in the R1 (RX) direction for the specified coordinate system at the indicated joint.

Field: U1R2
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U1R2 (UXRY) direction for the specified coordinate system at the indicated joint.

Field: U2R2
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U2R2 (UYRY) direction for the specified coordinate system at the indicated joint.

Field: U3R2
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U3R2 (UZRY) direction for the specified coordinate system at the indicated joint.

Field: R1R2
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The spring stiffness in the R1R2 (RXRY) direction for the specified coordinate system at the indicated joint.

Field: R2
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad
The spring stiffness in the R2 (RY) direction for the specified coordinate system at the indicated joint.

Field: U1R3
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U1R3 (UXRZ) direction for the specified coordinate system at the indicated joint.

Field: U2R3
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U2R3 (UZRZ) direction for the specified coordinate system at the indicated joint.

Field: U3R3
Field is Imported: Yes
Format: TransRot Coupled Stiff (Stiffness section of form)
Units: Force/rad

The spring stiffness in the U3R3 (UZRZ) direction for the specified coordinate system at the indicated joint.

Field: R1R3
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The spring stiffness in the R1R3 (RXRZ) direction for the specified coordinate system at the indicated joint.

Field: R2R3
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The spring stiffness in the R2R3 (RYRZ) direction for the specified coordinate system at the indicated joint.

Field: R3
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad
The spring stiffness in the R3 (RZ) direction for the specified coordinate system at the indicated joint.

**Table: Link Loads - Gravity**

**Field:** Link
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Link object.

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

**Field: CoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the coordinate system in which the gravity loads are defined.

**Field: MultiplierX**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The applied gravity load in the X-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierX scale factor.

**Field: MultiplierY**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The applied gravity load in the Y-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierY scale factor.

**Field: MultiplierZ**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless
The applied gravity load in the Z-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierZ scale factor.

**Table: Link Local Axes Assignments 1 - Typical**

**Field: Link**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the link object.

**Field: Angle**
- Field is Imported: Yes
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle that the local 2 and 3 axes are rotated about the positive local 1 axis, from the default orientation or from the orientation determined by the plane reference vector (and if it is a single-joint link object, the axis reference vector). The rotation for a positive angle appears counterclockwise when the local +1 axis is pointing toward you.

**Field: AdvanceAxes**
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is Yes if an advanced method is used to define the local axes reference vectors for the link. Otherwise it is No meaning that the default reference vectors are used.

Default means that the local 1-axis for two-joint link objects goes from the I-end to the J-end of the object and the local 1-axis for single-joint link objects is in the global +Z direction. The local 2-axis direction is specified by an angle measured from the global +Z axis (or from the global +X axis if the object local 1-axis is parallel to the global +Z axis). The rotation for a positive angle appears counterclockwise when the local +1 axis is pointing toward you.

Advanced means that the local axes are defined with respect to user-defined reference vectors.
Table: Link Local Axes Assignments 2 - Advanced

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link</td>
<td>Name of the link object.</td>
</tr>
<tr>
<td>LocalPlane</td>
<td>This item indicates the local plane that is to be determined by the plane</td>
</tr>
<tr>
<td></td>
<td>reference vector. It is either 12 or 13, indicating the 1-2 or the 1-3 plane,</td>
</tr>
<tr>
<td></td>
<td>respectively.</td>
</tr>
<tr>
<td>AxOption1</td>
<td>This is either Coord Dir, Two Joints or User Vector indicating the first</td>
</tr>
<tr>
<td></td>
<td>method used to determine the axial reference vector.</td>
</tr>
<tr>
<td>AxCoordSys</td>
<td>The coordinate system used to define the axial reference vector coordinate</td>
</tr>
<tr>
<td></td>
<td>direction and the axial user vector.</td>
</tr>
<tr>
<td>AxCoordDir</td>
<td>Axial coordinate direction taken at the link center in the specified</td>
</tr>
<tr>
<td></td>
<td>coordinate system and used to define the axis reference vector. It may be</td>
</tr>
<tr>
<td></td>
<td>-SB, -SA, -SR. This item is only applicable to single-joint link objects.</td>
</tr>
<tr>
<td>AxVecJt1</td>
<td>Axial user vector at the link center.</td>
</tr>
</tbody>
</table>

Field is Imported: Yes
Format: Controlled by program
Units: Text
AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector for single joint link objects. If one of these items is reported as 0 then it means the link object center. If both items are reported as zero then this option is not used to define the axis reference vector. These items do not apply to two-joint link objects.

Field: AxVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector for single joint link objects. If one of these items is reported as 0 then it means the link object center. If both items are reported as zero then this option is not used to define the axis reference vector. These items do not apply to two-joint link objects.

Field: PlOption1
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the plane reference vector.

Field: PICoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

The coordinate system used to define the plane reference vector coordinate directions and the plane user vector.

Field: CoordDir1
Field is Imported: Yes
Format: Controlled by program
Units: Text

The primary coordinate direction taken at the object center in the specified coordinate system. It is used to determine the reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: CoordDir2
Field is Imported: Yes
Format: Controlled by program
Units: Text
The secondary coordinate direction taken at the object center in the specified coordinate system. It is used to determine the reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PlVecJt1
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these joints may be specified as 0 to indicate the center of the specified object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: AxVecX
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The X direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: AxVecY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: AxVecZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the axis reference vector in the coordinate system defined by the CoordSys item.
Field: **PlVecX**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: **PlVecY**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: **PlVecZ**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

**Table: Link Property Definitions 01 - General**

Field: **Link**
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: **LinkType**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Linear, MultiLinear, Gap, Hook, Damper, Plastic (Wen), Rubber Isolator, or Friction Isolator indicating the type of link object.

Field: **Mass**
Field is Imported: Yes
Format: Mass (Mass and Weight section of form)
Units: Force-Sec^2/Length

Mass assigned to this link property.
Field: **Weight**

Field is Imported: Yes  
Format: Weight (Mass and Weight section of form)  
Units: Force

Weight assigned to this link property.

Field: **RotInert1**

Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²

Rotational mass moment of inertia about the link local 1-axis assigned to the associated link property.

Field: **RotInert2**

Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²

Rotational mass moment of inertia about the link local 2-axis assigned to the associated link property.

Field: **RotInert3**

Field is Imported: Yes  
Format: Rotational Inertia (Mass and Weight section of form)  
Units: Force-Length-Sec²

Rotational mass moment of inertia about the link local 3-axis assigned to the associated link property.

Field: **PDM2I**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

P-Delta factor for moment at the I-end of the link about the link local 2-axis. This is the fraction of the P-Delta moment about the local 2-axis that is resisted as moment at the I-end of the link.

Note that the P-Delta moment can be resisted by moment at the I-End, moment at the J-End, and a shear couple where the shears are applied at the I and J ends. PDM2I and PDM2J are the fractions of the P-Delta moment about the local 2-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 2-axis is taken as a shear couple.

Similarly, PDM3I and PDM3J are the fractions of the P-Delta moment about the local 3-axis that is resisted as moment at the ends of the link.
The remainder of the P-Delta moment about the local 3-axis is taken as a shear couple.

Field: PDM2J
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

P-Delta factor for moment at the J-end of the link about the link local 2-axis. This is the fraction of the P-Delta moment about the local 2-axis that is resisted as moment at the J-end of the link.

Note that the P-Delta moment can be resisted by moment at the I-End, moment at the J-End, and a shear couple where the shears are applied at the I and J ends. PDM2I and PDM2J are the fractions of the P-Delta moment about the local 2-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 2-axis is taken as a shear couple.

Similarly, PDM3I and PDM3J are the fractions of the P-Delta moment about the local 3-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 3-axis is taken as a shear couple.

Field: PDM3I
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

P-Delta factor for moment at the I-end of the link about the link local 3-axis. This is the fraction of the P-Delta moment about the local 3-axis that is resisted as moment at the I-end of the link.

Note that the P-Delta moment can be resisted by moment at the I-End, moment at the J-End, and a shear couple where the shears are applied at the I and J ends. PDM2I and PDM2J are the fractions of the P-Delta moment about the local 2-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 2-axis is taken as a shear couple.

Similarly, PDM3I and PDM3J are the fractions of the P-Delta moment about the local 3-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 3-axis is taken as a shear couple.

Field: PDM3J
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
P-Delta factor for moment at the J-end of the link about the link local 3-axis. This is the fraction of the P-Delta moment about the local 3-axis that is resisted as moment at the J-end of the link.

Note that the P-Delta moment can be resisted by moment at the I-End, moment at the J-End, and a shear couple where the shears are applied at the I and J ends. PDM2I and PDM2J are the fractions of the P-Delta moment about the local 2-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 2-axis is taken as a shear couple.

Similarly, PDM3I and PDM3J are the fractions of the P-Delta moment about the local 3-axis that is resisted as moment at the ends of the link. The remainder of the P-Delta moment about the local 3-axis is taken as a shear couple.

Field: Color
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color associated with the property.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Table: Link Property Definitions 02 - Linear

Field: Link
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: TransKE
Field is Imported: Yes
Format: Translational Stiffness  (Stiffness section of form)  
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: RotKE
Field is Imported: Yes
Format: Rotational Stiffness  (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE
Field is Imported: Yes
Format: Eff Damping - Trans  (Damping Items section of form)
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE
Field is Imported: Yes
Format: Eff Damping - Rot  (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance  (Structure Dimensions section of form)
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Table: Link Property Definitions 03 - MultiLinear

Field: Link
Field is Imported: Yes
Field: **DOF**

Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: **NonLinear**

Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: **TransKE**

Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **RotKE**

Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **TransCE**

Field is Imported: Yes
Format: Eff Damping - Trans (Damping Items section of form)
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.
Field: RotCE
Field is Imported: Yes
Format: Eff Damping - Rot (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: Point
Field is Imported: No
Format: Controlled by program
Units: Text

Designation of a point on the multilinear force-deformation curve.

Field: Force
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The force at the specified point on the multilinear force-deformation curve. This item only applies to translational degrees of freedom (U1, U2 and U3).

Field: Displ
Field is Imported: Yes
Format: Translational Displ (Displacements section of form)
Units: Length

The displacement at the specified point on the multilinear force-deformation curve. This item only applies to translational degrees of freedom (U1, U2 and U3).

Field: Moment
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length
The moment at the specified point on the multilinear force-deformation curve. This item only applies to rotational degrees of freedom (R1, R2 and R3).

Field: Rotation
  Field is Imported: Yes
  Format: Rotational Displ (Displacements section of form)
  Units: Radians

The rotation at the specified point on the multilinear force-deformation curve. This item only applies to rotational degrees of freedom (R1, R2 and R3).

Table: Link Property Definitions 04 - Damper

Field: Link
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  The name of a link property.

Field: DOF
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: NonLinear
  Field is Imported: Yes
  Format: Controlled by program
  Units: Yes/No

  This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: TransKE
  Field is Imported: Yes
  Format: Translational Stiffness (Stiffness section of form)
  Units: Force/Length

  The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.
Field: RotKE
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE
Field is Imported: Yes
Format: Eff Damping - Trans (Damping Items section of form)
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE
Field is Imported: Yes
Format: Eff Damping - Rot (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: TransK
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: RotK
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad
The initial stiffness of a rotational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: TransC
Field is Imported: Yes
Format: NL Damping - Trans (Damping Items section of form)
Units: Force*(s/Length)^Cexp

The nonlinear damping coefficient used for translational degrees of freedom. This item is used for nonlinear analysis cases only.

Field: RotC
Field is Imported: Yes
Format: NL Damping - Rot (Damping Items section of form)
Units: Force-Length*(s/rad)^Cexp

The nonlinear damping coefficient used for rotational degrees of freedom. This item is used for nonlinear analysis cases only.

Field: CExp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The nonlinear damping exponent that is applied to the velocity across the damper in the equation of motion. This item is used for nonlinear analysis cases only.

Table: Link Property Definitions 05 - Gap

Field: Link
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: NonLinear
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: TransKE
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: RotKE
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE
Field is Imported: Yes
Format: Eff Damping - Trans (Damping Items section of form)
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE
Field is Imported: Yes
Format: Eff Damping - Rot (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

**Field: TransK**
- Field is Imported: Yes
- Format: Translational Stiffness (Stiffness section of form)
- Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

**Field: RotK**
- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

The initial stiffness of a rotational degree of freedom of the link. This item is used for nonlinear analysis cases only.

**Field: TransOpen**
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The initial gap opening for a translational degree of freedom.

**Field: RotOpen**
- Field is Imported: Yes
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The initial gap opening for a rotational degree of freedom.

### Table: Link Property Definitions 06 - Hook

**Field: Link**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a link property.

**Field: DOF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: **NonLinear**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: **TransKE**
- Field is Imported: Yes
- Format: Translational Stiffness (Stiffness section of form)
- Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **RotKE**
- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **TransCE**
- Field is Imported: Yes
- Format: Eff Damping - Trans (Damping Items section of form)
- Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: **RotCE**
- Field is Imported: Yes
- Format: Eff Damping - Rot (Damping Items section of form)
- Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.
Field: DJ
- Field is Imported: Yes
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: TransK
- Field is Imported: Yes
- Format: Translational Stiffness (Stiffness section of form)
- Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: RotK
- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

The initial stiffness of a rotational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: TransOpen
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The initial hook opening for a translational degree of freedom.

Field: RotOpen
- Field is Imported: Yes
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The initial hook opening for a rotational degree of freedom.

Table: Link Property Definitions 07 - Rubber Isolator

Field: Link
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a link property.
Field: **DOF**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: **NonLinear**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: **TransKE**

- Field is Imported: Yes
- Format: Translational Stiffness (Stiffness section of form)
- Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **RotKE**

- Field is Imported: Yes
- Format: Rotational Stiffness (Stiffness section of form)
- Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: **TransCE**

- Field is Imported: Yes
- Format: Eff Damping - Trans (Damping Items section of form)
- Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: **RotCE**

- Field is Imported: Yes
- Format: Eff Damping - Rot (Damping Items section of form)
- Units: Force-Length-s/rad
The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: TransK
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: TransYield
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The yield force for the link. This item applies to translational degrees of freedom.

Field: Ratio
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ratio of the post-yield stiffness divided by the initial stiffness.

Table: Link Property Definitions 08 - Sliding Isolator

Field: Link
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: NonLinear

Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: TransKE

Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: RotKE

Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE

Field is Imported: Yes
Format: Eff Damping - Trans (Damping Items section of form)
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE

Field is Imported: Yes
Format: Eff Damping - Rot (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal
analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

**Field: DJ**
- Field is Imported: Yes
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

**Field: TransK**
- Field is Imported: Yes
- Format: Translational Stiffness (Stiffness section of form)
- Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

**Field: Slow**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The friction coefficient at zero velocity.

**Field: Fast**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The friction coefficient at fast velocity.

**Field: Rate**
- Field is Imported: Yes
- Format: Slider Rate (Miscellaneous section of form)
- Units: sec/Length

The inverse of the characteristic sliding velocity.

**Field: Radius**
- Field is Imported: Yes
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

Radius of the sliding contact surface. Note that 0 means there is an infinite radius, that is, the slider is flat.
Table: Link Property Definitions 09 - Plastic (Wen)

Field: Link
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: NonLinear
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: TransKE
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: RotKE
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE
Field is Imported: Yes
Format: Eff Damping - Trans (Damping Items section of form)
Units: Force-s/Length
The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE
Field is Imported: Yes
Format: Eff Damping - Rot (Damping Items section of form)
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: TransK
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)
Units: Force/Length

The initial stiffness of a translational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: RotK
Field is Imported: Yes
Format: Rotational Stiffness (Stiffness section of form)
Units: Force-Length/rad

The initial stiffness of a rotational degree of freedom of the link. This item is used for nonlinear analysis cases only.

Field: TransYield
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

The yield force for the link. This item applies to translational degrees of freedom.

Field: RotYield
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

The yield moment for the link. This item applies to rotational degrees of freedom.

Field: Ratio
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The ratio of the post-yield stiffness divided by the initial stiffness.

Field: YieldExp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The yielding exponent that controls the sharpness of the transition from the initial stiffness to the yielded stiffness.

Table: Link Property Definitions 10 - Plastic (Kinematic)

Field: Link
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Field: DOF
Field is Imported: Yes
Format: Controlled by program
Units: Text

This may be either U1, U2, U3, R1, R2 or R3 indicating the link property degree of freedom considered.

Field: NonLinear
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the link property is nonlinear. It is no if the link property is not nonlinear, that is, it is linear.

Field: TransKE
Field is Imported: Yes
Format: Translational Stiffness (Stiffness section of form)  
Units: Force/Length

The effective stiffness of the link for a translational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: RotKE
Field is Imported: Yes  
Format: Rotational Stiffness (Stiffness section of form)  
Units: Force-Length/rad

The effective stiffness of the link for a rotational degree of freedom. This stiffness is used for all linear analysis cases including modal analysis cases.

Field: TransCE
Field is Imported: Yes  
Format: Eff Damping - Trans (Damping Items section of form)  
Units: Force-s/Length

The effective damping of the link for a translational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: RotCE
Field is Imported: Yes  
Format: Eff Damping - Rot (Damping Items section of form)  
Units: Force-Length-s/rad

The effective damping of the link for a rotational degree of freedom. This damping is used for all linear analysis cases including modal analysis cases. The specified effective damping is converted to modal damping for these linear analysis cases.

Field: DJ
Field is Imported: Yes  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance from the J-End of the link to the shear spring. This item only applies to the U2 and U3 (shear) degrees of freedom.

Field: Point
Field is Imported: No  
Format: Controlled by program  
Units: Text
Designation of a point on the force-deformation curve.

**Field: Force**
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force

The force at the specified point on the force-deformation curve. This item only applies to translational degrees of freedom (U1, U2 and U3).

**Field: Displ**
- Field is Imported: Yes
- Format: Translational Displ (Displacements section of form)
- Units: Length

The displacement at the specified point on the force-deformation curve. This item only applies to translational degrees of freedom (U1, U2 and U3).

**Field: Moment**
- Field is Imported: Yes
- Format: Moment (Forces section of form)
- Units: Force-Length

The moment at the specified point on the force-deformation curve. This item only applies to rotational degrees of freedom (R1, R2 and R3).

**Field: Rotation**
- Field is Imported: Yes
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The rotation at the specified point on the force-deformation curve. This item only applies to rotational degrees of freedom (R1, R2 and R3).

**Table: Link Property Assignments**

**Field: Link**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Link object.

**Field: LinkType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either Linear, MultiLinear, Gap, Hook, Damper, Plastic (Wen), Rubber Isolator, or Friction Isolator indicating the type of link object.

Field: LinkJoints
Field is Imported: No
Format: Controlled by program
Units: Text

This is either SingleJoint or TwoJoint indicating the type of link object.

Field: LinkProp
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a link property.

Table: Load Case Definitions

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the load case.

Field: DesignType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either DEAD, SUPER DEAD, LIVE, REDUCE LIVE, QUAKE, WIND, SNOW, or OTHER. It is used for determining load case multipliers when the program creates default design load combinations.

Field: SelfWtMult
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The self weight multiplier for the load case.

Field: AutoLoad
Field is Imported: Yes
Format: Controlled by program
Units: Text
If the Type item is Quake or Wind then this is either None, User or the name of the design code used to create the auto load.

**Table: Masses 1 - Mass Source**

**Field: MassFrom**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item is either Elements, Loads or All. Elements means that the mass is calculated from the self mass of elements plus any additional masses specified on joint, frame or area elements. Loads means that the mass is calculated from a user-specified collection of one or more load cases. All means that the mass is calculated from both Elements and Loads.

**Field: LoadCase**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

A load case used to define the mass.

**Field: Multiplier**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Multiplier for the load case specified in the LoadCase item.

**Table: Masses 2 - Assembled Joint Masses**

**Field: Joint**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a joint.

**Field: UX**
- Field is Imported: No
- Format: Mass (Mass and Weight section of form)
- Units: Force-Sec2/Length

Total global X-direction mass applied to the specified joint either directly or indirectly.
Field: UY
Field is Imported: No
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Total global Y-direction mass applied to the specified joint either directly or indirectly.

Field: UZ
Field is Imported: No
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Total global Z-direction mass applied to the specified joint either directly or indirectly.

Field: RX
Field is Imported: No
Format: Rotational Inertia (Mass and Weight section of form)
Units: Force-Length-Sec2

Total mass moment of inertia about the global X-axis applied to the specified joint.

Field: RY
Field is Imported: No
Format: Rotational Inertia (Mass and Weight section of form)
Units: Force-Length-Sec2

Total mass moment of inertia about the global Y-axis applied to the specified joint.

Field: RZ
Field is Imported: No
Format: Rotational Inertia (Mass and Weight section of form)
Units: Force-Length-Sec2

Total mass moment of inertia about the global Z-axis applied to the specified joint.

Table: Material Properties 1 - General

Field: Material
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a material property.
Field: Type
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either isotropic, orthotropic or anisotropic indicating the type of material. In the majority of models isotropic properties are used.

Field: DesignType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Steel, Concrete, Aluminum, ColdFormed or None indicating the design type of the material.

Field: UnitMass
Field is Imported: Yes
Format: Mass/Volume (Mass and Weight section of form)
Units: Force-Sec2/Length4

The mass per unit volume of the material.

Field: UnitWeight
Field is Imported: Yes
Format: Weight/Volume (Mass and Weight section of form)
Units: Force/Length3

The weight per unit volume of the material.

Field: E
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Modulus of elasticity. This item only applies if the material is isotropic and not temperature dependent. Otherwise the properties are found in the Material Properties - Advanced table.

Field: U
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Poisson's ratio. This item only applies if the material is isotropic and not temperature dependent. Otherwise the properties are found in the Material Properties - Advanced table.
Field: A
Field is Imported: Yes
Format: Thermal Coefficient (Miscellaneous section of form)
Units: 1/Temp

Coefficient of thermal expansion (units are 1/delta temperature). This item only applies if the material is isotropic and not temperature dependent. Otherwise the properties are found in the Material Properties - Advanced table.

Field: NumAdvance
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of different advanced properties specified for the material.

Field: Color
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color associated with the material.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Table: Material Properties 2 - Advanced

Field: Material
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a material property.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The temperature at which the associated material properties apply.

Field: E1
Field is Imported: Yes
Modulus of elasticity in the Material 1 direction. This item is imported for isotropic, orthotropic and anisotropic materials.

Field: E2

Modulus of elasticity in the Material 2 direction. This item is imported for orthotropic and anisotropic materials.

Field: E3

Modulus of elasticity in the Material 3 direction. This item is imported for orthotropic and anisotropic materials.

Field: G12

Shear modulus in the Material 1-2 plane. This item is imported for orthotropic and anisotropic materials. For isotropic materials the value of G is calculated using the standard formula from E and U.

Field: G13

Shear modulus in the Material 1-3 plane. This item is imported for orthotropic and anisotropic materials. For isotropic materials the value of G is calculated using the standard formula from E and U.

Field: G23

Shear modulus in the Material 2-3 plane. This item is imported for orthotropic and anisotropic materials. For isotropic materials the value of G is calculated using the standard formula from E and U.
Field: U12
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Standard poisson's ratio. This item is imported for isotropic, orthotropic and anisotropic materials.

Field: U13
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Standard poisson's ratio. This item is imported for orthotropic and anisotropic materials.

Field: U23
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Standard poisson's ratio. This item is imported for orthotropic and anisotropic materials.

Field: U14
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U24
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U34
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Shear and coupling poisson's ratio. This item is imported for anisotropic materials.
Field: U15
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U25
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U35
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U45
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U16
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U26
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   Shear and coupling poisson's ratio. This item is imported for anisotropic materials.
Field: U36
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U46
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: U56
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Shear and coupling poisson's ratio. This item is imported for anisotropic materials.

Field: A1
Field is Imported: Yes
Format: Thermal Coefficient (Miscellaneous section of form)
Units: 1/Temp
Coefficient of thermal expansion in the Material 1 direction. This item is imported for isotropic, orthotropic and anisotropic materials. The units are 1/delta temperature.

Field: A2
Field is Imported: Yes
Format: Thermal Coefficient (Miscellaneous section of form)
Units: 1/Temp
Coefficient of thermal expansion in the Material 2 direction. This item is imported for orthotropic and anisotropic materials. The units are 1/delta temperature.

Field: A3
Field is Imported: Yes
Format: Thermal Coefficient (Miscellaneous section of form)
Units: 1/Temp
Coefficient of thermal expansion in the Material 3 direction. This item is imported for orthotropic and anisotropic materials. The units are 1/\(\Delta\) temperature.

Field: A12  
Field is Imported: Yes  
Format: Thermal Coefficient (Miscellaneous section of form)  
Units: 1/Temp

Coefficient of thermal expansion in the Material 1-2 plane. This item is imported for anisotropic materials. The units are 1/\(\Delta\) temperature.

Field: A13  
Field is Imported: Yes  
Format: Thermal Coefficient (Miscellaneous section of form)  
Units: 1/Temp

Coefficient of thermal expansion in the Material 1-3 plane. This item is imported for anisotropic materials. The units are 1/\(\Delta\) temperature.

Field: A23  
Field is Imported: Yes  
Format: Thermal Coefficient (Miscellaneous section of form)  
Units: 1/Temp

Coefficient of thermal expansion in the Material 2-3 plane. This item is imported for anisotropic materials. The units are 1/\(\Delta\) temperature.

Table: Material Properties 3 - Design Steel

Field: Material  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of a material property.

Field: Fy  
Field is Imported: Yes  
Format: Stress Input (Stresses section of form)  
Units: Force/Length^2

Yield stress of the steel.

Field: Fu  
Field is Imported: Yes  
Format: Stress Input (Stresses section of form)  
Units: Force/Length^2
Tensile strength of the steel.

**Table: Material Properties 4 - Design Concrete**

**Field: Material**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of a material property.

**Field: Fc**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Concrete compressive strength.

**Field: RebarFy**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Yield strength of the rebar used for axial and bending design calculations.

**Field: RebarFys**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Yield strength of the rebar used for shear design calculations.

**Field: LtWtConc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the material specified is lightweight concrete. Otherwise it is No.

**Field: LtWtFact**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The shear strength reduction factor for lightweight concrete.
Table: Material Properties 5 - Design Aluminum

Field: Material
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   Name of a material property.

Field: AlumType
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   This is either Wrought, Cast-Mold or Cast-Sand indicating the type of aluminum.

Field: Alloy
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   The Alloy designation for the aluminum, for example, 2014-T6 for wrought or 356.0-T7 for cast (mold or sand) aluminum.

Field: Ftu
   Field is Imported: Yes
   Format: Stress Input (Stresses section of form)
   Units: Force/Length^2

   Tensile ultimate strength of aluminum.

Field: Fty
   Field is Imported: Yes
   Format: Stress Input (Stresses section of form)
   Units: Force/Length^2

   Tensile yield strength of aluminum.

Field: Fcy
   Field is Imported: Yes
   Format: Stress Input (Stresses section of form)
   Units: Force/Length^2

   Compressive yield strength of aluminum.

Field: Fsu
   Field is Imported: Yes
   Format: Stress Input (Stresses section of form)
Units: Force/Length²

Shear ultimate strength of aluminum.

Field: Fsy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Shear yield strength of aluminum.

Table: Material Properties 6 - Design ColdFormed

Field: Material
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of a material property.

Table: Named Sets - Analysis Results 1 - General

Field: DBONamedSet
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of an analysis results named set.

Field: SortOrder
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 'Elem, Cases' or 'Cases, Elem' indicating the output sort order.

Field: ModeStart
Field is Imported: Yes
Format: Controlled by program
Units: Text

The starting mode for modal output.

Field: ModeEnd
Field is Imported: Yes
Format: Controlled by program
Units: Text

The ending mode for modal output. If all modes are to be output then this item is All.

Field: ModalHist
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Envelopes or StepByStep indicating the type of output specified for modal history analysis cases.

Field: DirectHist
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Envelopes or StepByStep indicating the type of output specified for direct history analysis cases.

Field: NLStatic
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Last Step or StepByStep indicating the type of output specified for nonlinear static analysis cases.

Field: BaseReacX
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The Global X coordinate of the point where the base reactions are reported.

Field: BaseReacY
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The Global Y coordinate of the point where the base reactions are reported.

Field: BaseReacZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length
The Global Z coordinate of the point where the base reactions are reported.

Field: Combo
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is either Envelopes or MultiValued indicating the type of output specified for combinations.

Field: NumCheckBox
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total number of selected check boxes.

Field: NumCases
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected analysis cases.

Field: NumGenDispl
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected generalized displacements.

Field: NumJtForce
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected joint force types.

Field: NumSectCuts
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected section cuts.

Field: NumEESets
Field is Imported: No
Field: NumNLSSets
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected nonlinear static curves named sets.

Field: NumRSSets
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected joint time history response spectra named sets.

Field: NumPFSets
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of selected plot function traces named sets.

Table: Named Sets - Analysis Results 2 - Selections

Field: DBONamedSet
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of an analysis results named set.

Field: SelectType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The type of selection. This is either CheckBox, AnalysCase, GenDispl (short for generalized displacement), JointForce, SectionCut, EENamedSet (EE is short for element energy), NLSNamedSet (NLS is short for nonlinear static curves), RSNamedSet (RS is short for joint time history response spectra), or PFNamedSet (PF is short for plot function trace).
Field: CheckBxArea
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is only filled if the SelectType item is Check box. It is either Joint, Element or Structure, indicating the area on the Database Output Tables form where the check box exists.

Field: Selection
Field is Imported: Yes
Format: Controlled by program
Units: Text

Depending on the value of the SelectType item, this item is one of the following:

Check box: Caption of the selected check box.
Analysis case: Name of the selected analysis case.
Gen displ: Name of the selected generalized displacement.
Joint force: Type of the selected joint force.
Section cut: Name of the selected section cut.
EE named set: Name of the selected element energy named set.
NLS named set: Name of the selected nonlinear static curves named set.
RS named set: Name of the selected joint time history response spectra named set.
PF named set: Name of the selected plot function traces named set.

Table: Named Sets - Element Energy

Field: EENamedSet
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of an element energy named set.

Field: ForceCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

The analysis case used for forces when computing the element energy.

Field: DisplCase
Field is Imported: Yes
Format: Controlled by program
Units: Text
The analysis case used for displacements when computing the element energy.

Field: ShowValues
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the element energy is to be shown as values when displayed on screen. It is no if it is to be shown as different colors (with a legend) when displayed on screen.

Table: Named Sets - Model Definition

Field: DBINamedSet
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a model definition named set.

Field: SelectType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The type of selection. This is either Check box or Load case.

Field: CheckBxArea
Field is Imported: Yes
Format: Controlled by program
Units: Text

This item is only filled if the SelectType item is Check box. It is either Structure, Geometry, Properties, Loads, Cases, Joints, Frames, Areas, Solids, or Links, indicating the area on the Database Input Tables form where the check box exists.

Field: Selection
Field is Imported: Yes
Format: Controlled by program
Units: Text

If the SelectType item is Check box then this is the name of the selected checkbox. If the SelectType item is Load case then this is the name of the selected load case.
The name of a nonlinear static curve named set.

The analysis case for which the nonlinear static curve is generated.

This is either Force-Displ (short for force-displacement) or ADRS (short for acceleration-displacement response spectrum, i.e., capacity spectrum).

Additional notes associated with the nonlinear static curve.

This is either a defined color or an integer representation of the color in which the trace will be the nonlinear static curve will be displayed on the screen.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Field: Ca
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Ca coefficient for demand curves in a capacity spectrum plot.

Field: Cv
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Cv coefficient for demand curves in a capacity spectrum plot.

Field: PlotPeriod
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the lines of constant period are to be displayed on screen in the capacity spectrum plot. Otherwise it is No.

Field: PlotDemand
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the demand spectra for different damping levels are to be displayed on screen in the capacity spectrum plot. Otherwise it is No.

Field: PlotSingle
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the single demand spectrum is to be displayed on screen in the capacity spectrum plot. Otherwise it is No.

Field: PeriodColor
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color in which the trace will be the period lines will be displayed on the screen.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.
Field: DemandColor

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color in which the trace will be the family of demand curves will be displayed on the screen.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Field: SingleColor

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color in which the trace will be the single demand curve will be displayed on the screen.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Field: Period1

Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The first of four user specified periods which will be displayed on screen in the capacity spectrum plot if the PlotPeriod item is Yes.

Field: Period2

Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The second of four user specified periods which will be displayed on screen in the capacity spectrum plot if the PlotPeriod item is Yes.

Field: Period3

Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec
The third of four user specified periods which will be displayed on screen in the capacity spectrum plot if the PlotPeriod item is Yes.

Field: Period4
Field is Imported: Yes
Format: Period (Time-Related section of form)
Units: Sec

The fourth of four user specified periods which will be displayed on screen in the capacity spectrum plot if the PlotPeriod item is Yes.

Field: Damping1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The first of four user specified damping values for which demand spectra will be displayed on screen in the capacity spectrum plot if the PlotDemand item is Yes.

Field: Damping2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The second of four user specified damping values for which demand spectra will be displayed on screen in the capacity spectrum plot if the PlotDemand item is Yes.

Field: Damping3
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The third of four user specified damping values for which demand spectra will be displayed on screen in the capacity spectrum plot if the PlotDemand item is Yes.

Field: Damping4
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The fourth of four user specified damping values for which demand spectra will be displayed on screen in the capacity spectrum plot if the PlotDemand item is Yes.

Field: AddDamp
Field is Imported: Yes
The inherent and additional structural damping used in the capacity spectrum plot.

**Field: StructType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either A, B, C, or User indicating the structural type.

**Field: BetaZero1**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Percent

The BetaSubZero value for point 1 associated with the specified StructType item.

**Field: Kappa1**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The Kappa value for point 1 associated with the specified StructType item.

**Field: BetaZero2**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Percent

The BetaSubZero value for point 2 associated with the specified StructType item.

**Field: Kappa2**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The Kappa value for point 1 associated with the specified StructType item.

**Field: HLabelFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
The horizontal axis label for a force-displacement plot.

**Field: VLabelFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The vertical axis label for a force-displacement plot.

**Field: HMinFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The minimum horizontal axis value displayed for a force-displacement plot. If both HMinFD and HMaxFD are input as 0, then the entire horizontal extent of the force-displacement plot is displayed.

**Field: HMaxFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum horizontal axis value displayed for a force-displacement plot. If both HMinFD and HMaxFD are input as 0, then the entire horizontal extent of the force-displacement plot is displayed.

**Field: VMinFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The minimum vertical axis value displayed for a force-displacement plot. If both VMinFD and VMaxFD are input as 0, then the entire vertical extent of the force-displacement plot is displayed.

**Field: VMaxFD**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum vertical axis value displayed for a force-displacement plot. If both VMinFD and VMaxFD are input as 0, then the entire vertical extent of the force-displacement plot is displayed.

**Field: HLabelCS**
- Field is Imported: Yes
- Format: Controlled by program
Units: Text

The horizontal axis label for a capacity spectrum plot.

Field: VLabelCS
Field is Imported: Yes
Format: Controlled by program
Units: Text

The vertical axis label for a capacity spectrum plot.

Field: HMinCS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum horizontal axis value displayed for a capacity spectrum plot. If both HMinCS and HMaxCS are input as 0, then the entire horizontal extent of the capacity spectrum plot is displayed.

Field: HMaxCS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum horizontal axis value displayed for a capacity spectrum plot. If both HMinCS and HMaxCS are input as 0, then the entire horizontal extent of the capacity spectrum plot is displayed.

Field: VMinCS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum vertical axis value displayed for a capacity spectrum plot. If both VMinCS and VMaxCS are input as 0, then the entire vertical extent of the capacity spectrum plot is displayed.

Field: VMaxCS
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum vertical axis value displayed for a capacity spectrum plot. If both VMinCS and VMaxCS are input as 0, then the entire vertical extent of the capacity spectrum plot is displayed.
Table: Named Sets - Plot Function Traces 1 - General

Field: PFNamedSet
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a plot function trace named set.

Field: Case
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The analysis case for which the plot function trace is generated.

Field: HorizFunc
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Time, or the name of a plot function indicating the item used for the horizontal axis of the plot function trace.

Field: NumVertFunc
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The number of vertical plot functions contained in this named set.

Field: TimeFrom
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The starting time (or step) for the plot function trace.

Field: TimeTo
- Field is Imported: Yes
- Format: Other Time (Seconds) (Time-Related section of form)
- Units: Sec

The ending time (or step) for the plot function trace.

Field: OverrideH
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No
This item is Yes if the default range of values displayed (or tabulated) for
the horizontal axis of the plot function trace is to be overridden.

Field: OverrideV
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the default range of values displayed (or tabulated) for
the vertical axis of the plot function trace is to be overridden.

Field: HorizMin
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum value displayed (or tabulated) along the horizontal axis of
the plot function trace. If both the HorizMin and the HorizMax items are
zero then the full horizontal range of the plot function trace is displayed.

Field: HorizMax
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum value displayed (or tabulated) along the horizontal axis of
the plot function trace. If both the HorizMin and the HorizMax items are
zero then the full horizontal range of the plot function trace is displayed.

Field: VertMin
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The minimum value displayed (or tabulated) along the vertical axis of
the plot function trace. If both the VertMin and the VertMax items are
zero then the full vertical range of the plot function trace is displayed.

Field: VertMax
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum value displayed (or tabulated) along the vertical axis of
the plot function trace. If both the VertMin and the VertMax items are
zero then the full vertical range of the plot function trace is displayed.
Field: **HorizLabel**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

   The horizontal axis label for the plot function trace.

Field: **VertLabel**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

   The vertical axis label for the plot function trace.

Field: **GridOverlay**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

   This item is Yes if grid lines are displayed on the plot function trace. Otherwise it is No.

### Table: Named Sets - Plot Function Traces 2 - Vertical Functions

Field: **PFNamedSet**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

   The name of a plot function trace named set.

Field: **VertFunc**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

   Name of the vertical plot function in the plot function trace.

Field: **LineType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

   This is either Solid, Dashed or Dotted indicating the line type used when the trace is displayed on the screen.
Field: LineColor
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color in which the trace will be displayed on the screen.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Field: VertSF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A scale factor applied to the vertical plot function values in the trace.

Table: Named Sets - Response Spectrum 1 - General

Field: RSNamedSet
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of a joint time history response spectrum named set.

Field: Case
Field is Imported: Yes
Format: Controlled by program
Units: Text

The analysis case for which the response spectrum curve is generated.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

The coordinate system in which the response spectrum curve is generated.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text
This is either UX, UY, or UZ (U1, U2 or U3 for local) indicating the direction in the specified coordinate system for which the response spectrum curve is generated.

Field: AbsType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either frequency or period indicating the data type for the abscissa (horizontal axis) of the response spectrum curve.

Field: OrdType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either SD, SV, PSV, SA, or PSA indicating the data type for the ordinate (vertical axis) of the response spectrum curve.

SD is spectral displacement, SV is spectral velocity, PSV is pseudo spectral velocity, SA is spectral acceleration, and PSA is pseudo spectral acceleration.

Field: SpcWidening
Field is Imported: Yes
Format: Controlled by program
Units: Percent

The peaks of the spectrum are widened by two times this percentage of the frequency at the peak. For example, if the frequency at a peak of the spectrum is 0.5 cycles/sec, and the specified spectrum widening is 10%, then the peak is widened on each side by 0.10 * 0.5 = .05 cycles per second. In other words, the peak is widened to extend from 0.45 cycles per second to 0.55 cycles per second.

Field: OrdSF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A scale factor applied to the ordinate (vertical axis) values of the response spectrum.

The scale factor item linearly scales the ordinates of the response spectrum. This scale factor can be useful if, for example, you have run your analysis in kip and inch units and you want to see a PSA response spectrum with the acceleration in g (acceleration of gravity) instead of
inches/second^2. If this were the case you would specify the scale factor as:

\[
1 / 386.4 = 0.002588.
\]

**Field: NumJoints**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The number of joints specified in the named set.

**Field: NumDamping**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The number of different damping values specified in the named set.

**Field: DefFreqPer**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the Default Frequencies (or Periods) are included as values for which a point will exist on the generated response spectrum curve.

The default frequencies in Hz are: 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 2, 2.2, 2.4, 2.6, 2.8, 3, 3.3, 3.6, 4, 4.4, 4.7, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 10, 11, 12, 13, 14, 15, 16.5, 18, 20, 22, 25, 28 and 33. The default periods are equal to one divided by the default frequencies.

**Field: StrFreqPer**

- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the structural frequencies (periods) calculated by the program are frequencies (periods) for which a point will be generated on the response spectrum curve. The frequencies (periods) used are those for the modal analysis case that is associated with the specified analysis case for the response spectrum generation.

**Field: NumUserFP**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The number of user-specified frequency (or period) values for which a point will be generated on the response spectrum curve.

**Field: AbsScale**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The is either Arithmetic or Log indicating the type of scale used on the abscissa (horizontal axis) of the response spectrum curve.

**Field: OrdScale**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The is either Arithmetic or Log indicating the type of scale used on the ordinate (vertical axis) of the response spectrum curve.

**Field: GridOverlay**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if grid lines are displayed on the response spectrum plot. Otherwise it is No.

**Table: Named Sets - Response Spectrum 2 - Joints**

**Field: RSNamedSet**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a joint time history response spectrum named set.

**Field: Joint**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

A joint for which a response spectrum curve is generated.
### Table: Named Sets - Response Spectrum 3 - Damping

**Field: RSNamedSet**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a joint time history response spectrum named set.

**Field: Damping**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

A damping value for which a response spectrum curve is generated.

### Table: Named Sets - Response Spectrum 4 - User Freq/Periods

**Field: RSNamedSet**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The name of a joint time history response spectrum named set.

**Field: FreqOrPer**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Frequency or Period. It indicates which of the following fields (Frequency or Period) will be read on import.

**Field: Frequency**
- Field is Imported: Yes
- Format: Frequency (Time-Related section of form)
- Units: Cyc/sec

A frequency value for which a point will be generated on the response spectrum curve.

**Field: Period**
- Field is Imported: Yes
- Format: Period (Time-Related section of form)
- Units: Sec
A period value for which a point will be generated on the response spectrum curve.

**Table: Overwrites - Aluminum Design - AA-ASD 2000**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

**Field: RLLF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

**Field: XLMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced
length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless coefficient that depends on the moment gradient. Specifying 0 means the value is program determined.

Field: K1Comp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Coefficient for determining slenderness limit for elements in compression. Specifying 0 means the value is program determined.

Field: K2Comp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining allowable compressive stress for elements in compression. Specifying 0 means the value is program determined.

Field: K1Bend
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining slenderness limit for elements in bending. Specifying 0 means the value is program determined.

Field: K2Bend
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining allowable compressive stress for elements in bending. Specifying 0 means the value is program determined.

Field: KT
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for tension members, kt. Specifying 0 means the value is program determined.

Field: C1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Lateral buckling coefficient, C1. Specifying 0 means the value is program determined.

Field: C2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Lateral buckling coefficient, C2. Specifying 0 means the value is program determined.

**Field: Fy**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

**Field: Fa**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

Allowable compressive stress for member considered as an axially loaded column. Specifying 0 means the value is program determined.

**Field: Ft**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

Allowable tensile stress for a member loaded only axially. Specifying 0 means the value is program determined.

**Field: Fb3**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

Allowable bending stress for major axis bending for members subjected to bending only. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Fb2**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

Allowable bending stress for minor axis bending for members subjected to bending only. Specifying 0 means the value is program determined.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field:** Fs2  
Field is Imported: Yes  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

Allowable shear stress for major direction shear for members subjected only to shear or torsion. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field:** Fs3  
Field is Imported: Yes  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

Allowable shear stress for minor direction shear for members subjected only to shear or torsion. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Table: Overwrites - Aluminum Design - AA-LRFD 2000**

**Field:** Frame  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

**Field:** DesignSect  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text
The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

**Field: RLLF**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

**Field: XLMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.
For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the 
bending about the section principal axis with the larger moment of 
inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending. It captures the effect of 
non-uniform moment distribution along the length. Specifying 0 means 
the value is program determined.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the 
bending about the section principal axis with the smaller moment of 
inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless coefficient that depends on the moment gradient. Specifying 0 
means the value is program determined.

Field: K1Comp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining slenderness limit for elements in 
compression. Specifying 0 means the value is program determined.

Field: K2Comp
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining allowable compressive stress for elements in 
compression. Specifying 0 means the value is program determined.
Coefficient for determining slenderness limit for elements in bending. Specifying 0 means the value is program determined.

Field: K2Bend
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for determining allowable compressive stress for elements in bending. Specifying 0 means the value is program determined.

Field: KT
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Coefficient for tension members, kt. Specifying 0 means the value is program determined.

Field: C1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Lateral buckling coefficient, C1. Specifying 0 means the value is program determined.

Field: C2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Lateral buckling coefficient, C2. Specifying 0 means the value is program determined.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: Fa
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2
Allowable compressive stress for member considered as an axially loaded column. Specifying 0 means the value is program determined.

Field: Ft
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable tensile stress for a member loaded only axially. Specifying 0 means the value is program determined.

Field: Fb3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable bending stress for major axis bending for members subjected to bending only. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fb2
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable bending stress for minor axis bending for members subjected to bending only. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fs2
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for major direction shear for members subjected only to shear or torsion. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: Fs3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Allowable shear stress for minor direction shear for members subjected only to shear or torsion. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - AASHTO Concrete 97

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.

Field: RLLF
Field is Imported: Yes
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined.
determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DnsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DnsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: **DsMinor**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Table: Overwrites - Concrete Design - ACI 318-99**

**Field: Frame**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of a Frame object.

**Field: DesignSect**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis.
This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DnsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DnsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: DsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - BS8110 89

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: **RLLF**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: **XLMajor**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **XLMinor**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **BetaMajor**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: BetaMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: DnsMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: DnsMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: DsMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: DsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - BS8110 97

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMInor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: BetaMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective...
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: BetaMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis.
This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DnsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DnsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

**Field: DsMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Table: Overwrites - Concrete Design - CSA-A233-94**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling. For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **DbMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **DbMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **DsMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: DsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - EUROCODE 2-1992

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: **RLLF**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: **XLMajor**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **XLMajor**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **BetaMajor**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: BetaMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CmMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **DnsMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **DnsMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **DsMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: DsMinor  
Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - Indian IS 456-2000

Field: Frame  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: DesignSect  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DnsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DnsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: DsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - Italian DM 14-2-92

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis.
This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. This item only applies to frame objects with column-type
current design sections.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the
interaction ratio. Specifying 0 means the value is program determined.
This item only applies to frame objects with column-type current design
sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **OmegaMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **OmegaMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: CMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - Mexican RCDF 2001

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **XKMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CmMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CmMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FabMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FabMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FasMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: FasMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Concrete Design - NZS 3101-95

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for lateral-torsional buckling.
length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CmMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: DbMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: DbMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: DsMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

**Field: DsMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Table: Overwrites - Concrete Design - UBC97**

**Field: Frame**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of a Frame object.

**Field: DesignSect**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The framing type. This is either Sway Special, Sway Intermediate, Sway Ordinary, or NonSway. This item is used for ductility considerations in the design. The program determined value is Sway Special.
Field: RLLF

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: HEQFactor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: XLMajor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for major axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor for minor axis bending, used in determining the interaction ratio. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DnsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DnsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Specifying 0 means the value is program determined. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: DsMajor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DsMinor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Specifying 0 means the value is program determined. The program determined value is taken as 1 because it is assumed that P-Delta affects were specified to be included in the analysis, and thus no further magnification is required. This item only applies to frame objects with column-type current design sections.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - AASHTO Steel 97

Field: Frame

Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect

Field is Imported: Yes
Format: Controlled by program
Units: Text
The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: **FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: **RLLF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: **XLMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **XLMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: DbMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: DbMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.
Field: DsMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: DsMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length⁴

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: PhiPnc
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: PhiPnt
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.
Field: PhiMn3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMn2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVn2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVn3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the 
bending about the section principal axis with the smaller moment of 
inertia.

Table: Overwrites - Steel Design - AISC-ASD89

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is 
applied any previous auto select section assigned to the frame object is 
removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This 
item is used for ductility considerations in the design. The program 
determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this 
factor to obtain the reduced live load for the frame object. Specifying 0 
means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. 
This item is specified as a fraction of the frame object length. 
Multiplying this factor times the frame object length gives the unbraced
length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2
Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

**Field: Fa**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Allowable axial compressive stress. Specifying 0 means the value is program determined.

**Field: Ft**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Allowable axial tensile stress. Specifying 0 means the value is program determined.

**Field: Fb3**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Fb2**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fv2**
- Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fv3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - AISC-LRFD93

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: B1Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B1Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response
spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Omega0
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: PhiPnc
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: PhiPnt
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force
Allowable axial tensile stress. Specifying 0 means the value is program determined.

**Field: PhiMn3**
- Field is Imported: Yes
- Format: Moment (Forces section of form)
- Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: PhiMn2**
- Field is Imported: Yes
- Format: Moment (Forces section of form)
- Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PhiVn2**
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: PhiVn3**
- Field is Imported: Yes
- Format: Force (Forces section of form)
- Units: Force
Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - API RP2A-LRFD 97

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.
Field: B1Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B1Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.
Field: **Fy**

Field is Imported: Yes  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: **PhiPnc**

Field is Imported: Yes  
Format: Force (Forces section of form)  
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: **PhiPnt**

Field is Imported: Yes  
Format: Force (Forces section of form)  
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: **PhiMn3**

Field is Imported: Yes  
Format: Moment (Forces section of form)  
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **PhiMn2**

Field is Imported: Yes  
Format: Moment (Forces section of form)  
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: PhiVn2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVn3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: UserPress
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the confining pressure on the outer surface of the pipe section is defined by the user. It is No if the confining pressure is program determined based on data input in the steel preferences. If this item is Yes then the user defined pressure value is specified in the Pressure field.

Field: Pressure
Field is Imported: Yes
Format: Force/Area (Forces section of form)
Units: Force/Length2

The confining pressure on the outer surface of the pipe section. This item is only used if the UserPress item is Yes. If the UserPress item is
No then the confining pressure is program determined based on data input in the steel preferences.

### Table: Overwrites - Steel Design - API RP2A-WSD2000

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

  Label of a Frame object.

**Field: DesignSect**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

  The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

  The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

**Field: RLLF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

  The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

**Field: XLMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

  Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced...
length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. For beam design, this factor is always taken as 1 regardless
of what may be specified in the overwrites. This factor is also used for
determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field:  CmMajor
Field is Imported:  Yes
Format:  Controlled by program
Units:  Unitless

Unitless factor, Cm for major axis bending, used in determining the
stress ratio. It captures the effect of non-uniform moment distribution
along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field:  CmMinor
Field is Imported:  Yes
Format:  Controlled by program
Units:  Unitless

Unitless factor, Cm for minor axis bending, used in determining the
stress ratio. It captures the effect of non-uniform moment distribution
along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field:  Cb
Field is Imported:  Yes
Format:  Controlled by program
Units:  Unitless

Unitless factor, Cb, used in determining the allowable bending stress.
Specifying 0 means the value is program determined.

Field:  Fy
Field is Imported:  Yes
Format:  Stress Input  (Stresses section of form)
Units:  Force/Length2
Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

**Field: Fa**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length\(^2\)

Allowable axial compressive stress. Specifying 0 means the value is program determined.

**Field: Ft**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length\(^2\)

Allowable axial tensile stress. Specifying 0 means the value is program determined.

**Field: Fb3**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length\(^2\)

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Fb2**
- Field is Imported: Yes
- Format: Stress Input (Stresses section of form)
- Units: Force/Length\(^2\)

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fv2**
- Field is Imported: Yes
Format: Stress Input (Stresses section of form)  
Units: Force/Length^2

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fv3
Field is Imported: Yes  
Format: Stress Input (Stresses section of form) 
Units: Force/Length^2

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: UserPress
Field is Imported: Yes  
Format: Controlled by program 
Units: Yes/No

This item is Yes if the confining pressure on the outer surface of the pipe section is defined by the user. It is No if the confining pressure is program determined based on data input in the steel preferences. If this item is Yes then the user defined pressure value is specified in the Pressure field.

Field: Pressure
Field is Imported: Yes  
Format: Force/Area (Forces section of form) 
Units: Force/Length^2

The confining pressure on the outer surface of the pipe section. This item is only used if the UserPress item is Yes. If the UserPress item is No then the confining pressure is program determined based on data input in the steel preferences.
Table: Overwrites - Steel Design - ASCE 10-97

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.</td>
</tr>
<tr>
<td>FrameType</td>
<td>The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.</td>
</tr>
<tr>
<td>RLLF</td>
<td>The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.</td>
</tr>
<tr>
<td>XLMajor</td>
<td>Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.</td>
</tr>
</tbody>
</table>

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

**Field: XLMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.
Field: Pac
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: Pat
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: Ma3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Ma2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fv2
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fv3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - BS5950 2000

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.
Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. For beam design, this factor is always taken as 1 regardless
of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis.
This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective
length for the object. Specifying 0 means the value is program
determined. For beam design, this factor is always taken as 1 regardless
of what may be specified in the overwrites. This factor is also used for
determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: MMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the
stress ratio. It captures the effect of non-uniform moment distribution
along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: MMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the
stress ratio. It captures the effect of non-uniform moment distribution
along the length. Specifying 0 means the value is program determined.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MLT
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: Pc
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: Pt
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: Mc3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: Mc2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Mb
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Pv2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Pv3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - BS5950 90

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MMajor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinor**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: N**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.
Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: Pc
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: Pt
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: Mc3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mc2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: Mb
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Pv2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Pv3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - CISC 95

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMajor**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMinor**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: Omega1Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Omega1Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Omega2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: U1Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.
Field: U1Minor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: U2Major

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: U2Minor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy

Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: Cr

Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force
Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field:  Tr

Field is Imported:  Yes  
Format:  Force  (Forces section of form)  
Units:  Force  

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field:  Mr3  

Field is Imported:  Yes  
Format:  Moment  (Forces section of form)  
Units:  Force-Length  

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field:  Mr2  

Field is Imported:  Yes  
Format:  Moment  (Forces section of form)  
Units:  Force-Length  

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field:  Vr2  

Field is Imported:  Yes  
Format:  Force  (Forces section of form)  
Units:  Force  

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: Vr3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - EUROCODE 3-1993

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: KMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: KMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: **C1**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: **KLT**

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: **Fy**

Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: **Nc**

Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: **Nt**

Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: **Mc3**

Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length
Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mc2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Mb
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: V2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: V3
Field is Imported: Yes
Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Table: Overwrites - Steel Design - Italian UNI 10011**

**Field: Frame**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

**Field: RLLF**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.
Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: BetaMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: BetaMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MeqMmaxMaj
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MeqMmaxMin
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Omega1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: Omega
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Table: Overwrites - Steel Design - UBC97-ASD

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text
The framing type. This is either Ordinary MRF, Special MRF, Braced Frame, Special CBF or Eccentric BF. MRF is short for Moment Resisting Frame. CBF is short for Concentric Braced Frame. BF is short for Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

Field: RLLF
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

Field: HEQFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMaj

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMin

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor

Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: Omega0
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length^2
Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: Fa
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: Ft
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: Fb3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fb2
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fv2
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Fv3
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length²

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Overwrites - Steel Design - UBC97-LRFD

Field: Frame
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: Yes
Format: Controlled by program
Units: Text

The design section for the selected frame objects. When this overwrite is applied any previous auto select section assigned to the frame object is removed.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text
The framing type. This is either Ordinary MRF, Special MRF, Braced Frame, Special CBF or Eccentric BF. MRF is short for Moment Resisting Frame. CBF is short for Concentric Braced Frame. BF is short for Braced Frame. This item is used for ductility considerations in the design. The program determined value is taken from the steel preferences.

**Field: RLLF**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object. Specifying 0 means the value is program determined.

**Field: HEQFactor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

**Field: XLMajor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMinor**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless
Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object. Specifying 0 means the value is program determined. This factor is also used for determining the length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object. Specifying 0 means the value is program determined. For beam design, this factor is always taken as 1 regardless of what may be specified in the overwrites. This factor is also used for determining the effective length for lateral-torsional buckling.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMajor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for major axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMinor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cm for minor axis bending, used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Cb
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress. Specifying 0 means the value is program determined.

Field: B1Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B1Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Major
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: B2Minor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Omega0
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case. Specifying 0 means the value is program determined. The program determined value is always 1.

Field: Fy
Field is Imported: Yes
Format: Stress Input (Stresses section of form)
Units: Force/Length2
Material yield strength used in the design/check. Specifying 0 means the value is program determined. The program determined value is taken from the material property assigned to the frame object.

Field: PhiPnc
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial compressive stress. Specifying 0 means the value is program determined.

Field: PhiPnt
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable axial tensile stress. Specifying 0 means the value is program determined.

Field: PhiMn3
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in major axis bending. Specifying 0 means the value is program determined.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMn2
Field is Imported: Yes
Format: Moment (Forces section of form)
Units: Force-Length

Allowable bending stress in minor axis bending. Specifying 0 means the value is program determined.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVn2
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for major direction shear. Specifying 0 means the value is program determined.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVn3
Field is Imported: Yes
Format: Force (Forces section of form)
Units: Force

Allowable shear stress for minor direction shear. Specifying 0 means the value is program determined.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Table: Preferences - Aluminum Design - AA-ASD 2000

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: MaxIter**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

**Field: LatFact**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The allowable stress increase for stresses caused by wind or seismic loading. This item is only used when the Use Lateral Factor item is set to Yes.

**Field: UseLatFact**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the specified Lateral Factor is to be used in the design. Otherwise it is No.

**Field: Bridge**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Yes/No

This item is Yes if the structure is a bridge-type structure. It is no if the structure is some other type of structure such as a building-type structure.

**Table: Preferences - Aluminum Design - AA-LRFD 2000**

**Field: THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

**Field: FrameType**
- Field is Imported: Yes
Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Field: PhiY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of general yield.

Field: PhiB
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of beams or elements of beams.

Field: PhiC
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of elements of columns.

Field: PhiU
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The resistance factor for applicable to limit states of ultimate strength.

Field: PhiCC
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of columns.

Field: PhiCP
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of elastic buckling of tubes.

Field: PhiV
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of elastic shear buckling.

Field: PhiVP
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of inelastic shear buckling.

Field: PhiW
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The resistance factor for applicable to limit states of web crippling.

Table: Preferences - Concrete Design - AASHTO Concrete 97

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text
This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: NumPoints
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Table: Preferences - Concrete Design - ACI 318-99

Field: THDesign
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.
Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: SeisZone
Field is Imported: Yes
Format: Controlled by program
Units: Text

The seismic zone representing severity of seismic force. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: PhiBendTens
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for bending and tension.

Field: PhiCompTied
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for axial compression when the member has tie reinforcement.

Field: PhiCompSpir
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for axial compression when the member has spiral reinforcement.

Field: PhiShear
Field is Imported: Yes
The strength reduction factor for shear.

Table: Preferences - Concrete Design - BS8110 89

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Table: Preferences - Concrete Design - BS8110 97

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text
This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensionional interaction surface. This item must be greater than or equal to 4 and divisable by 4.

Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Table: Preferences - Concrete Design - CSA-A233-94

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensionional interaction surface. This item must be greater than or equal to 4 and divisable by 4.
Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PhiSteel
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for steel.

Field: PhiConc
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for concrete.

Table: Preferences - Concrete Design - EUROCODE 2-1992

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisable by 4.
Field: **NumPoints**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: **SRatioLimit**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: **Nu**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The Nu (Greek letter) factor.

Field: **GammaC**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The strength reduction factor GammaC.

Field: **GammaS**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The strength reduction factor GammaS.

**Table: Preferences - Concrete Design - Indian IS 456-2000**

Field: **THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.
Field: **NumCurves**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: **NumPoints**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: **SRatioLimit**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

---

**Table: Preferences - Concrete Design - Italian DM 14-2-92**

Field: **THDesign**
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: **NumCurves**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: **NumPoints**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The number of points used to define a two-dimensional interaction curve.  
This item must be greater than or equal to 11 and odd.

**Field: SRatioLimit**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

**Table: Preferences - Concrete Design - Mexican RCDF 2001**

**Field: THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

**Field: NumCurves**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

**Field: NumPoints**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

**Field: SRatioLimit**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.
Table: Preferences - Concrete Design - NZS 3101-95

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Table: Preferences - Concrete Design - UBC97

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: NumCurves
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of two-dimensional interaction curves used to make up the three-dimensional interaction surface. This item must be greater than or equal to 4 and divisible by 4.

Field: NumPoints
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The number of points used to define a two-dimensional interaction curve. This item must be greater than or equal to 11 and odd.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: SeisZone
Field is Imported: Yes
Format: Controlled by program
Units: Text

The seismic zone representing severity of seismic force. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: PhiBendTens
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for bending and tension.

Field: PhiCompTied
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor for axial compression when the member has tie reinforcement.

Field: PhiCompSpir
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The strength reduction factor for axial compression when the member has spiral reinforcement.

**Field: PhiShear**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The strength reduction factor for shear.

**Table: Preferences - Dimensional**

**Field: MergeTol**
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The auto merge tolerance (length). This is the basic tolerance value in the model. For example, when a joint is drawn within this tolerance length of another joint, the drawn joint is merged into the existing joint.

**Field: FineGrid**
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The plan fine grid spacing (length). When the fine grid snap option is activated this item sets the spacing of the snap grid.

**Field: Nudge**
- Field is Imported: Yes
- Format: Length (Section Dimensions section of form)
- Units: Length

The plan nudge value (length). When the plan nudge feature is used this item sets the distance that an item is nudged. In plan view you can nudge an object by selecting it and then pressing the Ctrl key and an arrow key simultaneously.

**Field: SelectTol**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The screen selection tolerance (pixels). When clicking to select an object your mouse pointer must be within this number of pixels to select the object.
Field: **SnapTol**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The screen snap tolerance (pixels). When using the snap options and moving your mouse pointer about the model, your mouse pointer must be within this number of pixels to snap to the object.

Field: **SLineThick**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The screen line thickness (pixels). The thickness of lines drawn on the screen. This item does not affect text, the bounding plane line or the aerial view.

Field: **PLineThick**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The printer line thickness (pixels). The thickness of lines and fonts drawn to the printer.

Field: **MaxFont**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The maximum graphic font size (points). The default font size is based on the average size of the objects in your model shown on the screen. As you zoom into your model the font size becomes proportionately larger. However, the font size is never made larger than the specified maximum graphic font size.

Field: **MinFont**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless

The minimum graphic font size (points). The default font size is based on the average size of the objects in your model shown on the screen. As you zoom out of your model the font size becomes proportionately smaller. However, the font size is never made smaller than the specified minimum graphic font size.
Field: AutoZoom
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The auto zoom step (percent). This is the size of the step used for the View menu > Zoom In One Step command and the View menu > Zoom Out One Step command. The magnification of all objects is increased or deceased by the specified percent.

Field: ShrinkFact
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The shrink factor (percent). This item works with the object shrink toggle which is set using the View menu > Set Display Options command or using the Object Shrink Toggle toolbar button. When object shrinking is toggled on all objects in the model are shown this specified percentage of their actual length.

Field: TextFileLen
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This is the maximum number of characters that the program will write on a single line in the .s2k text file before using a line continuation character and moving on to the next line.

Table: Preferences - Steel Design - AASHTO Steel 97

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: SRatioLimit
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The stress ratio limit to be used for acceptability. Stress ratios that are
   less than or equal to this value are considered acceptable.

Field: MaxIter
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The maximum number of automatic iterations the program will perform
   while designing frame elements with auto select section lists.

Table: Preferences - Steel Design - AISC-ASD89

Field: THDesign
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   This is either Envelopes or Step-by-Step indicating how time history
   results are considered in the design.

Field: FrameType
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

   The framing type. This is either Moment Frame or Braced Frame. This
   item is used for ductility considerations in the design.

Field: SRatioLimit
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless

   The stress ratio limit to be used for acceptability. Stress ratios that are
   less than or equal to this value are considered acceptable.

Field: MaxIter
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless
The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

### Table: Preferences - Steel Design - AISC-LRFD93

<table>
<thead>
<tr>
<th>Field</th>
<th>THDesign</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Text</td>
</tr>
</tbody>
</table>

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

<table>
<thead>
<tr>
<th>Field</th>
<th>FrameType</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Text</td>
</tr>
</tbody>
</table>

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

<table>
<thead>
<tr>
<th>Field</th>
<th>SeisZone</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Text</td>
</tr>
</tbody>
</table>

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

<table>
<thead>
<tr>
<th>Field</th>
<th>Omega0</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Unitless</td>
</tr>
</tbody>
</table>

Omega0 factor that is related to seismic force and ductility.

<table>
<thead>
<tr>
<th>Field</th>
<th>SRatioLimit</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Unitless</td>
</tr>
</tbody>
</table>

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

<table>
<thead>
<tr>
<th>Field</th>
<th>MaxIter</th>
<th>Field is Imported:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Controlled by program</td>
<td>Units:</td>
<td>Unitless</td>
</tr>
</tbody>
</table>
The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Table: Preferences - Steel Design - API RP2A-LRFD 97

Field: THDesign
Field is Imported: Yes  
Format: Controlled by program 
Units: Text  
This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes  
Format: Controlled by program 
Units: Text  
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes  
Format: Controlled by program 
Units: Unitless  
The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes  
Format: Controlled by program 
Units: Unitless  
The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Field: WaveHeight
Field is Imported: Yes  
Format: Absolute Distance (Structure Dimensions section of form) 
Units: Length  
Height of the design wave.

Field: WaveLength
Field is Imported: Yes  
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Length of the design wave.

Field: SWaterLevel
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Elevation of the still water level.

Field: SWaterDepth
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Depth of still water from sea bottom to the surface.

Field: WaterSpGrav
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Specific gravity of sea water.

Field: PipeFilled
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

Toggle to consider whether pipe is filled. This affects the calculation of hoop stress in pipe section. If the pipe is filled, then the hoop stress is zero because the water pressures inside and outside the pipe neutralize each other.

Table: Preferences - Steel Design - API RP2A-WSD2000

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Field: WaveHeight
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Height of the design wave.

Field: WaveLength
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Length of the design wave.

Field: SWaterLevel
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Elevation of the still water level.

Field: SWaterDepth
Field is Imported: Yes
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

Depth of still water from sea bottom to the surface.
Field: WaterSpGrav
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Specific gravity of sea water.

Field: PipeFilled
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

Toggle to consider whether pipe is filled. This affects the calculation of hoops stress in pipe section. If the pipe is filled, then the hoop stress is zero because the water pressures inside and outside the pipe neutralize each other.

Table: Preferences - Steel Design - ASCE 10-97

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Table: Preferences - Steel Design - BS5950 2000

**Field: THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: SRatioLimit**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: MaxIter**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Table: Preferences - Steel Design - BS5950 90

**Field: THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.
Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

Table: Preferences - Steel Design - CISC 95

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: MaxIter**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

### Table: Preferences - Steel Design - EUROCODE 3-1993

**Field: THDesign**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

**Field: FrameType**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: SRatioLimit**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: MaxIter**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.

**Field: GammaM0**
- Field is Imported: Yes
- Format: Controlled by program
Units: Unitless

The strength reduction factor GammaM0.

Field: GammaM1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The strength reduction factor GammaM1.

Table: Preferences - Steel Design - Italian UNI 10011

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.
Table: Preferences - Steel Design - UBC97-ASD

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: Yes
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.
Table: Preferences - Steel Design - UBC97-LRFD

Field: THDesign
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Envelopes or Step-by-Step indicating how time history results are considered in the design.

Field: FrameType
Field is Imported: Yes
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: Yes
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: SRatioLimit
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The stress ratio limit to be used for acceptability. Stress ratios that are less than or equal to this value are considered acceptable.

Field: MaxIter
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The maximum number of automatic iterations the program will perform while designing frame elements with auto select section lists.
**Table: Program Control**

Field: **ProgramName**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The program name.

Field: **Version**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The program version.

Field: **CurrUnits**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The current units at the time the database tables are created. Possible values for this include:
- lb, in, F
- lb, ft, F
- Kip, in, F
- Kip, ft, F
- KN, mm, C
- KN, m, C
- Kgf, mm, C
- Kgf, m, C
- N, mm, C
- N, m, C
- Ton, mm, C
- Ton, m, C
- KN, cm, C
- Kgf, cm, C
- N, cm, C
- Ton, cm, C
- Ton, cm, C

For import the letters DEG can be substituted for the degree symbol if desired.

Field: **SteelCode**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
The design code used for steel frame object design.

Field: ConcCode
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

The design code used for concrete frame object design.

Field: AlumCode
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

The design code used for aluminum frame object design.

Table: Project Information

Field: Item
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

The project information item.

Field: Data
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

The project information data for the associated item.

Table: Rebar Sizes

Field: RebarID
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text

ID (name) of reinforcing bar.

Field: Area
   Field is Imported: Yes
   Format: Rebar Area (Section Dimensions section of form)
   Units: Length2

Area of specified reinforcing bar.
Field: Diameter
Field is Imported: Yes
Format: Length (Section Dimensions section of form)
Units: Length

Diameter of specified reinforcing bar.

Table: Combination Definitions

Field: ComboName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the combination.

Field: ComboType
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Linear Add, Envelope, Abs Add or SRSS indicating the type of combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Linear Static, NonLin Static, Modal, Response Spectrum, Linear Modal Hist, NonLin Modal Hist, Linear Dynamic, NonLin Dynamic, Moving Load, Buckling, Steady State, or Response Combo indicating the type of the associated analysis case.

Field: CaseName
Field is Imported: Yes
Format: Controlled by program
Units: Text

The name of an analysis case or combination that is included in the combination.

Field: ScaleFactor
Field is Imported: Yes
Format: Controlled by program
Units: Unitless
A scale factor that is applied to the associated analysis case for the specified combination.

Field: SteelDesign
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the combination is selected for Steel design. Otherwise it is No.

Field: ConcDesign
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the combination is selected for Concrete design. Otherwise it is No.

Field: AlumDesign
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the combination is selected for Aluminum design. Otherwise it is No.

Field: ColdDesign
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the combination is selected for Cold Formed Steel design. Otherwise it is No.

Table: Section Cuts 1 - General

Field: CutName
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the section cut.

Field: Group
Field is Imported: Yes
Format: Controlled by program
Units: Text
Name of the group that defines the section cut.

Field: DefaultLoc
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if the section cut forces are reported at the program default location. It is No if the forces are reported at a user-specified location.

The default location is at the average coordinates of all of the joints included in the group that is used to define the section cut.

Field: GlobalX
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X-coordinate of the point where the section cut forces are reported.

Field: GlobalY
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y-coordinate of the point where the section cut forces are reported.

Field: GlobalZ
Field is Imported: Yes
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z-coordinate of the point where the section cut forces are reported.

Field: AngleA
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the section cut local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the section cut local coordinate system with respect to the global axes.
The orientation of the section cut local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.

Field: AngleB
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the section cut local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the section cut local coordinate system with respect to the global axes.

The orientation of the section cut local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.

Field: AngleC
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the section cut local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the section cut local coordinate system with respect to the global axes.

The orientation of the section cut local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.

Field: AdvanceAxes
Field is Imported: No
Format: Controlled by program
Units: Yes/No
This item is Yes if an advanced method is used to define the local axes reference vectors for the section cut. Otherwise it is No meaning that the default reference vectors are used.

**Table: Section Cuts 2 - Advanced Local Axes**

**Field: SectionCut**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Name of the section cut.

**Field: LocalPlane**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This item indicates the local plane that is to be determined by the plane reference vector. It is either 12, 13, 21, 23, 31, or 32.

**Field: AxOption1**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the axial reference vector.

**Field: AxCoordSys**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

The coordinate system used to define the axial reference vector coordinate direction and the axial user vector.

**Field: AxCoordDir**
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Axial coordinate direction taken at the output point in the specified coordinate system and used to define the axis reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.
Field: AxVecJt1
Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the specified section cut output location. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: AxVecJt2
Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the specified section cut output location. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: PlOption1
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the plane reference vector.

Field: PCoordSys
Field is Imported: Yes
Format: Controlled by program
Units: Text

The coordinate system used to define the plane reference vector coordinate directions and the plane user vector.

Field: CoordDir1
Field is Imported: Yes
Format: Controlled by program
Units: Text

The primary coordinate direction taken at the specified section cut output location in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.
Field: CoordDir2
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  The secondary coordinate direction taken at the specified section cut output location in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PIVecJt1
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  PIVecJt1 and PIVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the specified section cut output location. If both PIVecJt1 and PIVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PIVecJt2
  Field is Imported: Yes
  Format: Controlled by program
  Units: Text

  PIVecJt1 and PIVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the specified section cut output location. If both PIVecJt1 and PIVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: AxVecX
  Field is Imported: Yes
  Format: Controlled by program
  Units: Unitless

  The X direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: AxVecY
  Field is Imported: Yes
  Format: Controlled by program
  Units: Unitless

  The Y direction component of the axis reference vector in the coordinate system defined by the CoordSys item.
**Field: AxVecZ**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The Z direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

**Field: PlVecX**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

**Field: PlVecY**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

**Field: PlVecZ**

Field is Imported: Yes  
Format: Controlled by program  
Units: Unitless  

The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

**Table: Solid Auto Mesh Assignments**

**Field: Solid**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text  

False.

**Field: AutoMesh**

Field is Imported: Yes  
Format: Controlled by program  
Units: Yes/No
This item is Yes if the solid object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.

Field: Number1
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This the AutoMesh item is Yes, then the solid object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.

Field: Number2
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

This the AutoMesh item is Yes, then the solid object is to be (internally) automatically meshed into Number1 by Number2 elements by the program for analysis.

Field: Number3
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

Table: Solid Loads - Gravity

Field: Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: LoadCase
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.

Field: CoordSys
Field is Imported: Yes
Format: Controlled by program
Field: **MultiplierX**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The applied gravity load in the X-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierX scale factor.

Field: **MultiplierY**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The applied gravity load in the Y-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierY scale factor.

Field: **MultiplierZ**
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The applied gravity load in the Z-direction of the specified coordinate system is equal to the self weight of the object times the MultiplierZ scale factor.

**Table: Solid Loads - Pore Pressure**

Field: **Solid**
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: **LoadCase**
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of the load case to which the specified load applies.
Field: **Pressure**  
Field is Imported: Yes  
Format: Force/Area (Forces section of form)  
Units: Force/Length^2

The pore pressure load applied to the specified face of the Solid object.

Field: **JtPattern**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified pressure. If no joint pattern is specified then this item is reported as None.

### Table: Solid Loads - Surface Pressure

Field: **Solid**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of a Solid object.

Field: **LoadCase**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Label of the load case to which the specified load applies.

Field: **Face**  
Field is Imported: Yes  
Format: Controlled by program  
Units: Text

The face of the Solid object to which the pressure load is applied.

Field: **Pressure**  
Field is Imported: Yes  
Format: Force/Area (Forces section of form)  
Units: Force/Length^2

The surface pressure load applied to the specified face of the Solid object.
Field: JtPattern
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Joint Pattern of scale factors that multiply the specified pressure. If no joint pattern is specified then this item is reported as None.

**Table: Solid Loads - Temperature**

Field: Solid
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Solid object.

Field: LoadCase
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of the load case to which the specified load applies.

Field: Temp
- Field is Imported: Yes
- Format: Temperature (Forces section of form)
- Units: Temp

The temperature assignment to the Solid object.

Field: JtPattern
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.

**Table: Solid Local Axes Assignments 1 - Typical**

Field: Solid
- Field is Imported: Yes
- Format: Controlled by program
- Units: Text
Name of the solid object.

**Field: AngleA**

Field is Imported: Yes  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the solid local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the solid local coordinate system with respect to the global axes.

The orientation of the solid local coordinate system is obtained according to the following procedure:  (1) The local system is first rotated about its +3 axis by AngleA.  (2) The local system is next rotated about its resulting +2 axis by AngleB.  (3) The local system is lastly rotated about its resulting +1 axis by AngleC.  Note that the order in which these rotations are performed is important.

**Field: AngleB**

Field is Imported: Yes  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the solid local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the solid local coordinate system with respect to the global axes.

The orientation of the solid local coordinate system is obtained according to the following procedure:  (1) The local system is first rotated about its +3 axis by AngleA.  (2) The local system is next rotated about its resulting +2 axis by AngleB.  (3) The local system is lastly rotated about its resulting +1 axis by AngleC.  Note that the order in which these rotations are performed is important.

**Field: AngleC**

Field is Imported: Yes  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

AngleA, AngleB and AngleC define the rotation of the solid local coordinate system relative to the coordinate system determined from the reference vectors. In the case where the default reference vectors are used, the angles define the orientation of the solid local coordinate system with respect to the global axes.
The orientation of the solid local coordinate system is obtained according to the following procedure: (1) The local system is first rotated about its +3 axis by AngleA. (2) The local system is next rotated about its resulting +2 axis by AngleB. (3) The local system is lastly rotated about its resulting +1 axis by AngleC. Note that the order in which these rotations are performed is important.

**Field: AdvanceAxes**

Field is Imported: No  
Format: Controlled by program  
Units: Yes/No

This item is Yes if an advanced method is used to define the local axes reference vectors for the solid object. Otherwise it is No meaning that the default reference vectors are used.

In the default system the solid object positive local 1, 2 and 3 axes are parallel to the global positive X, Y and Z axes, respectively.

In the advanced system the solid object local axes are defined with respect to user-defined reference vectors. Note that when the advanced system is used, the specified Angle is applied to the local axes orientation defined by the user specified reference vectors.

**Table: Solid Local Axes Assignments 2 - Advanced**

**Field: Solid**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

Name of the solid object.

**Field: LocalPlane**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

This item indicates the local plane that is to be determined by the plane reference vector. It is either 12, 13, 21, 23, 31, or 32.

**Field: AxOption1**

Field is Imported: Yes  
Format: Controlled by program  
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the axial reference vector.
Field: **AxCoordSys**

Field is Imported: Yes
Format: Controlled by program
Units: Text

The coordinate system used to define the axial reference vector coordinate direction and the axial user vector.

Field: **AxCoordDir**

Field is Imported: Yes
Format: Controlled by program
Units: Text

Axial coordinate direction taken at the joint in the specified coordinate system and used to define the axis reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: **AxVecJt1**

Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the center of the solid object. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: **AxVecJt2**

Field is Imported: Yes
Format: Controlled by program
Units: Text

AxVecJt1 and AxVecJt2 are the labels of two joints that define the axis reference vector. If one of these items is reported as zero then it means the center of the solid object. If both of these items is reported as zero then this option is not used to define the axis reference vector.

Field: **PlOption1**

Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either Coord Dir, Two Joints or User Vector indicating the first method used to determine the plane reference vector.

Field: **PlCoordSys**

Field is Imported: Yes
Format: Controlled by program
The coordinate system used to define the plane reference vector coordinate directions and the plane user vector.

Field: CoordDir1
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
   The primary coordinate direction taken at the joint in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: CoordDir2
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
   The secondary coordinate direction taken at the joint in the specified coordinate system. It is used to determine the plane reference vector. It may be one of +X, +Y, +Z, +CR, +CA, +CZ, +SB, +SA, +SR, -X, -Y, -Z, -CR, -CA, -CZ, -SB, -SA, -SR.

Field: PlVecJt1
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
   PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the center of the solid object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: PlVecJt2
   Field is Imported: Yes
   Format: Controlled by program
   Units: Text
   PlVecJt1 and PlVecJt2 are the labels of two joints that define the plane reference vector. Either of these items may be specified as 0 to indicate the center of the solid object. If both PlVecJt1 and PlVecJt2 are specified as 0 then they are not used to define the plane reference vector.

Field: AxVecX
   Field is Imported: Yes
   Format: Controlled by program
   Units: Unitless
The X direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: AxVecY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: AxVecZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the axis reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecX
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The X direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecY
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Y direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Field: PlVecZ
Field is Imported: Yes
Format: Controlled by program
Units: Unitless

The Z direction component of the plane reference vector in the coordinate system defined by the CoordSys item.

Table: Solid Material Temperatures

Field: Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field:  Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The Solid object material temperature.

Field:  JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.

Table: Solid Property Assignments

Field:  Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field:  SolidProp
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the solid property assigned to the solid section.

Table: Solid Property Definitions

Field:  SolidProp
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the solid property assigned to the solid section.
Field: Material
Field is Imported: Yes
Format: Controlled by program
Units: Text

Name of the material property assigned to the solid section.

Field: MatAngleA
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The material angle A assignment to the Solid object.

Field: MatAngleB
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The material angle B assignment to the Solid object.

Field: MatAngleC
Field is Imported: Yes
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The material angle C assignment to the Solid object.

Field: InComp
Field is Imported: Yes
Format: Controlled by program
Units: Yes/No

This item is Yes if incompatible bending modes are included in the stiffness formulation. Otherwise it is No.

In general, incompatible modes significantly improve the bending behavior of the object.

Field: Color
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either a defined color or an integer representation of the color associated with the property.

The possible defined colors are Black, Red, Orange, Yellow, Green, Cyan, Blue, Magenta, White, Dark Red, Dark Yellow, Dark Green, Dark
Cyan, Dark Blue, Dark Magenta, Gray1, Gray2, Gray3, Gray4, Gray5, Gray6, Gray7 and Gray8. Gray1 is a light gray and Gray8 is a dark gray.

Field: TotalWt
Field is Imported: No
Format: Weight (Mass and Weight section of form)
Units: Force

Total weight of all objects in the model that are assigned the specified solid property.

Field: TotalMass
Field is Imported: No
Format: Mass (Mass and Weight section of form)
Units: Force-Sec2/Length

Total mass of all objects in the model that are assigned the specified solid property.

Table: Solid Reference Temperatures

Field: Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: Temp
Field is Imported: Yes
Format: Temperature (Forces section of form)
Units: Temp

The Solid object reference temperature.

Field: JtPattern
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Joint Pattern of scale factors that multiply the specified temperature. If no joint pattern is specified then this item is reported as None.
Table: Solid Spring Assignments

Field: Solid
Field is Imported: Yes
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: Face
Field is Imported: Yes
Format: Controlled by program
Units: Text

The face of the solid object to which the specified springs are applied.

Field: Dir
Field is Imported: Yes
Format: Controlled by program
Units: Text

This is either 1, 2 or 3 indicating the solid local axes direction in which the springs are oriented.

Field: Stiffness
Field is Imported: Yes
Format: Trans Stiffness/Area (Stiffness section of form)
Units: Force/Length/Length2

Spring stiffness per unit area of the specified face of the solid object in the direction specified.

Table: Summary - Area Assignments

Field: Area
Field is Imported: No
Format: Controlled by program
Units: Text

Label of an area object.

Field: Section
Field is Imported: No
Format: Controlled by program
Units: Text

Label of the area section property assigned to the specified area object.
Field: StiffMod
   Field is Imported: No
   Format: Controlled by program
   Units: Yes/No

   This item is Yes if there are stiffness modifier assignments to the Area object. Otherwise it is No.

Field: LocalAxes
   Field is Imported: No
   Format: Controlled by program
   Units: Yes/No

   This item is Yes if there are local axes assignments to the Area object. Otherwise it is No.

Field: Springs
   Field is Imported: No
   Format: Controlled by program
   Units: Yes/No

   This item is Yes if there are spring assignments to the Area object. Otherwise it is No.

Field: MassPerArea
   Field is Imported: No
   Format: Mass/Area (Mass and Weight section of form)
   Units: Force-Sec²/Length³

   Added mass per unit area applied to the area object.

Field: AutoMesh
   Field is Imported: No
   Format: Controlled by program
   Units: Yes/No

   This item is Yes if the area object is (internally) automatically meshed by the program for analysis.

Field: MatTemp
   Field is Imported: No
   Format: Temperature (Forces section of form)
   Units: Temp

   The material temperature associated with the Area object.

Field: GravLoads
   Field is Imported: No
   Format: Controlled by program
Units: Yes/No

This item is Yes if there are gravity load assignments to the Area object. Otherwise it is No.

Field: UnifLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are uniform load assignments to the Area object. Otherwise it is No.

Field: UnifLoadsFr
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are uniform load to frames assignments to the Area object. Otherwise it is No.

Field: SPres Loads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are surface pressure load assignments to the Area object. Otherwise it is No.

Field: PP res Loads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are pore pressure load assignments to the Area object. Otherwise it is No.

Field: Temp Loads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are temperature load assignments to the Area object. Otherwise it is No.

Field: Ref Temp
Field is Imported: No
Format: Temperature (Forces section of form)
Units: Temp
The reference temperature associated with the Area object.

Field: RotateLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are rotate load assignments to the Area object. Otherwise it is No.

Field: WindCoeffs
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are wind pressure coefficients assignments to the Area object. Otherwise it is No.

Field: AreaArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

Area of the Area object.

Field: Perimeter
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

Perimeter of the Area object.

Field: Volume
Field is Imported: No
Format: Length3 (Section Dimensions section of form)
Units: Length3

Volume of the Area object.

Field: CentroidX
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global X coordinate of the centroid of the Area object.

Field: CentroidY
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Y coordinate of the centroid of the Area object.

Field: CentroidZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Z coordinate of the centroid of the Area object.

Table: Summary - Frame Assignments

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: AnalSect
Field is Imported: No
Format: Controlled by program
Units: Text

This is the name of the analysis section assigned to the frame object. The analysis section is the frame section property that was used in the last analysis performed. If no analysis has been performed then it is the name of the frame section originally assigned to the frame object.

Field: PropMods
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are property modifier assignments to the Frame object. Otherwise it is No.

Field: Releases
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are end release assignments to the Frame object. Otherwise it is No.
Field: LocalAxes
  Field is Imported: No
  Format: Controlled by program
  Units: Yes/No

  This item is Yes if there are local axes assignments to the Frame object. Otherwise it is No.

Field: InsertPoint
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  This is Default if the default user insertion point (with no joint offsets) is specified. Otherwise it is User Defined.

Field: EndOffsets
  Field is Imported: No
  Format: Controlled by program
  Units: Yes/No

  This item is Yes if there are end offset assignments to the Frame object. Otherwise it is No.

Field: MinNumSta
  Field is Imported: No
  Format: Controlled by program
  Units: Unitless

  The minimum number of output stations along the frame object. If the MaxStaSpcg item is specified for the frame object then this item is blank.

Field: MaxStaSpcg
  Field is Imported: No
  Format: Absolute Distance (Structure Dimensions section of form)
  Units: Length

  The maximum spacing between output stations along the frame object. If the MinNumSta item is specified for the frame object then this item is blank.

Field: PrestresPat
  Field is Imported: No
  Format: Controlled by program
  Units: Yes/No

  This item is Yes if there are prestress pattern assignments to the Frame object. Otherwise it is No.
Field: PrestresMul
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are prestress multiplier assignments to the Frame object. Otherwise it is No.

Field: PDeltaForce
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are p-delta force assignments to the Frame object. Otherwise it is No.

Field: CableParams
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are cable parameters assignments to the Frame object. Otherwise it is No.

Field: TCLimit
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are tension/compression limits assignments to the Frame object. Otherwise it is No.

Field: NLHinges
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are nonlinear hinge assignments to the Frame object. Otherwise it is No.

Field: Springs
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are spring assignments to the Frame object. Otherwise it is No.
Field: **MassPerLen**
Field is Imported: No
Format: Mass/Length (Mass and Weight section of form)
Units: Force-Sec2/Length2

Added mass per unit length applied to the frame object, if any.

Field: **AutoDivide**
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if the frame object is to be automatically subdivided. If the frame object is NOT to be automatically subdivided then this item is No.

Field: **MatTemp**
Field is Imported: No
Format: Temperature (Forces section of form)
Units: Temp

The material temperature associated with the Frame object.

Field: **GravLoads**
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are gravity load assignments to the Frame object. Otherwise it is No.

Field: **PointLoads**
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are point load assignments to the Frame object. Otherwise it is No.

Field: **DistLoads**
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are distributed load assignments to the Frame object. Otherwise it is No.

Field: **TempLoads**
Field is Imported: No
Field: **RefTemp**

Field is Imported: No  
Format: Temperature (Forces section of form)  
Units: Temp

The reference temperature associated with the Frame object.

Field: **SteelOWrite**

Field is Imported: No  
Format: Controlled by program  
Units: Yes/No

This item is Yes if there are steel frame design overwrites assignments to the Frame object. Otherwise it is No.

Field: **ConcOWrite**

Field is Imported: No  
Format: Controlled by program  
Units: Yes/No

This item is Yes if there are concrete frame design overwrites assignments to the Frame object. Otherwise it is No.

Field: **AlumOWrite**

Field is Imported: No  
Format: Controlled by program  
Units: Yes/No

This item is Yes if there are aluminum frame design overwrites assignments to the Frame object. Otherwise it is No.

Field: **ColdOWrite**

Field is Imported: No  
Format: Controlled by program  
Units: Yes/No

This item is Yes if there are coldformed frame design overwrites assignments to the Frame object. Otherwise it is No.

Field: **Length**

Field is Imported: No  
Format: Length (Section Dimensions section of form)  
Units: Length
Length of the Frame object.

**Field: CentroidX**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global X coordinate of the centroid of the Frame object.

**Field: CentroidY**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global Y coordinate of the centroid of the Frame object.

**Field: CentroidZ**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global Z coordinate of the centroid of the Frame object.

**Table: Summary - Joint Assignments**

**Field: Joint**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a joint.

**Field: Constraints**
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is Yes if there are constraint assignments to the specified joint. Otherwise it is No.

**Field: Restraints**
- Field is Imported: No
- Format: Controlled by program
- Units: Yes/No

This item is Yes if there are restraint assignments to the specified joint. Otherwise it is No.
Field: LocalAxes
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are joint local axes assignments to the specified joint. Otherwise it is No.

Field: Springs
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are joint spring assignments to the specified joint. Otherwise it is No.

Field: AddedMass
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are added mass assignments to the specified joint. Otherwise it is No.

Field: PanelZone
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are panel zone assignments to the specified joint. Otherwise it is No.

Field: JtPattern
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are joint pattern assignments to the specified joint. Otherwise it is No.

Field: JointForce
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are joint force assignments to the specified joint. Otherwise it is No.
Field: GroundDispl
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are ground displacement assignments to the specified joint. Otherwise it is No.

Note that the joint must be restrained, or have a spring, in the same direction (degree of freedom) as the ground displacement for the effect of the ground displacement to be included in the analysis.

Table: Summary - Link Assignments

Field: Link
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Link object.

Field: LinkType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Linear, MultiLinear, Gap, Hook, Damper, Plastic (Wen), Rubber Isolator, or Friction Isolator indicating the type of link object.

Field: LinkJoints
Field is Imported: No
Format: Controlled by program
Units: Text

This is either SingleJoint or TwoJoint indicating the type of link object.

Field: LinkProp
Field is Imported: No
Format: Controlled by program
Units: Text

The name of a link property.

Field: LocalAxes
Field is Imported: No
Format: Controlled by program
Units: Yes/No
This item is Yes if there are local axes assignments to the Link object. Otherwise it is No.

Field: GravLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are gravity load assignments to the Link object. Otherwise it is No.

Field: Length
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

Length of the Link object.

Field: CentroidX
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global X coordinate of the centroid of the Link object.

Field: CentroidY
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Y coordinate of the centroid of the Link object.

Field: CentroidZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Z coordinate of the centroid of the Link object.

Table: Summary - Solid Assignments

Field: Solid
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Solid object.
Field: SolidProp
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the solid property assigned to the solid section.

Field: Springs
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are spring assignments to the Solid object. Otherwise it is No.

Field: AutoMesh
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if the solid object is (internally) automatically meshed by the program for analysis.

Field: MatTemp
Field is Imported: No
Format: Temperature (Forces section of form)
Units: Temp

The material temperature associated with the Solid object.

Field: GravLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are gravity load assignments to the Solid object. Otherwise it is No.

Field: SPres Loads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are surface pressure load assignments to the Solid object. Otherwise it is No.

Field: PPresLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are pore pressure load assignments to the Solid object. Otherwise it is No.

Field: TempLoads
Field is Imported: No
Format: Controlled by program
Units: Yes/No

This item is Yes if there are temperature load assignments to the Solid object. Otherwise it is No.

Field: RefTemp
Field is Imported: No
Format: Temperature (Forces section of form)
Units: Temp

The reference temperature associated with the Solid object.

Field: Volume
Field is Imported: No
Format: Length3 (Section Dimensions section of form)
Units: Length3

Volume of the Solid object.

Field: CentroidX
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global X coordinate of the centroid of the Solid object.

Field: CentroidY
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Y coordinate of the centroid of the Solid object.

Field: CentroidZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

Global Z coordinate of the centroid of the Solid object.
Table: Base Reactions

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlobalFX</td>
<td>The base reaction force component in the global X direction.</td>
</tr>
<tr>
<td>GlobalFY</td>
<td>The base reaction force component in the global Y direction.</td>
</tr>
<tr>
<td>GlobalFZ</td>
<td>The base reaction force component in the global Z direction.</td>
</tr>
<tr>
<td>GlobalMX</td>
<td>The base reaction moment component about the global X axis.</td>
</tr>
<tr>
<td>GlobalMY</td>
<td>The base reaction moment component about the global Y axis.</td>
</tr>
<tr>
<td>GlobalMZ</td>
<td>The base reaction moment component about the global Z axis.</td>
</tr>
<tr>
<td>GlobalX</td>
<td>The global X coordinate of the point where the base reaction is reported.</td>
</tr>
</tbody>
</table>
Field: GlobalY
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point where the base reaction is reported.

Field: GlobalZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point where the base reaction is reported.

Table: Buckling Factors

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

Field: ScaleFactor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Table: Element Deformations - Links

Field: Link
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Link object.
Field: LinkElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of a Link element associated with the specified Link object. For analysis, the Link object is internally modelled using one or more Link elements.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.
For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: U1**
- Field is Imported: No
- Format: Translational Displ (Displacements section of form)
- Units: Length

The translational deformation of the link object in the link local 1 axis direction.

**Field: U2**
- Field is Imported: No
- Format: Translational Displ (Displacements section of form)
- Units: Length

The translational deformation of the link object in the link local 2 axis direction.

**Field: U3**
- Field is Imported: No
- Format: Translational Displ (Displacements section of form)
- Units: Length

The translational deformation of the link object in the link local 3 axis direction.

**Field: R1**
- Field is Imported: No
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The rotational deformation of the link object about the link local 1 axis.

**Field: R2**
- Field is Imported: No
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The rotational deformation of the link object about the link local 2 axis.

**Field: R3**
- Field is Imported: No
- Format: Rotational Displ (Displacements section of form)
- Units: Radians
The rotational deformation of the link object about the link local 3 axis.

**Table: Element Deformations - Panel Zones**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LinkElem</strong></td>
<td>Number of the link element used to model the panel zone. Field is Imported: No</td>
</tr>
<tr>
<td><strong>Joint</strong></td>
<td>Name of a joint object to which the panel zone is assigned. Field is Imported: No</td>
</tr>
<tr>
<td><strong>OutputCase</strong></td>
<td>The name of an analysis case or combination. Field is Imported: No</td>
</tr>
<tr>
<td><strong>CaseType</strong></td>
<td>The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination. Field is Imported: No</td>
</tr>
<tr>
<td><strong>Step</strong></td>
<td>The contents of this field vary depending on the type of output case considered. Field is Imported: No</td>
</tr>
</tbody>
</table>

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.
For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: U1**

Field is Imported: No

Format: Translational Displ (Displacements section of form)

Units: Length

The translational deformation of the panel zone in the panel zone local 1 axis direction.

**Field: U2**

Field is Imported: No

Format: Translational Displ (Displacements section of form)

Units: Length

The translational deformation of the panel zone in the panel zone local 2 axis direction.

**Field: U3**

Field is Imported: No

Format: Translational Displ (Displacements section of form)

Units: Length

The translational deformation of the panel zone in the panel zone local 3 axis direction.

**Field: R1**

Field is Imported: No

Format: Rotational Displ (Displacements section of form)

Units: Radians

The rotational deformation of the panel zone about the panel zone local 1 axis.
Field: R2
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

The rotational deformation of the panel zone about the panel zone local 2 axis.

Field: R3
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

The rotational deformation of the panel zone about the panel zone local 3 axis.

Table: Element Energy

Field: ObjectLabel
Field is Imported: No
Format: Controlled by program
Units: Text

Label of an object. In the case of a panel zone this is the label of the joint object to which the panel zone is assigned.

Field: ObjectType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Frame, Area, Solid, Link or Panel Zone indicating the type of object.

Field: EENamedSet
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the element energy named set associated with this output.

Field: ForceCase
Field is Imported: No
Format: Controlled by program
Units: Text

The analysis case used for the force when computing the virtual work.
Field: DisplCase
Field is Imported: No
Format: Controlled by program
Units: Text

The analysis case used for the displacement when computing the virtual work.

Field: VirtualWork
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The virtual work computed for the associated object.

Field: Volume
Field is Imported: No
Format: Length3 (Section Dimensions section of form)
Units: Length3

The volume of the associated object.

Field: NormWork
Field is Imported: No
Format: Controlled by program
Units: Percent

The normalized virtual work for the object. This is computed as:

\[ \frac{(VW/Volume)}{\text{Max}(VW/Volume)} \times 100 \]

where VW is the virtual work for an object, Volume is the volume of an object, and Max indicates the object with the maximum VW/Volume value.

Table: Element Forces - Area Shells

Field: Area
Field is Imported: No
Format: Controlled by program
Units: Text

Label of an area object.

Field: AreaElem
Field is Imported: No
Format: Controlled by program
Units: Text
Number of an area element associated with the specified area object. For analysis, the area object is internally modelled using one or more area elements.

Field: ShellType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Shell-Thick, Shell-Thin, Plate-Thick, Plate-Thin or Membrane indicating the type of shell (area) element.

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint object at which the Area element forces are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.
For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: F11**
- Field is Imported: No
- Format: Force/Length (Forces section of form)
- Units: Force/Length

The area element internal F11 membrane direct force per length reported in the area element local coordinate system.

**Field: F22**
- Field is Imported: No
- Format: Force/Length (Forces section of form)
- Units: Force/Length

The area element internal F22 membrane direct force per length reported in the area element local coordinate system.

**Field: F12**
- Field is Imported: No
- Format: Force/Length (Forces section of form)
- Units: Force/Length

The area element internal F12 membrane shear force per length reported in the area element local coordinate system.

**Field: FMax**
- Field is Imported: No
- Format: Force/Length (Forces section of form)
- Units: Force/Length

The maximum principal membrane force.
Field: FMin
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The minimum principal membrane force.

Field: FAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the area local 1 axis to the direction of the maximum principal membrane force.

Field: FVM
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The area element internal Von Mises membrane force per length.

Field: M11
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The area element internal M11 plate bending moment per length reported in the area element local coordinate system.

Field: M22
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The area element internal M22 plate bending moment per length reported in the area element local coordinate system.

Field: M12
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The area element internal M12 plate twisting moment per length reported in the area element local coordinate system.

Field: MMax
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The maximum principal plate moment.

Field: MMin
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The minimum principal plate moment.

Field: MAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the area local 1 axis to the direction of the maximum principal plate moment.

Field: V13
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The area element internal V13 plate transverse shear force per length reported in the area element local coordinate system.

Field: V23
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The area element internal V23 plate transverse shear force per length reported in the area element local coordinate system.

Field: VMax
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The maximum plate transverse shear force. It is equal to the square root of the sum of the squares of V13 and V23.

Field: VAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees
The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the area local 1 axis to the direction of Vmax.

**Table: Element Forces - Frames**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: Station**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

An output station location (measured from the I-end) along the frame object.

**Field: OutputCase**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of an analysis case or combination.

**Field: CaseType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

**Field: Step**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.
For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field:  P
Field is Imported:  No
Format:  Force (Forces section of form)
Units:  Force

Axial force in the frame local 1 axis direction at the specified station.

Field:  V2
Field is Imported:  No
Format:  Force (Forces section of form)
Units:  Force

Shear force in the frame local 2 axis direction at the specified station.

Field:  V3
Field is Imported:  No
Format:  Force (Forces section of form)
Units:  Force

Shear force in the frame local 3 axis direction at the specified station.

Field:  T
Field is Imported:  No
Format:  Moment (Forces section of form)
Units:  Force-Length

Torsional moment about the frame local 1 axis at the specified station.
Field: M2  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length  

Bending moment about the frame local 2 axis at the specified station.

Field: M3  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length  

Bending moment about the frame local 3 axis at the specified station.

**Table: Element Forces - Links**

Field: Link  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Link object.

Field: LinkElem  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Number of a Link element associated with the specified Link object. For analysis, the Link object is internally modelled using one or more Link elements.

Field: Station  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either I-End or J-End indicating the location of the reported forces.

Field: OutputCase  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The name of an analysis case or combination.
Field: **CaseType**
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: **Step**
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: **P**
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Axial force in the link local 1 axis direction at the specified station.

Field: **V2**
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Shear force in the link local 2 axis direction at the specified station.

Field: V3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Shear force in the link local 3 axis direction at the specified station.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Torsional moment about the link local 1 axis at the specified station.

Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Bending moment about the link local 2 axis at the specified station.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Bending moment about the link local 3 axis at the specified station.

Table: Element Forces - Panel Zones

Field: LinkElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of the link element used to model the panel zone.

Field: JointI
Field is Imported: No
Format: Controlled by program
Units: Text
Name of the joint object at the I-End of the panel zone link element. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: JointJ
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint object at the I-End of the panel zone link element. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.
For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: P**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force
- Axial force in the panel zone local 1 axis direction.

**Field: V2**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force
- Shear force in the panel zone local 2 axis direction.

**Field: V3**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force
- Shear force in the panel zone local 3 axis direction.

**Field: T**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length
- Torsional moment about the panel zone local 1 axis.

**Field: M2**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length
- Bending moment about the panel zone local 2 axis.

**Field: M3**
- Field is Imported: No
- Format: Moment (Forces section of form)
Units: Force-Length

Bending moment about the panel zone local 3 axis.

Table: Element Joint Forces - Areas

Field: Area
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Label of an area object.

Field: AreaElem
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Number of an area element associated with the specified area object. For analysis, the area object is internally modelled using one or more area elements.

Field: Joint
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The name of the joint object at which the Area element joint forces are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The name of an analysis case or combination.

Field: CaseType
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.
Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: F1
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Area joint force at the specified joint in the joint local 1 direction.

Field: F2
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Area joint force at the specified joint in the joint local 2 direction.

Field: F3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Area joint force at the specified joint in the joint local 3 direction.
Field: M1
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Area joint moment at the specified joint about the joint local 1 axis.

Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Area joint moment at the specified joint about the joint local 2 axis.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Area joint moment at the specified joint about the joint local 3 axis.

Table: Element Joint Forces - Frames

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: FrameElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of a Frame element associated with the specified Frame object. For analysis, the Frame object is internally modelled using one or more Frame elements.

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint object at which the Frame element joint forces are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.
Field: **OutputCase**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

  The name of an analysis case or combination.

Field: **CaseType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

  The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

  The contents of this field vary depending on the type of output case considered.

  For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

  For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

  For modal cases this field reports the mode number.

  For buckling factors this field reports the buckling mode number.

  For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

  For double-valued combinations this field reports that the output is a Max or Min value.

  For moving load cases this field reports the force correspondence if it has been requested.

Field: **F1**

- Field is Imported: No
- Format: Force (Forces section of form)
Units: Force

Frame joint force at the specified joint in the joint local 1 direction.

Field: F2
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Frame joint force at the specified joint in the joint local 2 direction.

Field: F3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Frame joint force at the specified joint in the joint local 3 direction.

Field: M1
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Frame joint moment at the specified joint about the joint local 1 axis.

Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Frame joint moment at the specified joint about the joint local 2 axis.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Frame joint moment at the specified joint about the joint local 3 axis.

Table: Element Joint Forces - Links

Field: Link
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a link object, or, in the case of a panel zone, the subscript PZ followed by the label of the joint object to which the panel zone is assigned.

Field: **LinkElem**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Number of a Link element associated with the specified Link object. For analysis, the Link object is internally modelled using one or more Link elements.

Field: **Joint**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint object at which the Link element joint forces are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: **OutputCase**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of an analysis case or combination.

Field: **CaseType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.
For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: F1
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force
   Link joint force at the specified joint in the joint local 1 direction.

Field: F2
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force
   Link joint force at the specified joint in the joint local 2 direction.

Field: F3
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force
   Link joint force at the specified joint in the joint local 3 direction.

Field: M1
   Field is Imported: No
   Format: Moment (Forces section of form)
   Units: Force-Length
   Link joint moment at the specified joint about the joint local 1 axis.
Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Link joint moment at the specified joint about the joint local 2 axis.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Link joint moment at the specified joint about the joint local 3 axis.

Table: Element Joint Forces - Solids

Field: Solid
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: SolidElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of a Solid element associated with the specified Solid object.
For analysis, the Solid object is internally modelled using one or more Solid elements.

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint object at which the Solid element joint forces are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.
Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: F1
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Solid joint force at the specified joint in the joint local 1 direction.

Field: F2
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Solid joint force at the specified joint in the joint local 2 direction.

Field: F3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Solid joint force at the specified joint in the joint local 3 direction.

Field: M1
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Solid joint moment at the specified joint about the joint local 1 axis.

Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Solid joint moment at the specified joint about the joint local 2 axis.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Solid joint moment at the specified joint about the joint local 3 axis.

Table: Element Stresses - Area Asolids

Field: Area
Field is Imported: No
Format: Controlled by program
Units: Text

Label of an area object.

Field: AreaElem
Field is Imported: No
Format: Controlled by program
Units: Text
Number of an area element associated with the specified area object. For analysis, the area object is internally modelled using one or more area elements.

Field: Joint

Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint at which the Area element stresses are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase

Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType

Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step

Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.
For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: S11
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element internal S11 stress, at the specified joint, reported in the area element local coordinate system.

Field: S22
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element internal S22 stress, at the specified joint, reported in the area element local coordinate system.

Field: S33
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element internal S22 stress, at the specified joint, reported in the area element local coordinate system.

Field: S12
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element internal S12 stress, at the specified joint, reported in the area element local coordinate system.

Field: SMax
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element maximum principal stress at the specified joint.
Field: SMin
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The area element minimum principal stress at the specified joint.

Field: SAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the Area element local 1 axis to the direction of the maximum principal stress at the specified joint.

Field: SVM
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The asolid (area) element Von Mises stress at the specified joint.

**Table: Element Stresses - Area Planes**

Field: Area
Field is Imported: No
Format: Controlled by program
Units: Text

Label of an area object.

Field: AreaElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of an area element associated with the specified area object. For analysis, the area object is internally modelled using one or more area elements.

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text
The name of the joint at which the Area element stresses are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

**Field: OutputCase**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The name of an analysis case or combination.

**Field: CaseType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

**Field: Step**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.
Field: S11
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element internal S11 stress, at the specified joint, reported in the area element local coordinate system.

Field: S22
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element internal S22 stress, at the specified joint, reported in the area element local coordinate system.

Field: S33
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element internal S22 stress, at the specified joint, reported in the area element local coordinate system.

Field: S12
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element internal S12 stress, at the specified joint, reported in the area element local coordinate system.

Field: SMax
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element maximum principal stress at the specified joint.

Field: SMin
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element minimum principal stress at the specified joint.

Field: SAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the Area element local 1 axis to the direction of the maximum principal stress at the specified joint.

Field: SVM  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

The plane (area) element Von Mises stress at the specified joint.

Table: Element Stresses - Area Shells

Field: Area  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of an area object.

Field: AreaElem  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Number of an area element associated with the specified area object. For analysis, the area object is internally modelled using one or more area elements.

Field: ShellType  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Shell-Thick, Shell-Thin, Plate-Thick, Plate-Thin or Membrane indicating the type of shell (area) element.

Field: Joint  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The name of the joint at which the Area element stresses are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.
Field: **OutputCase**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The name of an analysis case or combination.

Field: **CaseType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: **S11Top**

Field is Imported: No  
Format: Stress Output (Stresses section of form)
The area element internal $S_{11}$ stress, at the top of the element, at the specified joint, reported in the area element local coordinate system.

Field: S22Top
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length$^2$

The area element internal $S_{22}$ stress, at the top of the element, at the specified joint, reported in the area element local coordinate system.

Field: S12Top
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length$^2$

The area element internal $S_{12}$ stress, at the top of the element, at the specified joint, reported in the area element local coordinate system.

Field: SMaxTop
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length$^2$

The area element maximum principal stress, at the top of the element, at the specified joint.

Field: SMinTop
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length$^2$

The area element minimum principal stress, at the top of the element, at the specified joint.

Field: SAngleTop
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the Area element local 1 axis to the direction of the maximum principal stress at the top of the element, at the specified joint.

Field: SVMTop
Field is Imported: No
Format: Stress Output (Stresses section of form)
The area element Von Mises stress, at the top of the element, at the specified joint.

Field: **S11Bot**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length$^2$

The area element internal S11 stress, at the bottom of the element, at the specified joint, reported in the area element local coordinate system.

Field: **S22Bot**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length$^2$

The area element internal S22 stress, at the bottom of the element, at the specified joint, reported in the area element local coordinate system.

Field: **S12Bot**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length$^2$

The area element internal S12 stress, at the bottom of the element, at the specified joint, reported in the area element local coordinate system.

Field: **SMaxBot**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length$^2$

The area element maximum principal stress, at the bottom of the element, at the specified joint.

Field: **SMinBot**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length$^2$

The area element minimum principal stress, at the bottom of the element, at the specified joint.

Field: **SAngleBot**
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees
The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the Area element local 1 axis to the direction of the maximum principal stress at the bottom of the element, at the specified joint.

Field: SVMBot
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element Von Mises stress, at the top of the element, at the specified joint.

Field: S13Avg
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element average S13 out-of-plane shear stress at the specified joint.

Field: S23Avg
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element average S23 out-of-plane shear stress at the specified joint.

Field: SMaxAvg
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The area element maximum average out-of-plane shear stress. It is equal to the square root of the sum of the squares of S13Avg and S23Avg.

Field: SAngleAvg
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise (when the local 3 axis is pointing toward you) from the area element local 1 axis to the direction of SMaxAvg.
Table: Element Stresses - Solids

Field: Solid
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Solid object.

Field: SolidElem
Field is Imported: No
Format: Controlled by program
Units: Text

Number of a Solid element associated with the specified Solid object. For analysis, the Solid object is internally modelled using one or more Solid elements.

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the joint at which the Solid element stresses are reported. If no joint object exists at this location then the number of the joint element at that location is reported in parenthesis.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text
The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: S11**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The Solid element internal S11 stress at the specified joint reported in the Solid element local coordinate system.

**Field: S22**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The Solid element internal S22 stress at the specified joint reported in the Solid element local coordinate system.

**Field: S33**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The Solid element internal S33 stress at the specified joint reported in the Solid element local coordinate system.
Field: S12  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element internal S12 stress at the specified joint reported in the Solid element local coordinate system.

Field: S13  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element internal S13 stress at the specified joint reported in the Solid element local coordinate system.

Field: S23  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element internal S23 stress at the specified joint reported in the Solid element local coordinate system.

Field: SMax  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element maximum principal stress at the specified joint.

Field: SMid  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element middle principal stress at the specified joint.

Field: SMin  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The Solid element minimum principal stress at the specified joint.

Field: SVM  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2
The Solid element Von Mises stress at the specified joint.

Field: DirCosMax1
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element maximum principal stress relative to the element local 1 axis at the specified joint.

Field: DirCosMax2
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element maximum principal stress relative to the element local 2 axis at the specified joint.

Field: DirCosMax3
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element maximum principal stress relative to the element local 3 axis at the specified joint.

Field: DirCosMid1
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element middle principal stress relative to the element local 1 axis at the specified joint.

Field: DirCosMid2
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element middle principal stress relative to the element local 2 axis at the specified joint.

Field: DirCosMid3
Field is Imported: No
Format: Controlled by program
Units: Unitless
The direction cosine of the Solid element middle principal stress relative to the element local 3 axis at the specified joint.

Field: DirCosMin1
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element minimum principal stress relative to the element local 1 axis at the specified joint.

Field: DirCosMin2
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element minimum principal stress relative to the element local 2 axis at the specified joint.

Field: DirCosMin3
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the Solid element minimum principal stress relative to the element local 3 axis at the specified joint.

Table: Frame Hinge States

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text
The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: AssignHinge
Field is Imported: No
Format: Controlled by program
Units: Text

The name of a hinge property assigned to the specified frame object.

Field: GenHinge
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the hinge property generated by the program for the specified frame object based on the assigned hinge property.
Field: RelDist
Field is Imported: No
Format: Controlled by program
Units: Unitless

The specified relative distance from the I-end of the frame object to the hinge location. The relative distance is equal to the absolute distance divided by the beam length.

Field: AbsDist
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The specified absolute distance from the I-end of the frame object to the hinge location.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The P force in the frame element at the associated hinge, for the specified step.

Field: V2
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The V2 force in the frame element at the associated hinge, for the specified step.

Field: V3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The V3 force in the frame element at the associated hinge, for the specified step.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The T moment in the frame element at the associated hinge, for the specified step.
Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The M2 moment in the frame element at the associated hinge, for the specified step.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The M3 moment in the frame element at the associated hinge, for the specified step.

Field: U1Plastic
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The plastic translational deformation of the frame element, in the frame element local 1 direction, at the associated hinge, for the specified step.

Field: U2Plastic
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The plastic translational deformation of the frame element, in the frame element local 2 direction, at the associated hinge, for the specified step.

Field: U3Plastic
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The plastic translational deformation of the frame element, in the frame element local 3 direction, at the associated hinge, for the specified step.

Field: R1Plastic
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

The plastic translational deformation of the frame element, in the frame element local 1 direction, at the associated hinge, for the specified step.
Field: **R2Plastic**
- Field is Imported: No
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The plastic translational deformation of the frame element, in the frame element local 2 direction, at the associated hinge, for the specified step.

Field: **R3Plastic**
- Field is Imported: No
- Format: Rotational Displ (Displacements section of form)
- Units: Radians

The plastic translational deformation of the frame element, in the frame element local 3 direction, at the associated hinge, for the specified step.

Field: **HingeState**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either A to B, B to C, C to D, D to E, or >E indicating the state of the hinge for the specified step.

Field: **HingeStatus**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either A to IO, IO to LS, LS to CP, or >CP indicating the status of the hinge for the specified step.

**Table: Joint Accelerations - Absolute**

Field: **Joint**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a joint.

Field: **OutputCase**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of an analysis case or combination.
Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: U1
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec2

Joint absolute acceleration in the joint local 1 axis direction.

Field: U2
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

Joint absolute acceleration in the joint local 2 axis direction.

Field: U3
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

Joint absolute acceleration in the joint local 3 axis direction.

Field: R1
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint absolute acceleration about the joint local 1 axis.

Field: R2
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint absolute acceleration about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint absolute acceleration about the joint local 3 axis.

Table: Joint Accelerations - Relative

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a joint.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.
Field: **CaseType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: **U1**

Field is Imported: No  
Format: Acceleration-Trans (Time-Related section of form)  
Units: Length/sec²

Joint relative acceleration in the joint local 1 axis direction.

Field: **U2**

Field is Imported: No  
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

Joint relative acceleration in the joint local 2 axis direction.

Field: U3
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

Joint relative acceleration in the joint local 3 axis direction.

Field: R1
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint relative acceleration about the joint local 1 axis.

Field: R2
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint relative acceleration about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec²

Joint relative acceleration about the joint local 1 axis.

Table: Joint Displacements

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a joint.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.
Field: **CaseType**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: **U1**

Field is Imported: No  
Format: Translational Displ (Displacements section of form)  
Units: Length  

Joint displacement (relative to the ground) in the joint local 1 axis direction.

Field: **U2**

Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

Joint displacement (relative to the ground) in the joint local 2 axis direction.

Field: U3
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

Joint displacement (relative to the ground) in the joint local 3 axis direction.

Field: R1
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint rotation (relative to the ground) about the joint local 1 axis.

Field: R2
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint rotation (relative to the ground) about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint rotation (relative to the ground) about the joint local 3 axis.

Table: Joint Displacements - Absolute

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a joint.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text
The name of an analysis case or combination.

**Field: CaseType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

**Field: Step**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: U1**
- Field is Imported: No
- Format: Translational Displ (Displacements section of form)
- Units: Length

Joint absolute displacement in the joint local 1 axis direction.
Field: U2
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

Joint absolute displacement in the joint local 2 axis direction.

Field: U3
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

Joint absolute displacement in the joint local 3 axis direction.

Field: R1
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint absolute rotation about the joint local 1 axis.

Field: R2
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint absolute rotation about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Joint absolute rotation about the joint local 3 axis.

Table: Joint Displacements - Generalized

Field: GenDispl
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the generalized displacement.

Field: DisplType
Field is Imported: No
Format: Controlled by program
Units: Text
This is either Translation or Rotation indicating the type of generalized displacement.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHist, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.
Field: Translation
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

Displacement of a translational-type generalized displacement.

Field: Rotation
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

Rotation of a rotational-type generalized displacement.

Table: Joint Reactions

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a joint.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.
For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: U1**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force  
Joint reaction force in the joint local 1 axis direction.

**Field: U2**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force  
Joint reaction force in the joint local 2 axis direction.

**Field: U3**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force  
Joint reaction force in the joint local 3 axis direction.

**Field: R1**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length  
Joint reaction moment about the joint local 1 axis.
Field: R2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
Joint reaction moment about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
Joint reaction moment about the joint local 3 axis.

Table: Joint Reactions - Spring Forces

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a joint.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text
The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text
The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text
The contents of this field vary depending on the type of output case considered.
For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: U1
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force

Joint spring reaction force in the joint local 1 axis direction.

Field: U2
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force

Joint spring reaction force in the joint local 2 axis direction.

Field: U3
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force

Joint spring reaction force in the joint local 3 axis direction.

Field: R1
   Field is Imported: No
   Format: Moment (Forces section of form)
   Units: Force-Length

Joint spring reaction moment about the joint local 1 axis.
Field: R2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Joint spring reaction moment about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

Joint spring reaction moment about the joint local 3 axis.

**Table: Joint Time History Response Spectra**

Field: Joint
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a joint.

Field: RSNamedSet
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the joint time history response spectrum named set associated with this output.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CoordSys
Field is Imported: No
Format: Controlled by program
Units: Text

The coordinate system in which the response spectrum curve is generated.

Field: Dir
Field is Imported: No
### Field: Damping
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Unitless

The critical damping ratio for the response spectrum.

### Field: SpcWidening
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Percent

The percent spectrum widening for the response spectrum.

### Field: Period
- **Field is Imported:** No
- **Format:** Period (Time-Related section of form)
- **Units:** Sec

A period value for the response spectrum.

### Field: Frequency
- **Field is Imported:** No
- **Format:** Frequency (Time-Related section of form)
- **Units:** Cyc/sec

A frequency value for the response spectrum.

### Field: SD
- **Field is Imported:** No
- **Format:** Translational Displ (Displacements section of form)
- **Units:** Length

A spectral displacement value for the response spectrum.

### Field: SV
- **Field is Imported:** No
- **Format:** Velocity-Trans (Time-Related section of form)
- **Units:** Length/sec

A spectral velocity value for the response spectrum.
Field: PSV
  Field is Imported: No
  Format: Velocity-Trans (Time-Related section of form)
  Units: Length/sec

A psuedo spectral velocity value for the response spectrum.

Field: SA
  Field is Imported: No
  Format: Acceleration-Trans (Time-Related section of form)
  Units: Length/sec2

A spectral acceleration value for the response spectrum.

Field: PSA
  Field is Imported: No
  Format: Acceleration-Trans (Time-Related section of form)
  Units: Length/sec2

A psuedo spectral acceleration value for the response spectrum.

**Table: Joint Velocities - Absolute**

Field: Joint
  Field is Imported: No
  Format: Controlled by program
  Units: Text

Label of a joint.

Field: OutputCase
  Field is Imported: No
  Format: Controlled by program
  Units: Text

The name of an analysis case or combination.

Field: CaseType
  Field is Imported: No
  Format: Controlled by program
  Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.
Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: U1
Field is Imported: No
Format: Velocity-Trans (Time-Related section of form)
Units: Length/sec

Joint absolute velocity in the joint local 1 axis direction.

Field: U2
Field is Imported: No
Format: Velocity-Trans (Time-Related section of form)
Units: Length/sec

Joint absolute velocity in the joint local 2 axis direction.

Field: U3
Field is Imported: No
Format: Velocity-Trans (Time-Related section of form)
Units: Length/sec

Joint absolute velocity in the joint local 3 axis direction.
Field: R1  
Field is Imported: No  
Format: Velocity-Rot (Time-Related section of form)  
Units: rad/sec  
Joint absolute velocity about the joint local 1 axis.

Field: R2  
Field is Imported: No  
Format: Velocity-Rot (Time-Related section of form)  
Units: rad/sec  
Joint absolute velocity about the joint local 2 axis.

Field: R3  
Field is Imported: No  
Format: Velocity-Rot (Time-Related section of form)  
Units: rad/sec  
Joint absolute velocity about the joint local 3 axis.

Table: Joint Velocities - Relative

Field: Joint  
Field is Imported: No  
Format: Controlled by program  
Units: Text  
Label of a joint.

Field: OutputCase  
Field is Imported: No  
Format: Controlled by program  
Units: Text  
The name of an analysis case or combination.

Field: CaseType  
Field is Imported: No  
Format: Controlled by program  
Units: Text  
The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.
Field:  Step  
Field is Imported:  No  
Format:  Controlled by program  
Units:  Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckleling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field:  U1  
Field is Imported:  No  
Format:  Velocity-Trans (Time-Related section of form)  
Units:  Length/sec  
Joint relative velocity in the joint local 1 axis direction.

Field:  U2  
Field is Imported:  No  
Format:  Velocity-Trans (Time-Related section of form)  
Units:  Length/sec  
Joint relative velocity in the joint local 2 axis direction.

Field:  U3  
Field is Imported:  No  
Format:  Velocity-Trans (Time-Related section of form)  
Units:  Length/sec  
Joint relative velocity in the joint local 3 axis direction.
Field: R1
Field is Imported: No
Format: Velocity-Rot (Time-Related section of form)
Units: rad/sec

Joint relative velocity about the joint local 1 axis.

Field: R2
Field is Imported: No
Format: Velocity-Rot (Time-Related section of form)
Units: rad/sec

Joint relative velocity about the joint local 2 axis.

Field: R3
Field is Imported: No
Format: Velocity-Rot (Time-Related section of form)
Units: rad/sec

Joint relative velocity about the joint local 3 axis.

Table: Modal Load Participation Ratios

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

Name of a modal case.

Field: ItemType
Field is Imported: No
Format: Controlled by program
Units: Text

This may be Load Case, Acceleration, Link or Panel Zone. It specifies the type of item for which the modal load participation is reported.

Field: Item
Field is Imported: No
Format: Controlled by program
Units: Text

If the ItemType is Load Case then this is the name of the load case.

If the ItemType is Accel then this is the acceleration direction. It is either UX, UY, UZ, RX, RY, or RZ.
If the ItemType is Link then this is the name of the link followed by the degree of freedom for which the output is reported in parenthesis. The degree of freedom is either U1, U2, U3, R1, R2, or R3.

If the ItemType is Panel Zone then this is the name of the joint to which the panel zone is assigned followed by the degree of freedom for which the output is reported in parenthesis. The degree of freedom is either U1, U2, U3, R1, R2, or R3.

Field: Static
Field is Imported: No
Format: Controlled by program
Units: Percent

The static load participation ratio.

Field: Dynamic
Field is Imported: No
Format: Controlled by program
Units: Percent

The dynamic load participation ratio.

Table: Modal Participating Mass Ratios

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

Name of a modal case.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.
For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

The period of the associated mode from the associated modal analysis case.

Field: UX
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The modal participating mass ratio for the structure UX degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.

Field: UY
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The modal participating mass ratio for the structure UY degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.

Field: UZ
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The modal participating mass ratio for the structure UZ degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.
Field: SumUX
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure UX degree of freedom.

Field: SumUY
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure UY degree of freedom.

Field: SumUZ
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure UZ degree of freedom.

Field: RX
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The modal participating mass ratio for the structure RX degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.

Field: RY
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The modal participating mass ratio for the structure RY degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.

Field: RZ
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless
The modal participating mass ratio for the structure RZ degree of freedom. This ratio applies to the associated mode of the associated modal analysis case.

Field: SumRX
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure RX degree of freedom.

Field: SumRY
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure RY degree of freedom.

Field: SumRZ
Field is Imported: No
Format: Par Mass Ratios (Modal Factors section of form)
Units: Unitless

The cumulative sum of the modal participating mass ratio for the structure RZ degree of freedom.

Table: Modal Participation Factors

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

Name of a modal case.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.
For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: Period**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec

The period of the associated mode from the associated modal analysis case.

**Field: UX**
- Field is Imported: No
- Format: Modal Par - Trans (Modal Factors section of form)
- Units: Force-s2

A modal participation factor for the structure UX degree of freedom, for the associated mode of the associated modal analysis case.

**Field: UY**
- Field is Imported: No
- Format: Modal Par - Trans (Modal Factors section of form)
- Units: Force-s2

A modal participation factor for the structure UY degree of freedom, for the associated mode of the associated modal analysis case.

**Field: UZ**
- Field is Imported: No
- Format: Modal Par - Trans (Modal Factors section of form)
- Units: Force-s2

A modal participation factor for the structure UZ degree of freedom, for the associated mode of the associated modal analysis case.
Field: RX
Field is Imported: No
Format: Modal Par - Rot (Modal Factors section of form)
Units: Force-Length-s²

A modal participation factor for the structure RX degree of freedom, for the associated mode of the associated modal analysis case.

Field: RY
Field is Imported: No
Format: Modal Par - Rot (Modal Factors section of form)
Units: Force-Length-s²

A modal participation factor for the structure RY degree of freedom, for the associated mode of the associated modal analysis case.

Field: RZ
Field is Imported: No
Format: Modal Par - Rot (Modal Factors section of form)
Units: Force-Length-s²

A modal participation factor for the structure RZ degree of freedom, for the associated mode of the associated modal analysis case.

Field: ModalMass
Field is Imported: No
Format: Modal Mass (Modal Factors section of form)
Units: Force-Length-s²

The modal mass for the specified mode. This is a measure of the kinetic energy in the structure if it is deforming in the specified mode. Modal mass is calculated as S(transpose)*M*S where S is the mode shape and M is the mass matrix.

Note that the modal period (MP), modal mass (MM) and modal stiffness (MS) are related to each other by the following equation:

\[ MP = 2\pi\sqrt{\frac{MM}{MS}} \]

Field: ModalStiff
Field is Imported: No
Format: Modal Stiffness (Modal Factors section of form)
Units: Force-Length

Modal stiffness for the specified mode. This is a measure of the strain energy in the structure if it is deforming in the specified mode. Modal mass is calculated as S(transpose)*K*S where S is the mode shape and K is the stiffness matrix.
Note that the modal period (MP), modal mass (MM) and modal stiffness (MS) are related to each other by the following equation:

$$MP = 2\pi*(MM/MS)^{0.5}.$$  

**Table: Modal Periods And Frequencies**

**Field: OutputCase**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Name of a modal case.

**Field: Step**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

**Field: Period**
- Field is Imported: No
- Format: Period (Time-Related section of form)
- Units: Sec
The period of the associated mode from the associated modal analysis case.

**Field: Frequency**

- Field is Imported: No
- Format: Frequency (Time-Related section of form)
- Units: Cyc/sec

The cyclic frequency of the associated mode from the associated modal analysis case.

**Field: CircFreq**

- Field is Imported: No
- Format: Controlled by program
- Units: rad/sec

The circular frequency of the associated mode from the associated modal analysis case.

**Field: Eigenvalue**

- Field is Imported: No
- Format: Controlled by program
- Units: rad2/sec2

The eigenvalue of the associated mode from the associated modal analysis case.

**Table: Nonlinear Static Curves**

**Field: NLSNamedSet**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The NL.Static named set associated with this data.

**Field: OutputCase**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of a nonlinear static analysis case.

**Field: Step**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
A step number in the associated nonlinear static analysis case.

Field: BaseForce
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The base force at the associated step in the nonlinear static analysis case. This force is equal to $(FX^2 + FY^2 + FZ^2)^{0.5}$.

Field: Displ
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The monitored displacement at the associated step in the nonlinear static analysis case.

Field: SaCapacity
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec^2

The spectral acceleration on the structure capacity curve at the associated step in the nonlinear static analysis case.

Field: SdCapacity
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The spectral displacement on the structure capacity curve at the associated step in the nonlinear static analysis case.

Field: SaDemand
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec^2

The spectral acceleration on the earthquake demand curve at the associated step in the nonlinear static analysis case.

Field: SdDemand
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The spectral displacement on the earthquake demand curve at the associated step in the nonlinear static analysis case.
Field: **TEff**

Field is Imported: No  
Format: Period (Time-Related section of form)  
Units: Sec

The effective period at the associated step in the nonlinear static analysis case.

Field: **BetaEff**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The effective damping ratio at the associated step in the nonlinear static analysis case.

Field: **Alpha**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The modal mass coefficient at the associated step in the nonlinear static analysis case. This item is used to convert the base shear to a spectral acceleration.

Field: **PFPhi**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The modal participation factor times the modal amplitude at the associated step in the nonlinear static analysis case. This item is used to convert the displacement to a spectral displacement.

Field: **Ato<=B**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The number of hinges in the structure that fall between point A and point B on their hinge force-deformation curves.

Field: **>Bto<=C**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The number of hinges in the structure that fall between point B and point C on their hinge force-deformation curves.
Field: >Cto<=D
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges in the structure that fall between point C and point D on their hinge force-deformation curves.

Field: >Dto<=E
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges in the structure that fall between point D and point E on their hinge force-deformation curves.

Field: >E
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges beyond point E on their hinge force-deformation curves.

Field: Ato<=IO
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges in the structure that fall between point A and point IO on their hinge force-deformation curves.

Field: >IOto<=LS
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges in the structure that fall between point IO and point LS on their hinge force-deformation curves.

Field: >LSsto<=CP
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges in the structure that fall between point LS and point CP on their hinge force-deformation curves.
Field: >CP
Field is Imported: No
Format: Controlled by program
Units: Unitless

The number of hinges beyond point CP on their hinge force-deformation curves.

Field: TotalHinges
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total number of hinges in the structure.

Table: Objects And Elements - Areas

Field: AreaElem
Field is Imported: No
Format: Controlled by program
Units: Text

The number of an area element.

Field: AreaObject
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the area object from which the specified area element was created.

Table: Objects And Elements - Frames

Field: FrameElem
Field is Imported: No
Format: Controlled by program
Units: Text

The number of a frame element.

Field: FrameObject
Field is Imported: No
Format: Controlled by program
Units: Text
The name of the frame object from which the specified frame element was created.

**Table: Objects And Elements - Joints**

**Field: JointElem**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The number of a joint element.

**Field: JointObject**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of the joint object from which the specified joint element was created. If the joint element was not created from a joint object, but instead was created as a result of internal meshing by the program then this item is reported as None.

**Field: GlobalX**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global X coordinate of the specified joint element.

**Field: GlobalY**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global Y coordinate of the specified joint element.

**Field: GlobalZ**
- Field is Imported: No
- Format: Coordinates (Structure Dimensions section of form)
- Units: Length

Global Z coordinate of the specified joint element.

**Table: Objects And Elements - Links**

**Field: LinkElem**
- Field is Imported: No
Field: LinkObject
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the link object from which the specified link element was created.

Table: Objects And Elements - Solids

Field: SolidElem
Field is Imported: No
Format: Controlled by program
Units: Text

The number of a solid element.

Field: SolidObject
Field is Imported: No
Format: Controlled by program
Units: Text

The name of the solid object from which the specified solid element was created.

Table: Plot Function Traces

Field: PFNamedSet
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the plot function named set associated with this output.

Field: PlotFunc
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the plot function associated with this output.
Field: **OutputCase**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The name of an analysis case or combination.

Field: **CaseType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The type of output case. This may be any one of the following: LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: **Step**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: **TransDispl**
- Field is Imported: No
- Format: Translational Displ (Displacements section of form)
Units: Length

The translational displacement value for the trace at the specified step.

Field: RotDispl
Field is Imported: No
Format: Rotational Displ (Displacements section of form)
Units: Radians

The rotational displacement value for the trace at the specified step.

Field: Force
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The force value for the trace at the specified step.

Field: Moment
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment value for the trace at the specified step.

Field: FOverL
Field is Imported: No
Format: Force/Length (Forces section of form)
Units: Force/Length

The force per unit length value for the trace at the specified step.

Field: MOverL
Field is Imported: No
Format: Moment/Length (Forces section of form)
Units: Force-Length/Length

The moment per unit length value for the trace at the specified step.

Field: Stress
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The stress value for the trace at the specified step.

Field: Energy
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The energy value for the trace at the specified step.

Field: TransVel
Field is Imported: No
Format: Velocity-Trans (Time-Related section of form)
Units: Length/sec

The translational velocity value for the trace at the specified step.

Field: RotVel
Field is Imported: No
Format: Velocity-Rot (Time-Related section of form)
Units: rad/sec

The rotational velocity value for the trace at the specified step.

Field: TransAccel
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec^2

The translational acceleration value for the trace at the specified step.

Field: RotAccel
Field is Imported: No
Format: Acceleration-Rot (Time-Related section of form)
Units: rad/sec^2

The rotational acceleration value for the trace at the specified step.

Table: Response Spectrum Modal Information

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

Name of a response spectrum analysis case.

Field: ModalCase
Field is Imported: No
Format: Controlled by program
Units: Text

Name of the modal analysis case used for the response spectrum case.
Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.

Field: Period
Field is Imported: No
Format: Period (Time-Related section of form)
Units: Sec

Period of the specified mode.

Field: DampRatio
Field is Imported: No
Format: Damping Ratios (Damping Items section of form)
Units: Unitless

Field: U1Acc
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec^2
The response spectrum modal ground acceleration in the local U1 direction of the response spectrum local axes.

Field: U2Acc
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

The response spectrum modal ground acceleration in the local U2 direction of the response spectrum local axes.

Field: U3Acc
Field is Imported: No
Format: Acceleration-Trans (Time-Related section of form)
Units: Length/sec²

The response spectrum modal ground acceleration in the local U3 direction of the response spectrum local axes.

Field: U1Amp
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The response spectrum modal amplitude in the local U1 direction of the response spectrum local axes.

Field: U2Amp
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The response spectrum modal amplitude in the local U2 direction of the response spectrum local axes.

Field: U3Amp
Field is Imported: No
Format: Translational Displ (Displacements section of form)
Units: Length

The response spectrum modal amplitude in the local U3 direction of the response spectrum local axes.

Table: Section Cut Forces

Field: SectionCut
Field is Imported: No
Format: Controlled by program
Units: Text

Name of a section cut.

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.

Field: CaseType
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist, NonModHist, LinDirHist, NonDirHist, LinMoving, LinBuckling, LinSteady, and Combination.

Field: Step
Field is Imported: No
Format: Controlled by program
Units: Text

The contents of this field vary depending on the type of output case considered.

For linear static, response spectrum, buckling and steady state analysis cases this field is not used.

For nonlinear static analysis cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For modal cases this field reports the mode number.

For buckling factors this field reports the buckling mode number.

For linear modal history, nonlinear modal history, linear direct integration history, and nonlinear direct integration history cases this field either reports the step number for the output or it reports that the output is a Max or Min envelope value.

For double-valued combinations this field reports that the output is a Max or Min value.

For moving load cases this field reports the force correspondence if it has been requested.
Field: F1
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The section cut force component in the section cut local 1 direction.

Field: F2
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The section cut force component in the section cut local 2 direction.

Field: F3
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The section cut force component in the section cut local 3 direction.

Field: M1
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The section cut moment component about the section cut local 1 axis.

Field: M2
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The section cut moment component about the section cut local 2 axis.

Field: M3
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The section cut moment component about the section cut local 3 axis.

Field: GlobalX
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global X coordinate of the point where the section cut force is reported.
Field: GlobalY
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Y coordinate of the point where the section cut force is reported.

Field: GlobalZ
Field is Imported: No
Format: Coordinates (Structure Dimensions section of form)
Units: Length

The global Z coordinate of the point where the section cut force is reported.

Field: DirCos1X
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 1 axis relative to the positive global X axis.

Field: DirCos1Y
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 1 axis relative to the positive global Y axis.

Field: DirCos1Z
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 1 axis relative to the positive global Z axis.

Field: DirCos2X
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 2 axis relative to the positive global X axis.
Field: DirCos2Y
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 2 axis relative to the positive global Y axis.

Field: DirCos2Z
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 2 axis relative to the positive global Z axis.

Field: DirCos3X
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 3 axis relative to the positive global X axis.

Field: DirCos3Y
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 3 axis relative to the positive global Y axis.

Field: DirCos3Z
Field is Imported: No
Format: Controlled by program
Units: Unitless

The direction cosine of the section cut positive local 3 axis relative to the positive global Z axis.

Table: Total Energy Components

Field: OutputCase
Field is Imported: No
Format: Controlled by program
Units: Text

The name of an analysis case or combination.
Field: **CaseType**
Field is Imported: No
Format: Controlled by program
Units: Text

The type of output case. This may be any one of the following:
LinStatic, NonStatic, LinModal, LinRespSpec, LinModHist,
NonModHist, LinDirHis, NonDirHist, LinMoving, LinBuckling,
LinSteady, and Combination.

Field: **Input**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total input energy.

Field: **Kinetic**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total stored kinetic energy.

Field: **Potential**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total stored potential energy.

Field: **ModalDamp**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total dissipated modal damping energy.

Field: **LinkDampers**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total energy dissipated in the damper-type link elements.

Field: **LinkHystrtc**
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length
The total energy dissipated through hysteresis of link elements.

Field: Error
Field is Imported: No
Format: Energy (Miscellaneous section of form)
Units: Force-Length

The total energy error. This is equal to the total input energy minus all other energies.

Table: Aluminum Design 1 - Summary Data - AA-ASD 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The controlling stress ratio at the specified location.

Field: RatioType
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either PMM, Major Shear, Minor Shear, Major CBC Ratio, Minor CBC Ratio, or Other indicating the origin of the reported TotalRatio. CBC is short for column/beam capacity.

Field: Combo
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
   Field is Imported: No
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

   The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Aluminum Design 1 - Summary Data - AA-LRFD 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear, Major CBC Ratio, Minor CBC Ratio, or Other indicating the origin of the reported TotalRatio. CBC is short for column/beam capacity.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Aluminum Details 1 - Summary Data - AA-ASD 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear, Major CBC Ratio, Minor CBC Ratio, or Other indicating the origin of the reported TotalRatio. CBC is short for column/beam capacity.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Aluminum Details 1 - Summary Data - AA-LRFD 2000**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear, Major CBC Ratio, Minor CBC Ratio, or Other indicating the origin of the reported TotalRatio. CBC is short for column/beam capacity.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Design 1 - Column Summary Data - AASHTO Concrete 97

**Field: Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: DesignOpt**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft  

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along
the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data - ACI
318-99

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

**Field: DesignSect**

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

**Field: DesignType**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: DesignOpt**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

**Field: Status**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: PMMCombo**

Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VMajRebar

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 1 - Column Summary Data - BS8110 89**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **DesignOpt**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.
Field: Status
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
   Field is Imported: No
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

   The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMComb
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
   Field is Imported: No
   Format: Rebar Area (Section Dimensions section of form)
   Units: Length²

   The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.
Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data - BS8110 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft
The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data - EUROCODE 2-1992

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data - Indian IS 456-2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text
The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: DesignOpt**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: PMMCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data - Italian DM 14-2-92

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VMinRebar
  Field is Imported: No
  Format: Rebar Area/Length (Section Dimensions section of form)
  Units: in²/ft

  The required area of transverse shear reinforcing per unit length along
  the beam for minor shear at the specified location.

  For symmetrical sections minor shear is shear in the local 3-axis
  direction. For unsymmetrical sections (e.g., angles) minor shear is the
  shear associated with minor bending. Note that minor bending is the
  bending about the section principal axis with the smaller moment of
  inertia.

Field: ErrMsg
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Error messages generated during the design/check, if any. If no error
  messages exist then this item is reported as None.

Field: WarnMsg
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Warning messages generated during the design/check, if any. If no
  warning messages exist then this item is reported as None.

Table: Concrete Design 1 - Column Summary Data -
Mexican RCDF 2001

Field: Frame
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Label of a Frame object.

Field: DesignSect
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The current design section for the frame object.
Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 1 - Column Summary Data - NZS 3101-95**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frame</strong></td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td><strong>DesignSect</strong></td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td><strong>DesignType</strong></td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
</tr>
<tr>
<td><strong>DesignOpt</strong></td>
<td>This is either Check or Design indicating whether the frame object is to be checked or designed.</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Field is Imported: No</td>
</tr>
</tbody>
</table>

Units: Text
Format: Absolute Distance  (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to
the location where output is reported.

Field:  PMMCombo
Field is Imported:  No
Format:  Controlled by program
Units:  Text

This identifies the design load combination for which the PMM bar area
or ratio is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination
followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field:  PMMArea
Field is Imported:  No
Format:  Rebar Area  (Section Dimensions section of form)
Units:  Length2

The total longitudinal rebar area required for the axial force plus biaxial
moment (PMM) design at the specified location. This item is only
applicable if the DesignOpt item is Design.

Field:  PMMRatio
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified
location. This item is only applicable if the DesignOpt item is Check.

Field:  VMajCombo
Field is Imported:  No
Format:  Controlled by program
Units:  Text

This identifies the design load combination for which the major shear bar
area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination
followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along
the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: **Concrete Design 1 - Column Summary Data - UBC97**

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²
The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

**Field: PMMRatio**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

**Field: VMajCombo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajRebar**
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 2 - Beam Summary Data - AASHTO Concrete 97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: FTopCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: VRebar**
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

**Field: TLngCombo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TLngArea**
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

**Field: TTrnCombo**
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - ACI 318-99

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: **DesignSect**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **Location**  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **FTopCombo**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **FTopArea**  
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
Format:  Rebar Area/Length  (Section Dimensions section of form)
Units:  in²/ft

The required area of transverse shear reinforcing per unit length along
the beam for shear at the specified location.  This does not include the
area of transverse reinforcing required for torsion, if any.

Field:  TLngCombo
Field is Imported:  No
Format:  Controlled by program
Units:  Text

This identifies the design load combination for which the area of
longitudinal rebar for torsion is reported.  It is either the name of a
specified design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field:  TLngArea
Field is Imported:  No
Format:  Rebar Area  (Section Dimensions section of form)
Units:  Length²

The required area of longitudinal reinforcing required for torsion.  This
does not include the area of longitudinal rebar required for flexure, if
any.

Field:  TTrnCombo
Field is Imported:  No
Format:  Controlled by program
Units:  Text

This identifies the design load combination for which the area of
transverse rebar for torsion is reported.  It is either the name of a
specified design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field:  TTrnRebar
Field is Imported:  No
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft  

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - BS8110 89

Field: Frame  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: DesignSect  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: DesignType  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 2 - Beam Summary Data - BS8110 97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2
The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²
The required area of longitudinal reinforcing required for torsion. This
does not include the area of longitudinal rebar required for flexure, if
any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of
transverse rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area per unit length along the beam of one leg of a closed
stirrup around the perimeter of the beam at the specified location. This
does not include the area of transverse reinforcing required for shear, if
any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.
### Table: Concrete Design 2 - Beam Summary Data - EUROCODE 2-1992

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

  The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: FTopCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load.
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **FTopArea**
- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length$^2$

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **FBotCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **FBotArea**
- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length$^2$

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **VCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - Indian IS 456-2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2
The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

**Field: FBotCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: FBotArea**

- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length\(^2\)

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

**Field: VCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: VRebar**

- Field is Imported: No
- Format: Rebar Area/Length (Section Dimensions section of form)
- Units: in\(^2/\)ft
The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

**Field: TLngCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TLngArea**
- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length$^2$

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

**Field: TTTrnCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TTTrnRebar**
- Field is Imported: No
- Format: Rebar Area/Length (Section Dimensions section of form)
- Units: in$^2$/ft
The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 2 - Beam Summary Data - Italian DM 14-2-92**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
- Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: FBotArea**

Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length²

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

**Field: VCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: VRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

**Field: TLngCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TLngArea**

Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

**Field: TTrnCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TTrnRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

**Field: ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - Mexican RCDF 2001

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.
Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.
Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - NZS 3101-95

Field: Frame
Field is Imported: No
Format: Controlled by program
Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: FTopCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along
the beam for shear at the specified location. This does not include the
area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of
longitudinal rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The required area of longitudinal reinforcing required for torsion. This
does not include the area of longitudinal rebar required for flexure, if
any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of
transverse rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member.

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 2 - Beam Summary Data - UBC97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status

Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 3 - Joint Summary Data - AASHTO Concrete 97**

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: **CBMajCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMajRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMinCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CBMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 3 - Joint Summary Data - ACI 318-99**

**Field: Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

**Field: Status**

Field is Imported: No
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 3 - Joint Summary Data - BS8110 89**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: JSMajCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: **JSMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **JSMinCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **JSMinRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMajCombo**
- Field is Imported: No
Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 3 - Joint Summary Data - BS8110 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JS MajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JS MajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JS MinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 3 - Joint Summary Data - EUROCODE 2-1992

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status

Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: **JSMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **JSMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **JSMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMajCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text
This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMajRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMinCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 3 - Joint Summary Data - Indian IS 456-2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.
Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam
capacity ratio associated with the column minor axis is reported. It is
either the name of a specified design load combination, or the name of a
specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis.
This is the sum of the column capacities divided by the sum of the beam
capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Design 3 - Joint Summary Data - Italian DM 14-2-92

<table>
<thead>
<tr>
<th>Field: Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field is Imported: No</td>
</tr>
<tr>
<td>Format: Controlled by program</td>
</tr>
<tr>
<td>Units: Text</td>
</tr>
</tbody>
</table>

Label of a Frame object.

<table>
<thead>
<tr>
<th>Field: Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field is Imported: No</td>
</tr>
<tr>
<td>Format: Controlled by program</td>
</tr>
<tr>
<td>Units: Text</td>
</tr>
</tbody>
</table>

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

<table>
<thead>
<tr>
<th>Field: JSMajCombo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field is Imported: No</td>
</tr>
<tr>
<td>Format: Controlled by program</td>
</tr>
<tr>
<td>Units: Text</td>
</tr>
</tbody>
</table>

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

<table>
<thead>
<tr>
<th>Field: JSMajRatio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field is Imported: No</td>
</tr>
<tr>
<td>Format: Controlled by program</td>
</tr>
<tr>
<td>Units: Unitless</td>
</tr>
</tbody>
</table>
This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 3 - Joint Summary Data - Mexican RCDF 2001**

Field: **Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **JSMajCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Concrete Design 3 - Joint Summary Data - NZS 3101-95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

**Field: JSMinCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: JSMinRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CBMajCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMajRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMinCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CBMinRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Design 3 - Joint Summary Data - UBC97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: JSMajCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field:ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Concrete Details 1 - Column Summary Data - AASHTO Concrete 97

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: DesignOpt**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 1 - Column Summary Data - ACI 318-99

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.
Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Concrete Details 1 - Column Summary Data - BS8110 89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: **PMMCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **PMMArea**

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: **PMMRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: **VMajCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft  

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft  

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Details 1 - Column Summary Data - BS8110 97

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.
Field: **PMMRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: **VMajCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VMajRebar**

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VMinCombo**

Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No  
Format: Rebar Area/Length  (Section Dimensions section of form)  
Units: \( \text{in}^2/\text{ft} \)

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Concrete Details 1 - Column Summary Data - EUROCODE 2-1992

Field: Frame
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   Label of a Frame object.

Field: DesignSect
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   The current design section for the frame object.

Field: DesignType
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Location
   Field is Imported: No
   Format: Absolute Distance (Structure Dimensions section of form)
   Units: Length

   The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member.)
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft  

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in²/ft  

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Details 1 - Column Summary Data - Indian IS 456-2000

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either Beam, Brace or Column indicating the frame object design type.
Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.
Field: PMMRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar  
Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft  

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text
This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Concrete Details 1 - Column Summary Data - Italian DM 14-2-92

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Frame**   | Field is Imported: No  
Field: Controlled by program  
Units: Text  
Label of a Frame object.                                                                 |  
| **DesignSect** | Field is Imported: No  
Field: Controlled by program  
Units: Text  
The current design section for the frame object.                                                                 |  
| **DesignType** | Field is Imported: No  
Field: Controlled by program  
Units: Text  
This is either Beam, Brace or Column indicating the frame object design type.                                                                 |  
| **DesignOpt** | Field is Imported: No  
Field: Controlled by program  
Units: Text  
This is either Check or Design indicating whether the frame object is to be checked or designed.                                                        |  
| **Status**   | Field is Imported: No  
Field: Controlled by program  
Units: Text  
This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.                                                                 |  
| **Location** | Field is Imported: No  
Field: Absolute Distance (Structure Dimensions section of form)  
Units: Length  
The distance measured from the left end (I-End) of the frame object to the location where output is reported.                                                                 |  

Field: **PMMCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **PMMArea**

Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length²

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: **PMMRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: **VMajCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along
the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar
area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination
followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along
the beam for minor shear at the specified location.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 1 - Column Summary Data - Mexican RCDF 2001**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.
Field: PMMRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in\(^2/ft\)

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Concrete Details 1 - Column Summary Data - NZS 3101-95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: DesignOpt
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Check or Design indicating whether the frame object is to be checked or designed.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: PMMCombo
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
   Field is Imported: No
   Format: Rebar Area (Section Dimensions section of form)
   Units: Length^2

   The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

Field: VMajCombo
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 1 - Column Summary Data - UBC97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: DesignOpt**
- Field is Imported: No
Table: Concrete Details 1 - Column Summary Data - UBC97
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'Check' or 'Design' indicating whether the frame object is to be checked or designed.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: PMMCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the PMM bar area or ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: PMMArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2
The total longitudinal rebar area required for the axial force plus biaxial moment (PMM) design at the specified location. This item is only applicable if the DesignOpt item is Design.

Field: PMMRatio
Field is Imported: No
The axial force plus biaxial moment (PMM) stress ratio at the specified location. This item is only applicable if the DesignOpt item is Check.

**Field: VMajCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear bar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajRebar**

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for major shear at the specified location.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear bar area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **VMinRebar**

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for minor shear at the specified location.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Concrete Details 2 - Beam Summary Data - AASHTO Concrete 97

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>DesignType</td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
</tr>
<tr>
<td>Status</td>
<td>This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td>Location</td>
<td>The distance measured from the left end (I-End) of the frame object to the location where output is reported.</td>
</tr>
<tr>
<td>FTopCombo</td>
<td>This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load</td>
</tr>
</tbody>
</table>
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea  
Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea  
Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design
load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: VRebar**

Field is Imported: No  
Format: Rebar Area/Length  (Section Dimensions section of form)  
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

**Field: TLngCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TLngArea**

Field is Imported: No  
Format: Rebar Area  (Section Dimensions section of form)  
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

**Field: TTrnCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field:  TTrnRebar
Field is Imported:  No
Format:  Rebar Area/Length  (Section Dimensions section of form)
Units:  in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field:  ErrMsg
Field is Imported:  No
Format:  Controlled by program
Units:  Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:  WarnMsg
Field is Imported:  No
Format:  Controlled by program
Units:  Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table:  Concrete Details 2 - Beam Summary Data - ACI 318-99

Field:  Frame
Field is Imported:  No
Format:  Controlled by program
Units:  Text

Label of a Frame object.

Field:  DesignSect
Field is Imported:  No
Format:  Controlled by program
Units: Text

The current design section for the frame object.

**Field: DesignType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Location**
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: FTopCombo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: FTopArea**
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2
The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **FBotCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **FBotArea**
- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length²

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **VCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **VRebar**
- Field is Imported: No
- Format: Rebar Area/Length (Section Dimensions section of form)
- Units: in²/ft
The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft
The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Details 2 - Beam Summary Data - BS8110 89

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: FBotArea**

Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length\(^2\)

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

**Field: VCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: VRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in\(^2\)/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

**Field: TLngCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 2 - Beam Summary Data - BS8110 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: FTopCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.
Field: VCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar

Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.
Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 2 - Beam Summary Data - EUROCODE 2-1992

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **FTopCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

**Field: TTrnRebar**
- Field is Imported: No
- Format: Rebar Area/Length (Section Dimensions section of form)
- Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 2 - Beam Summary Data - Indian IS 456-2000**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.
Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.
This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.
Field: **ErrMsg**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Details 2 - Beam Summary Data - Italian DM 14-2-92

Field: **Frame**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: **DesignSect**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: **DesignType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.
Field: **Location**

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **FTopCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **FTopArea**

Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length²

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **FBotCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
Field: **FBotArea**

Field is Imported: No  
Format: Rebar Area (Section Dimensions section of form)  
Units: Length2  

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: **VCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: **VRebar**

Field is Imported: No  
Format: Rebar Area/Length (Section Dimensions section of form)  
Units: in2/ft  

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: **TLngCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Concrete Details 2 - Beam Summary Data - Mexican RCDF 2001

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>DesignType</td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
</tr>
<tr>
<td>Status</td>
<td>This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td>Location</td>
<td>The distance measured from the left end (I-End) of the frame object to the location where output is reported.</td>
</tr>
<tr>
<td>FTopCombo</td>
<td></td>
</tr>
</tbody>
</table>
This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTlnrCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

**Field: TTrnRebar**

- Field is Imported: No
- Format: Rebar Area/Length (Section Dimensions section of form)
- Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

**Field: ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 2 - Beam Summary Data - NZS 3101-95**

**Field: Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRRebar
Field is Imported: No
The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
- Field is Imported: No
- Format: Rebar Area (Section Dimensions section of form)
- Units: Length^2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
- Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in²/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 2 - Beam Summary Data - UBC97**

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: FTopCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural top bar area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FTopArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The total longitudinal top rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: FBotCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the flexural bottom bar area is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: FBotArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length^2

The total longitudinal bottom rebar area required for flexure at the specified location. This does not include the area of longitudinal rebar required for torsion, if any.

Field: VCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear rebar area per unit length is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: VRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in^2/ft

The required area of transverse shear reinforcing per unit length along the beam for shear at the specified location. This does not include the area of transverse reinforcing required for torsion, if any.

Field: TLngCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of longitudinal rebar for torsion is reported. It is either the name of a
specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TLngArea
Field is Imported: No
Format: Rebar Area (Section Dimensions section of form)
Units: Length2

The required area of longitudinal reinforcing required for torsion. This does not include the area of longitudinal rebar required for flexure, if any.

Field: TTrnCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the area of transverse rebar for torsion is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

Field: TTrnRebar
Field is Imported: No
Format: Rebar Area/Length (Section Dimensions section of form)
Units: in2/ft

The required area per unit length along the beam of one leg of a closed stirrup around the perimeter of the beam at the specified location. This does not include the area of transverse reinforcing required for shear, if any.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - AASHTO Concrete 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - ACI 318-99

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: **JSMinRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-
axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: **CBMajCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam
capacity ratio associated with the column major axis is reported. It is
either the name of a specified design load combination, or the name of a
specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either
the design loads were obtained either by applying special, code-specific,
multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design
locations for the same member.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: **CBMajRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis.
This is the sum of the column capacities divided by the sum of the beam
capacities at the top of the specified column.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMinCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMinRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - BS8110 89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErnMsg', 'See WarnMsg', or 'See ErnMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: **JSMajRatio**
   
   Field is Imported: No  
   Format: Controlled by program  
   Units: Unitless

   This is the joint shear divided by the joint shear capacity.

   For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **JSMinCombo**
   
   Field is Imported: No  
   Format: Controlled by program  
   Units: Text

   This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

   For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **JSMinRatio**
   
   Field is Imported: No  
   Format: Controlled by program  
   Units: Unitless

   This is the joint shear divided by the joint shear capacity.

   For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMajCombo**
   
   Field is Imported: No  
   Format: Controlled by program  
   Units: Text
This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CBMinCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - BS8110 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.
Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **JSMinRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMajCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - EUROCODE 2-1992

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See Err_Msg', 'See Warn_Msg', or 'See Err_Msg and Warn_Msg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: JSMinCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: JSMinRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CBMajCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 3 - Joint Summary Data - Indian IS 456-2000**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **JSMajCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Concrete Details 3 - Joint Summary Data - Italian DM 14-2-92

**Field: Frame**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Label of a Frame object.

**Field: Status**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: JSMajCombo**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: JSMajRatio**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Concrete Details 3 - Joint Summary Data - Mexican RCDF 2001

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: JSMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: **JSMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

This is the joint shear divided by the joint shear capacity.  

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMajCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **CBMinCombo**

Field is Imported: No  
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Concrete Details 3 - Joint Summary Data - NZS 3101-95

**Field: Frame**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

**Field: Status**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: JSMajCombo**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: JSMajRatio**  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that
the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMinRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Concrete Details 3 - Joint Summary Data - UBC97**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: **JSMajCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the joint shear ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: JSMinCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the joint shear ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: JSMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

This is the joint shear divided by the joint shear capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CBMajCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column major axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CBMinCombo
Field is Imported: No
Format: Controlled by program
Units:  Text

This identifies the design load combination for which the column/beam capacity ratio associated with the column minor axis is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that either the design loads were obtained either by applying special, code-specific, multipliers to all or part of the specified design load combination; or that the design was based on the capacity of other members (or other design locations for the same member).

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CBMinRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam capacity ratio associated with the column major axis. This is the sum of the column capacities divided by the sum of the beam capacities at the top of the specified column.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Steel Design 1 - Summary Data - AASHTO Steel 97

**Field: Frame**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Label of a Frame object.

**Field: DesignSect**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

The current design section for the frame object.

**Field: DesignType**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: Ratio**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 1 - Summary Data - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
The current design section for the frame object.

**Field: DesignType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: Ratio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

**Field: Combo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 1 - Summary Data - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text
This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: Ratio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 1 - Summary Data - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 1 - Summary Data - UBC97-LRFD**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: Ratio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
   Field is Imported: No
   Format: Moment (Forces section of form)
   Units: Force-Length

   The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   The equation used to obtain the reported ratios.

Field: TotalRatio
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

   The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PuDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: PhiPnc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: PhiPnt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DBMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DSMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMaj"0r
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMaj"0r
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.
Field: **MuMinDsgn**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **PhiMnMin**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CmMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **DBMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: DSMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 2 - PMM Details - AISC-ASD89**

Field: **Frame**

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.
Field: Combo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMajor**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinor**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: T**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**

- Field is Imported: No
- Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design axial stress.

Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial tensile stress.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design major moment bending stress.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FeMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design minor moment bending stress.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FbMinor**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FeMinor**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees
The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: SectClass**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

**Field: FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 2 - PMM Details - AISC-LRFD93**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text
The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text
This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: SRLimit**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: PuDsgn**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design factored axial force.

**Field: PhiPnc**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The axial compressive force capacity.

**Field: PhiPnt**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The axial tensile force capacity.
Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: B2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Table: Steel Design 2 - PMM Details - AISC-LRFD93

Units: Unitless

Unitless factor, $C_b$, used in determining the allowable bending stress.

Field: MuMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, $C_m$, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B1Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless
Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local z-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B2Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local z-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local z-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local z-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.
Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PuDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: PhiPnc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: PhiPnt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: PhiMnMaj**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CmMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: B1Major**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: B2Major**
- Field is Imported: No
Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMaj or
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMaj or
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.
Field: **MuMinDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **PhiMnMin**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **CmMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **B1Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

**Field: B2Minor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**

Field is Imported: No  
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng

Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF

Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType

Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

---

**Table: Steel Design 2 - PMM Details for Pipes - API RP2A-LRFD 97**

Field: **Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored axial load for the specified combo.

Field: MuMajor
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length
The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMajor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VuMinor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Tu**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The equation used to obtain the reported ratios.
Field: **TotalRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: **PRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: **MMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless
The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: PuDsgn**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored axial force.

**Field: PhiPnc**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial compressive force capacity.

**Field: PhiPnt**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial tensile force capacity.

**Field: Fxe**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The elastic local buckling strength in stress units.

**Field: Fxc**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The inelastic local buckling strength in stress units.

**Field: Fh**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The hoop stress due to hydrostatic pressure.

**Field: PhiFhc**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
Units: Force/Length²

The critical hoop buckling stress.

Field: Fhe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The elastic hoop buckling stress.

Field: Fx
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The factor fx used in computing the combined axial compression, bending and hydrostatic pressure interaction ratio.

Field: A
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor A used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: B
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor B used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: Eta
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor Eta (greek letter) used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: HydroPressu
Field is Imported: No
Format: Force/Area (Forces section of form)
Units: Force/Length²

The factored confining hydrostatic pressure.
Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: B2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, $C_b$, used in determining the allowable bending stress.

**Field: MuMinDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PhiMnMin**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, $C_m$, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B1Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
Unitless moment magnification factor for non-sway minor-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B2Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: Fy

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng

Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF

Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.
Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

**Field: PRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

**Field: MMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design axial stress.

Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial tensile stress.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FeMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FeMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: XKMinor

Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor

Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The total length of the frame object (not clear length).

Field: **MajAxisAng**  
Field is Imported: No  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: **RLLF**  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: **SectClass**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: **FramingType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 2 - PMM Details for Pipes - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

**Field: VMinor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: T**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

**Field: PRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.
Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The design axial stress.
Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial tensile stress.

Field: Fxe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The elastic local buckling stress.

Field: Fxc
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The inelastic local buckling stress.

Field: Fh
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The hoop stress due to hydrostatic pressure.

Field: Fhc
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The critical hoop buckling stress.

Field: Fhe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The elastic hoop buckling stress.
Field: **Fx**  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2  

The factor fx used in computing the combined axial compression and hydrostatic pressure interaction ratio.

Field: **A**  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The factor A used in computing the combined axial tension and hydrostatic pressure interaction ratio.

Field: **B**  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The factor B used in computing the combined axial tension and hydrostatic pressure interaction ratio.

Field: **HydroPress**  
Field is Imported: No  
Format: Force/Area (Forces section of form)  
Units: Force/Length^2  

The confining hydrostatic pressure.

Field: **MMajDsgn**  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length  

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **ffbMajor**  
Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length^2
The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FbMajor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FeMajor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CmMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2
The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FeMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless
Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMenor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 2 - PMM Details - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Pac
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial compression force.

Field: Pat
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial tension force.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MaMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PeMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Euler buckling force for major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MaMin**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PeMin**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The Euler buckling force for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FY
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees
The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: SectClass**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

**Field: FramingType**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field:ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 2 - PMM Details for Angles - ASCE 10-97**

**Field: Frame**

- Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor

Field is Imported: No
Format: Force  (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment  (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PM stress ratio. The total PM stress ratio consists of the sum of the axial and resultant moment components.

Field: MRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The resultant moment component of the total PM stress ratio. The total PM stress ratio consists of the sum of the axial and resultant moment components.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Pac
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial compression force.

Field: Pat
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial tension force.

Field: MDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The resultant factored moment. This moment includes applicable amplification factors, if any.

Field: Ma
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The resultant moment capacity.
Field: Pe
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Euler buckling force for bending in the resultant moment direction.

Field: Cm
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for bending that is used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

Field: XK
Field is Imported: No
Format: Controlled by program
Units: Unitless

The effective length factor. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

Field: XL
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Myt
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that produces tensile yield at the extreme fiber.

Field: Mb
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that causes lateral buckling.

Field: Myc
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that produces compressive yield at the extreme fiber.

Field: Me
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The elastic critical moment.

Field: LoadAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle between the angle section Z-axis and the resultant load.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 2 - PMM Details - BS5950 2000

Field: Frame
Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance  (Structure Dimensions section of form)
Units:  Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force  (Forces section of form)
Units:  Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format:  Moment  (Forces section of form)
Units:  Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format:  Moment  (Forces section of form)
Units:  Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force  (Forces section of form)
Units:  Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: FtOrFcDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Pc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance.

Field: Pt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

**Field: PcMajor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance considering buckling about the major axis only.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: PcMinor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance considering buckling about the minor axis only.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MfMajDsgn**

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: McMajor**

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mb
Field is Imported: No
Format: Controlled by program
Units: Unitless

The buckling resistance moment.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: mMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for major axis bending.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: mLt**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Unitless

The equivalent uniform moment factor for lateral-torsional buckling.

**Field: MfMinDsgn**
- **Field is Imported:** No
- **Format:** Moment (Forces section of form)
- **Units:** Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: McMinor**
- **Field is Imported:** No
- **Format:** Moment (Forces section of form)
- **Units:** Force-Length

The minor axis bending moment capacity.

**Field: XKMinor**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**
- **Field is Imported:** No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: mMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 2 - PMM Details - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation

Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: FtOrFcDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Pc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance.

Field: Pt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MfMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: McMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mb
Field is Imported: No
Format: Controlled by program
Units: Unitless

The buckling resistance moment.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: mMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: N
Field is Imported: No
Format: Controlled by program
Units: Unitless

The slenderness corection factor.

Field: MfMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: McMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: mMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: Combo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VuMinor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Tu**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: CfOrCtDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Cr
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored compressive resistance.

Field: Tr
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored tensile resistance.

Field: MfMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MrMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major moment resistance.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: U1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: U2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Omega1Major**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Coefficient used to determine equivalent uniform major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Omega2**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Coefficient to account for increased moment resistance due to moment gradient.

**Field: MfMinDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MrMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored minor moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: U1Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: U2Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Omega1Minor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Coefficient used to determine equivalent uniform minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**

- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The steel yield stress for the design section.

**Field: E**

- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The modulus of elasticity for the design section.

**Field: Length**

- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The total length of the frame object (not clear length).

**Field: MajAxisAng**

- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.
Field: **RLLF**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: **SectClass**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: **FramingType**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 2 - PMM Details - EUROCODE 3-1993**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.
Field: **DesignSect**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: **Combo**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **Location**  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **Pu**  
Field is Imported: No  
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: **MMinRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: **NsdDsgn**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: **Ncrd**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: **Ntrd**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tension resistance force.

Field: **NbrdMajor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.
Field: NbrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: MsdMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: McrdMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending full moment resistance.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MvrdMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending reduced resistance moment due to shear.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MbrdMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The major bending buckling resistance moment.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajoe**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajoe**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: kMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Factor applied to the major design moment in the interaction equations.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: klt
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the major design moment in the interaction equation checking for failure due to lateral-torsional buckling.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: C1
Field is Imported: No
Format: Controlled by program
Units: Unitless

A bending coefficient.

Field: MsdMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: McrdMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending full moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MvrdMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The minor bending reduced resistance moment due to shear.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: kMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the minor design moment in the interaction equations.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field:  Fy
Field is Imported:  No
Format:  Stress Input  (Stresses section of form)
Units:  Force/Length2

The steel yield stress for the design section.

Field:  E
Field is Imported:  No
Format:  Stress Input  (Stresses section of form)
Units:  Force/Length2

The modulus of elasticity for the design section.

Field:  Length
Field is Imported:  No
Format:  Absolute Distance  (Structure Dimensions section of form)
Units:  Length

The total length of the frame object (not clear length).

Field:  MajAxisAng
Field is Imported:  No
Format:  Angles  (Structure Dimensions section of form)
Units:  Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field:  RLLF
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless

The reduced live load factor.  A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field:  SectClass
Field is Imported:  No
Format:  Controlled by program
Units:  Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field:  FramingType
Field is Imported:  No
Format:  Controlled by program
Units:  Text
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - Italian UNI 10011

Field:Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field:DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field:DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field:Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo.
This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.
Field: **TotalRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: **PRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: **MMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless
The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: NsdDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Ncrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: Ntrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tension resistance force.

Field: NbrdMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: NbrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: MsdMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: **McrdMajor**
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending full moment resistance.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MvrdMajor**
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending reduced resistance moment due to shear.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MbrdMajor**
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending buckling resistance moment.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **XKMajor**
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: kMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the major design moment in the interaction equations.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: klt
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the major design moment in the interaction equation checking for failure due to lateral-torsional buckling.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: C1
Field is Imported: No
Format: Controlled by program
Units: Unitless
A bending coefficient.

**Field: MsdMinDsgn**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: McrdMinor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor bending full moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MvrdMinor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor bending reduced resistance moment due to shear.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: kMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Factor applied to the minor design moment in the interaction equations.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**

Field is Imported: No  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

The steel yield stress for the design section.

**Field: E**

Field is Imported: No  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

The modulus of elasticity for the design section.

**Field: Length**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design axial force.

Field: ffa  
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design axial stress.

Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial tensile stress.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²
The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FeMajor**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: CmMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**

Field is Imported: No
Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Cb**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

**Field: MMinDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ffbMinor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FbMinor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²
The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FeMinor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**
- Field is Imported: No
Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The steel yield stress for the design section.

**Field: E**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The modulus of elasticity for the design section.

**Field: Length**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The total length of the frame object (not clear length).

**Field: MajAxisAng**
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.
Field: **SectClass**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: **FramingType**
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **SeisZone**
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: **Omega0**
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: **HEQFactor**
Field is Imported: No
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case.

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 2 - PMM Details - UBC97-LRFD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load.
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PuDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.
Field: PhiPnc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: PhiPnt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MuMinDsgn  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless
Unitless factor, $C_m$, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B1Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B2Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: HEQFactor
Field is Imported: No
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.
Field: **VMajorCombo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VMajorLoc**
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **VMajorRatio**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VuMajDsgn**
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMinorRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMinDsgn**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PhiVnMin**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: TuMinor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length
The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - AISC-ASD89

Field: Frame
Field is Imported: No
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)  
Units: Force/Length2

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TMajor  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor  
Field is Imported: No  
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: TMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 3 - Shear Details - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VuMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMInorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text
This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: VMajorCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajorLoc**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMajorRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance  (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMinDsgn
Field is Imported: No
Format: Force  (Forces section of form)  
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force  (Forces section of form)  
Units: Force

The minor direction shear capacity.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field:  FvMinor
Field is Imported:  No
Format:  Stress Output  (Stresses section of form)
Units:  Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction.  For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending.  Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field:  TuMinor
Field is Imported:  No
Format:  Moment  (Forces section of form)
Units:  Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo.  This item is reported for information only.  It is not used in the design.

Field:  SRLimit
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless

The stress ratio limit as specified in the preferences.  Stress ratios that are less than or equal to this value are considered acceptable.

Field:  RLLF
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless

The reduced live load factor.  A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field:  FramingType
Field is Imported:  No
Format:  Controlled by program
Units:  Text

The framing type.  This is either Moment Frame or Braced Frame.  This item is used for ductility considerations in the design.
Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 3 - Shear Details for Angles - ASCE 10-97**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is used for design.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: fvTotalMaj
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The total design major shear stress. This stress is calculated by summing the stresses due to major shear and torsion.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: fvShearMaj
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress not including the effects of torsion.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: fvTorsMaj
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The shear stress in the major direction due to torsion.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FvMajor**

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinorCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinorLoc**

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VuMinor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is used for design.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvTotalMin
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The total design minor shear stress. This stress is calculated by summing the stresses due to minor shear and torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvShearMin
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²
The design minor shear stress not including the effects of torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvTorsMin
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The shear stress in the minor direction due to torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.
Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: FvMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PvMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinorLoc**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMinorRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FvMinDsgn**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PvMinor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of inertia.

**Field: TuMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

**Field: SRLimit**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 3 - Shear Details - BS5950 90**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: VMajorCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PvMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PvMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VfMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VrMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VfMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VrMinor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit

Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF

Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType

Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VsdMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: VrdMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VsdMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.
Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMajorRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VsdMajDsgn**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VrdMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: TuMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.
Field: VMinorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VsdMinDsgn

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Design 3 - Shear Details - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: ffvMajor**

- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: FvMajor**

- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: TMajor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

**Field: VMinorCombo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffVMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The design minor shear stress.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 3 - Shear Details - UBC97-LRFD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: PhiVnMaj**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: TuMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

**Field: VMinorCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 4 - Continuity Plates - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPIArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length2

The required continuity plate area.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 4 - Continuity Plates - API RP2A-WSD2000**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length2
The required continuity plate area.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Design 4 - Continuity Plates - ASCE 10-97

#### Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

#### Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

#### Field: Status
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

#### Field: Combo
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length^2

The required continuity plate area.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Design 4 - Continuity Plates - BS5950 2000

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 4 - Continuity Plates - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Design 4 - Continuity Plates - CISC 95

**Field: Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

**Field: DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

**Field: Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length²

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea

The required continuity plate area.

Field: ErrMsg

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - Italian UNI 10011

Field: Frame

Table: Steel Design 4 - Continuity Plates - Italian UNI 10011
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 4 - Continuity Plates - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPIArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length^2
The required continuity plate area.

**Field: ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 4 - Continuity Plates - UBC97-LRFD**

**Field: Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length^2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 5 - Doubler Plates - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

**Field: DesignSect**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**

- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

**Field:ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 5 - Doubler Plates - ASCE 10-97**

**Field: Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

**Field: DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

**Field: Status**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length
The required doubler plate thickness.

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 5 - Doubler Plates - BS5950 2000**

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **Status**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **Combo**
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Design 5 - Doubler Plates - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 5 - Doubler Plates - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 5 - Doubler Plates - UBC97-LRFD**

**Field: Frame**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**

- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.
**Field:ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field:WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 6 - Beam/Column Ratios - AASHTO Steel 97**

**Field: Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

**Field:DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

**Field:Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field:ComboMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless
The column/beam strength ratio for major moment (bending about column local 3-axis).

**Field:** ComboMinor
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field:** CBRatioMin
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

**Field:** ErrMsg
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field:** WarnMsg
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table:** Steel Design 6 - Beam/Column Ratios - AISC-LRFD93

**Field:** Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: **ComboMajor**

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMaj**

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: **ComboMinor**

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMin**

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 6 - Beam/Column Ratios - ASCE 10-97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: ComboMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
   Field is Imported: No
   Format: Controlled by program
   Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - BS5950 2000

Field: Frame
   Field is Imported: No
   Format: Controlled by program
   Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: ComboMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

**Field: ComboMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMin**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design
load combination followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about
column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam
strength ratio for column minor moment is reported. It is either the name
of a specified design load combination, or the name of a specified design
load combination followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about
column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - EUROCODE 3-1993

Field: Frame

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect

- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: Status

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: **ComboMinor**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMin**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Design 6 - Beam/Column Ratios - Italian UNI 10011**

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about
column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 6 - Beam/Column Ratios - UBC97-LRFD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Design 7 - Beam Shear Forces - AASHTO Steel 97

Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: ComboLeft
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Design 7 - Beam Shear Forces - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Table: Steel Design 7 - Beam Shear Forces - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorRight**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

### Table: Steel Design 7 - Beam Shear Forces - API RP2A-LRFD 97

**Field: Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

**Field: DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

**Field: ComboLeft**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Table: Steel Design 7 - Beam Shear Forces - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorRight**
- **Field is Imported:** No
- **Format:** Force (Forces section of form)
- **Units:** Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Table: Steel Design 7 - Beam Shear Forces - ASCE 10-97**

**Field: Frame**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Label of a Frame object.

**Field: DesignSect**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

The current design section for the frame object.

**Field: ComboLeft**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the
beam right end (J-end) is reported. It is either the name of a specified
design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Table: Steel Design 7 - Beam Shear Forces - BS5950 2000

Field: Frame
Field is Imported: No
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

### Table: Steel Design 7 - Beam Shear Forces - BS5950 90

Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: ComboLeft
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: VMajorLeft

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Design 7 - Beam Shear Forces - CISC 95

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

### Table: Steel Design 7 - Beam Shear Forces - EUROCODE 3-1993

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: ComboLeft**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorLeft**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force
The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Design 7 - Beam Shear Forces - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
The current design section for the frame object.

**Field: ComboLeft**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorLeft**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: ComboRight**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorRight**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

### Table: Steel Design 7 - Beam Shear Forces - UBC97-ASD

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>Field is Imported:</td>
<td>No</td>
</tr>
<tr>
<td>Format:</td>
<td>Controlled by program</td>
</tr>
<tr>
<td>Units:</td>
<td>Text</td>
</tr>
</tbody>
</table>

The current design section for the frame object.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>Field is Imported:</td>
<td>No</td>
</tr>
<tr>
<td>Format:</td>
<td>Controlled by program</td>
</tr>
<tr>
<td>Units:</td>
<td>Text</td>
</tr>
</tbody>
</table>

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ComboLeft</td>
<td>This identifies the design load combination for</td>
</tr>
<tr>
<td>Field is Imported:</td>
<td>which the shear at the beam left end (I-end) is</td>
</tr>
<tr>
<td>Format:</td>
<td>reported. It is either the name of a specified</td>
</tr>
<tr>
<td>Units:</td>
<td>design load combination, or the name of a</td>
</tr>
<tr>
<td></td>
<td>specified design load combination followed by</td>
</tr>
<tr>
<td></td>
<td>(SP).</td>
</tr>
<tr>
<td></td>
<td>A design load combination name followed by (SP)</td>
</tr>
<tr>
<td></td>
<td>indicates that the design loads were obtained</td>
</tr>
<tr>
<td></td>
<td>by applying special, code-specific, seismic</td>
</tr>
<tr>
<td></td>
<td>multipliers to part of the specified design</td>
</tr>
<tr>
<td></td>
<td>load combination.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMajorLeft</td>
<td>The major shear at the beam left end (I-End).</td>
</tr>
<tr>
<td>Field is Imported:</td>
<td>No</td>
</tr>
<tr>
<td>Format:</td>
<td>Force (Forces section of form)</td>
</tr>
<tr>
<td>Units:</td>
<td>Force</td>
</tr>
</tbody>
</table>

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: ComboRight**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorRight**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Table: Steel Design 7 - Beam Shear Forces - UBC97-LRFD**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.
Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Design 8 - Brace Max Axial Load - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.
**Table: Steel Design 8 - Brace Max Axial Load - API RP2A-WSD2000**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>ComboComp</td>
<td>This identifies the design load combination for which the compression axial</td>
</tr>
<tr>
<td></td>
<td>force is reported. It is either the name of a specified design load</td>
</tr>
<tr>
<td></td>
<td>combination, or the name of a specified design load combination followed</td>
</tr>
<tr>
<td></td>
<td>by (SP).</td>
</tr>
<tr>
<td></td>
<td>A design load combination name followed by (SP) indicates that the design</td>
</tr>
<tr>
<td></td>
<td>loads were obtained by applying special, code-specific, seismic multipliers</td>
</tr>
<tr>
<td></td>
<td>to part of the specified design load combination.</td>
</tr>
<tr>
<td>PMaxComp</td>
<td>The largest compression axial force in the brace.</td>
</tr>
<tr>
<td>ComboTens</td>
<td>This identifies the design load combination for which the tension axial</td>
</tr>
<tr>
<td></td>
<td>force is reported. It is either the name of a specified design load</td>
</tr>
<tr>
<td></td>
<td>combination, or the name of a specified design load combination followed</td>
</tr>
<tr>
<td></td>
<td>by (SP).</td>
</tr>
</tbody>
</table>
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.
Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **ComboComp**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxComp**
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: **ComboTens**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxTens**
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Design 8 - Brace Max Axial Load - UBC97-LRFD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
The current design section for the frame object.

Field: **ComboComp**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxComp**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The largest compression axial force in the brace.

Field: **ComboTens**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxTens**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The largest tension axial force in the brace.
Table: Steel Details 1 - Summary Data - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text  
This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text  
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: **Ratio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  
The controlling stress ratio at the specified location.

Field: **RatioType**

Field is Imported: No  
Format: Controlled by program  
Units: Text  
This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: **Combo**

Field is Imported: No  
Format: Controlled by program  
Units: Text  
This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
    Field is Imported: No
    Format: Absolute Distance (Structure Dimensions section of form)
    Units: Length

    The distance measured from the left end (I-End) of the frame object to
    the location where output is reported.

Field: ErrMsg
    Field is Imported: No
    Format: Controlled by program
    Units: Text

    Error messages generated during the design/check, if any. If no error
    messages exist then this item is reported as None.

Field: WarnMsg
    Field is Imported: No
    Format: Controlled by program
    Units: Text

    Warning messages generated during the design/check, if any. If no
    warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - AISC-LRFD93

Field: Frame
    Field is Imported: No
    Format: Controlled by program
    Units: Text

    Label of a Frame object.

Field: DesignSect
    Field is Imported: No
    Format: Controlled by program
    Units: Text

    The current design section for the frame object.

Field: DesignType
    Field is Imported: No
    Format: Controlled by program
    Units: Text

    This is either Beam, Brace or Column indicating the frame object design
    type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

**Field: Combo**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: Location**
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
**Table: Steel Details 1 - Summary Data - API RP2A-WSD2000**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

**Field: Ratio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The controlling stress ratio at the specified location.

**Field: RatioType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 1 - Summary Data - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 1 - Summary Data - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

Field: Ratio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 1 - Summary Data - UBC97-LRFD

Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: DesignType
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Ratio
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The controlling stress ratio at the specified location.

Field: RatioType
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either PMM, Major Shear, Minor Shear or Other indicating the origin of the reported TotalRatio.
Field: Combo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the stress ratio is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field:ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 2 - PMM Details - AASHTO Steel 97

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect

Field is Imported: No
The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PuDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: PhiPnc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: PhiPnt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DBMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: DSMajor
Field is Imported: No
Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMaj

Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMaj

Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb

Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.
Field: MuMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: DBMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: DSMior
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMior
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - AISC-ASD89**

Field: **Frame**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Label of a Frame object.

Field: **DesignSect**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

The current design section for the frame object.

Field: **DesignType**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: Combo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMinor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: T**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: PDsgn
  Field is Imported: No
  Format: Force (Forces section of form)
  Units: Force

  The design axial force.

Field: ffa
  Field is Imported: No
  Format: Stress Output (Stresses section of form)
  Units: Force/Length²

  The design axial stress.

Field: Fa
  Field is Imported: No
  Format: Stress Output (Stresses section of form)
  Units: Force/Length²

  The allowable axial compressive stress.

Field: Ft
  Field is Imported: No
  Format: Stress Output (Stresses section of form)
  Units: Force/Length²

  The allowable axial tensile stress.

Field: MMajDsgn
  Field is Imported: No
  Format: Moment (Forces section of form)
  Units: Force-Length

  The design major moment. This moment includes applicable amplification factors, if any.

  For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffbMajor
  Field is Imported: No
  Format: Stress Output (Stresses section of form)
  Units: Force/Length²

  The design major moment bending stress.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FeMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Cb**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

**Field: MMinDsgn**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: ffbMinor**

- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length^2

The design minor moment bending stress.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FbMinor**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FeMinor**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMajor

| Field is Imported: | No |
| Format:           | Controlled by program |
| Units:            | Unitless |

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E

Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng

Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees
The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: SectClass**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

**Field: FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - AISC-LRFD93**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.
Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation

Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PuDsgn
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored axial force.

Field: PhiPnc
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial compressive force capacity.

Field: PhiPnt
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial tensile force capacity.
Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: B2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MuMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B1Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless
Unitless moment magnification factor for non-sway minor-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B2Minor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: Fy
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The steel yield stress for the design section.

Field: E
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.
Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 2 - PMM Details - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
The factored axial load for the specified combo.

**Field:** MuMajor  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field:** MuMinor  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field:** VuMajor  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field:** VuMinor  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: **MMinRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: **PuDsgn**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: **PhiPnc**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: **PhiPnt**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: **MuMajDsgn**

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B2Major  
Field is Imported: No
Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Cb**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.
Field: MuMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B1Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

**Field: B2Minor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**

Field is Imported: No  
Format: Stress Input (Stresses section of form)
Units: Force/Length$^2$

The steel yield stress for the design section.

**Field: E**

Field is Imported: No  
Format: Stress Input (Stresses section of form)  
Units: Force/Length$^2$

The modulus of elasticity for the design section.

**Field: Length**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The total length of the frame object (not clear length).

**Field: MajAxisAng**

Field is Imported: No  
Format: Angles (Structure Dimensions section of form)  
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: SectClass**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

**Field: FramingType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Details 2 - PMM Details for Pipes - API RP2A-LRFD 97

Field: **Frame**

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.
Field: **TotalRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: **PRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: **MMajRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MMinRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: PuDsgn**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored axial force.

**Field: PhiPnc**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial compressive force capacity.

**Field: PhiPnt**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial tensile force capacity.

**Field: Fxe**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The elastic local buckling strength in stress units.

**Field: Fxc**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The inelastic local buckling strength in stress units.

**Field: Fh**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The hoop stress due to hydrostatic pressure.

**Field: PhiFhc**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
Units: Force/Length\(^2\)

The critical hoop buckling stress.

Field: Fhe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length\(^2\)

The elastic hoop buckling stress.

Field: Fx
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length\(^2\)

The factor fx used in computing the combined axial compression, bending and hydrostatic pressure interaction ratio.

Field: A
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor A used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: B
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor B used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: Eta
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor Eta (greek letter) used in computing the combined axial tension, bending and hydrostatic pressure interaction ratio.

Field: HydroPressu
Field is Imported: No
Format: Force/Area (Forces section of form)
Units: Force/Length\(^2\)

The factored confining hydrostatic pressure.
Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: B1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the...
bending about the section principal axis with the larger moment of inertia.

**Field: B2Major**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: Cb**

- Field is Imported: No
- Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

**Field: MuMinDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PhiMnMin**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B1Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: B2Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the...
bending about the section principal axis with the smaller moment of inertia.

Field:  Fy  
Field is Imported:  No  
Format:  Stress Input (Stresses section of form)  
Units:  Force/Length^2  

The steel yield stress for the design section.

Field:  E  
Field is Imported:  No  
Format:  Stress Input (Stresses section of form)  
Units:  Force/Length^2  

The modulus of elasticity for the design section.

Field:  Length  
Field is Imported:  No  
Format:  Absolute Distance (Structure Dimensions section of form)  
Units:  Length  

The total length of the frame object (not clear length).

Field:  MajAxisAng  
Field is Imported:  No  
Format:  Angles (Structure Dimensions section of form)  
Units:  Degrees  

The angle measured counterclockwise from the local 3-axis to the major axis.

Field:  RLLF  
Field is Imported:  No  
Format:  Controlled by program  
Units:  Unitless  

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field:  SectClass  
Field is Imported:  No  
Format:  Controlled by program  
Units:  Text  

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.
Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 2 - PMM Details - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field:DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field:DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

**Field: PRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

**Field: MMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design axial stress.

Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial tensile stress.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FeMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FeMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The total length of the frame object (not clear length).

**Field: MajAxisAng**
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: SectClass**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

**Field: FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 2 - PMM Details for Pipes - API RP2A-WSD2000

Field: Frame
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  Label of a Frame object.

Field: DesignSect
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  The current design section for the frame object.

Field: DesignType
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
  Field is Imported: No
  Format: Controlled by program
  Units: Text

  This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

  A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
**Field: Location**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: P**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The axial load for the specified combo.

**Field: MMajor**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinor**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMajor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.
Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The design axial stress.
Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable axial tensile stress.

Field: Fxe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The elastic local buckling stress.

Field: Fxc
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The inelastic local buckling stress.

Field: Fh
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The hoop stress due to hydrostatic pressure.

Field: Fhc
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The critical hoop buckling stress.

Field: Fhe
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The elastic hoop buckling stress.
Field: Fx
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The factor Fx used in computing the combined axial compression and hydrostatic pressure interaction ratio.

Field: A
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor A used in computing the combined axial tension and hydrostatic pressure interaction ratio.

Field: B
Field is Imported: No
Format: Controlled by program
Units: Unitless

The factor B used in computing the combined axial tension and hydrostatic pressure interaction ratio.

Field: HydroPress
Field is Imported: No
Format: Force/Area (Forces section of form)
Units: Force/Length^2

The confining hydrostatic pressure.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2
The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field:  FbMajor
Field is Imported:  No
Format:  Stress Output  (Stresses section of form)
Units:  Force/Length²

The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field:  FeMajor
Field is Imported:  No
Format:  Stress Output  (Stresses section of form)
Units:  Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field:  CmMajor
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field:  XKMajor
Field is Imported:  No
Format:  Controlled by program
Units:  Unitless
Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²
The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FeMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless
Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 2 - PMM Details - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force  

The factored minor shear for the specified combo.  

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.  

Field: Tu  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length  

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.  

Field: Equation  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The equation used to obtain the reported ratios.  

Field: TotalRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.  

Field: PRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.  

Field: MMajRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Pac
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial compression force.

Field: Pat
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial tension force.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MaMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PeMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Euler buckling force for major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMaj or
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMaj or
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: MaMin**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PeMin**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The Euler buckling force for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: CmMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

The steel yield stress for the design section.

**Field: E**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length^2

The modulus of elasticity for the design section.

**Field: Length**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The total length of the frame object (not clear length).

**Field: MajAxisAng**
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees
The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
   Field is Imported: No
   Format: Controlled by program
   Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
   Field is Imported: No
   Format: Controlled by program
   Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 2 - PMM Details for Angles - ASCE 10-97

Field: Frame
   Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: Pu**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored axial load for the specified combo.

**Field: MuMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MuMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VuMinor**
- Field is Imported: No
Format: Force (Forces section of form)  
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No  
Format: Controlled by program  
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The axial component of the total PM stress ratio. The total PM stress ratio consists of the sum of the axial and resultant moment components.

Field: MRatio
Field is Imported: No  
Format: Controlled by program  
Units: Unitless
The resultant moment component of the total PM stress ratio. The total PM stress ratio consists of the sum of the axial and resultant moment components.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Pac
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial compression force.

Field: Pat
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The allowable axial tension force.

Field: MDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The resultant factored moment. This moment includes applicable amplification factors, if any.

Field: Ma
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The resultant moment capacity.
Field: Pe
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The Euler buckling force for bending in the resultant moment direction.

Field: Cm
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for bending that is used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

Field: XK
Field is Imported: No
Format: Controlled by program
Units: Unitless

The effective length factor. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

Field: XL
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Myt
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that produces tensile yield at the extreme fiber.

Field: Mb
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that causes lateral buckling.

Field: Myc
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The moment that produces compressive yield at the extreme fiber.

Field: Me
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The elastic critical moment.

Field: LoadAngle
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle between the angle section Z-axis and the resultant load.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 2 - PMM Details - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: FtOrFcDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Pc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance.

Field: Pt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: PcMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance considering buckling about the major axis only.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PcMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance considering buckling about the minor axis only.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MfMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: McMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mb
Field is Imported: No
Format: Controlled by program
Units: Unitless

The buckling resistance moment.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: mMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for major axis bending.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: mLT  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The equivalent uniform moment factor for lateral-torsional buckling.

Field: MfMinDsgn  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: McMinor  
Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length

The minor axis bending moment capacity.

Field: XKMinor  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor

Field is Imported: No
Format: Controlled by program  
Units: Unitless  

Unbraced length factor for buckling about the frame object minor axis.  This item is specified as a fraction of the frame object length.  Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis.  For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: mMinor  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The equivalent uniform moment factor for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis.  For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy  
Field is Imported: No  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

The steel yield stress for the design section.

Field: E  
Field is Imported: No  
Format: Stress Input (Stresses section of form)  
Units: Force/Length²  

The modulus of elasticity for the design section.

Field: Length  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length  

The total length of the frame object (not clear length).

Field: MajAxisAng  
Field is Imported: No  
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 2 - PMM Details - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VuMinor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation

Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless
The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: FtOrFcDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Pc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance.

Field: Pt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MfMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: McMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Mb
Field is Imported: No
Format: Controlled by program
Units: Unitless

The buckling resistance moment.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: mMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

The equivalent uniform moment factor for major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: N
Field is Imported: No
Format: Controlled by program
Units: Unitless

The slenderness correction factor.

Field: MfMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: McMinor
Field is Imported: No
The minor axis bending moment capacity.

**Field: XKMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: mMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The equivalent uniform moment factor for minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - CISC 95**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'SeeWarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: Pu
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VuMinor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Tu**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: CfOrCtDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored axial force.

Field: Cr
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored compressive resistance.

Field: Tr
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored tensile resistance.

Field: MfMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MrMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major moment resistance.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: U1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: U2Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Omega1Major
Field is Imported: No
Format: Controlled by program
Units: Unitless

Coefficient used to determine equivalent uniform major axis bending.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Omega2
Field is Imported: No
Format: Controlled by program
Units: Unitless

Coefficient to account for increased moment resistance due to moment gradient.

Field: MfMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MrMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
**Field: U1Minor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Unitless moment magnification factor for non-sway minor-axis bending moment. Non-sway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: U2Minor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XLMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Omega1Minor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Coefficient used to determine equivalent uniform minor axis bending.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length²

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.
Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 2 - PMM Details - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: **DesignSect**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: **Combo**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **Location**  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **Pu**  
Field is Imported: No  
Format: Force (Forces section of form)
Units: Force

The factored axial load for the specified combo.

Field: MuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the...
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Tu**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

**Field: Equation**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The equation used to obtain the reported ratios.

**Field: TotalRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

**Field: PRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

**Field: MMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: NsdDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Ncrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: Ntrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tension resistance force.

Field: NbrdMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.
Field: **NbrdMinor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The axial compression resistance force.

Field: **MsdMajDsgn**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **McrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major bending full moment resistance.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MvrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major bending reduced resistance moment due to shear.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MbrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length
The major bending buckling resistance moment.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor

Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor

Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: kMajor

Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the major design moment in the interaction equations.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.
Field: \textit{klt}

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Factor applied to the major design moment in the interaction equation checking for failure due to lateral-torsional buckling.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: \textit{C1}

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

A bending coefficient.

Field: \textit{MsdMinDsgn}

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: \textit{McrdMinor}

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The minor bending full moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: \textit{MvrdMinor}

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length


The minor bending reduced resistance moment due to shear.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: kMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the minor design moment in the interaction equations.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - Italian UNI 10011**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: Location**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: Pu**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored axial load for the specified combo.

**Field: MuMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MuMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.
Field: **TotalRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: **PRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: **MMajRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **MMinRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: **SRLimit**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless
The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: NsdDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: Ncrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: Ntrd
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tension resistance force.

Field: NbrdMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: NbrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compression resistance force.

Field: MsdMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: **McrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major bending full moment resistance.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: **MvrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major bending reduced resistance moment due to shear.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: **MbrdMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The major bending buckling resistance moment.

For symmetrical sections major bending is bending about the local 3-
axis. For unsymmetrical sections (e.g., angles) major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: **XKMaj0r**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object local major
axis. This item is specified as a fraction of the frame object length.
Multiplying this factor times the frame object length gives the effective
length for the object.
For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: kMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Factor applied to the major design moment in the interaction equations.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: klt**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Factor applied to the major design moment in the interaction equation checking for failure due to lateral-torsional buckling.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: C1**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
A bending coefficient.

Field: MsdMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: McrdMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending full moment resistance.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: MvrdMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending reduced resistance moment due to shear.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.
For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: kMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Factor applied to the minor design moment in the interaction equations.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - UBC97-ASD**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frame</strong></td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td><strong>DesignSect</strong></td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td><strong>DesignType</strong></td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td><strong>Combo</strong></td>
<td>This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).</td>
</tr>
</tbody>
</table>
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: Location
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: P
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial load for the specified combo.

Field: MMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: T
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

Field: MMajRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: MMinRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: PDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design axial force.

Field: ffa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design axial stress.

Field: Fa
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial compressive stress.

Field: Ft
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable axial tensile stress.

Field: MMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major moment bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FbMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²
The allowable major axis bending stress.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FeMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

Euler stress for major axis bending stress divided by a factor of safety.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XKMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: XLMajor
Field is Imported: No
Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design minor moment bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FbMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²
The allowable minor axis bending stress.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FeMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

Euler stress for minor axis bending stress divided by a factor of safety.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XKMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: XLMMinor
Field is Imported: No
Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: Fy**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length

The steel yield stress for the design section.

**Field: E**
- Field is Imported: No
- Format: Stress Input (Stresses section of form)
- Units: Force/Length

The modulus of elasticity for the design section.

**Field: Length**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The total length of the frame object (not clear length).

**Field: MajAxisAng**
- Field is Imported: No
- Format: Angles (Structure Dimensions section of form)
- Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.
Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: HEQFactor
Field is Imported: No
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: **WarnMsg**

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 2 - PMM Details - UBC97-LRFD**

Field: **Frame**

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: **Combo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the PMM details are reported. It is either the name of a specified design load.
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: Location**

- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: Pu**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored axial load for the specified combo.

**Field: MuMajor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored major bending moment for the specified combo.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MuMinor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored minor bending moment for the specified combo.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMajor**

- Field is Imported: No
- Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Tu
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified combo. This item is reported for information only. It is not used in the design.

Field: Equation
Field is Imported: No
Format: Controlled by program
Units: Text

The equation used to obtain the reported ratios.

Field: TotalRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The total PMM stress ratio. This ratio is the sum of the axial, major moment and minor moment stress ratio components.

Field: PRatio
Field is Imported: No
Format: Controlled by program
The axial component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

**Field: MMajRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: MMinRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor moment component of the total PMM stress ratio. The total PMM stress ratio consists of the sum of the axial, major moment and minor moment components.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: SRLimit**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: PuDsgn**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored axial force.
Field: PhiPnc
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial compressive force capacity.

Field: PhiPnt
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The axial tensile force capacity.

Field: MuMajDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored major moment. This moment includes applicable amplification factors, if any.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiMnMaj
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The major axis bending moment capacity.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: CmMajor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cm, for major axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.
For symmetrical sections, major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles), major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: B1Major**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway major-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections, major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles), major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: B2Major**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway major-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections, major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles), major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XKMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object local major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections, major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles), major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: XLMajor**
- Field is Imported: No
Unbraced length factor for buckling about the frame object major axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections major bending is bending about the local 3-axis. For unsymmetrical sections (e.g., angles) major bending is the bending about the section principal axis with the larger moment of inertia.

Field: Cb
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unitless factor, Cb, used in determining the allowable bending stress.

Field: MuMinDsgn
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The design factored minor moment. This moment includes applicable amplification factors, if any.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiMnMin
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The minor axis bending moment capacity.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: CmMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless
Unitless factor, Cm, for minor axis bending used in determining the stress ratio. It captures the effect of non-uniform moment distribution along the length.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B1Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for non-sway minor-axis bending moment. Nonsway moments are assumed to be those resulting from dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: B2Minor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Unitless moment magnification factor for sway minor-axis bending moment. Sway moments are assumed to be those resulting from all loads except dead and live loads.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: XKMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

Effective length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the effective length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: XLMinor
Field is Imported: No
Format: Controlled by program
Units: Unitless

Unbraced length factor for buckling about the frame object minor axis. This item is specified as a fraction of the frame object length. Multiplying this factor times the frame object length gives the unbraced length for the object.

For symmetrical sections minor bending is bending about the local 2-axis. For unsymmetrical sections (e.g., angles) minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: Fy
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The steel yield stress for the design section.

Field: E
Field is Imported: No
Format: Stress Input (Stresses section of form)
Units: Force/Length^2

The modulus of elasticity for the design section.

Field: Length
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The total length of the frame object (not clear length).

Field: MajAxisAng
Field is Imported: No
Format: Angles (Structure Dimensions section of form)
Units: Degrees

The angle measured counterclockwise from the local 3-axis to the major axis.
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: SectClass
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Compact, Non-Compact, Slender or Too Slender indicating the classification of the section.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: SeisZone
Field is Imported: No
Format: Controlled by program
Units: Text

The seismic zone. This is either Zone 0, Zone 1, Zone 2, Zone 3 or Zone 4.

Field: Omega0
Field is Imported: No
Format: Controlled by program
Units: Unitless

Omega0 factor that is related to seismic force and ductility.

Field: HEQFactor
Field is Imported: No
Format: Controlled by program
Units: Unitless

A multiplier that is applied to all horizontal earthquake loads. This multiplier is applied to the forces obtained from the horizontal component of 1) any static load specified as type Quake, 2) any response spectrum case, and 3) any time history case.

Field: ErrMsg
Field is Imported: No
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: **VMajorCombo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VMajorLoc**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **VMajorRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VuMajDsgn**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMinorRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VuMinDsgn**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PhiVnMin**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: TuMinor**

Field is Imported: No  
Format: Moment (Forces section of form)  
Units: Force-Length
The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 3 - Shear Details - AISC-ASD89**

Field: Frame
Field is Imported: No
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: DesignSect  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: DesignType  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: VMajorLoc

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffvMajor

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor

Field is Imported: No
Format: Stress Output  (Stresses section of form)  
Units: Force/Length2

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TMajor
Field is Imported: No
Format: Moment  (Forces section of form)  
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance  (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor
Field is Imported: No
Format: Force  (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: TMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Field is Imported</th>
<th>Format</th>
<th>Units</th>
<th>Units:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
<td>No</td>
<td>Controlled by program</td>
<td>Text</td>
<td>Text</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
<td>No</td>
<td>Controlled by program</td>
<td>Text</td>
<td>Text</td>
</tr>
<tr>
<td>DesignType</td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
<td>No</td>
<td>Controlled by program</td>
<td>Text</td>
<td>Text</td>
</tr>
<tr>
<td>Status</td>
<td>This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.</td>
<td>No</td>
<td>Controlled by program</td>
<td>Text</td>
<td>Text</td>
</tr>
<tr>
<td>VMajorCombo</td>
<td>This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP). A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination. For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the...</td>
<td>No</td>
<td>Controlled by program</td>
<td>Text</td>
<td>Text</td>
</tr>
</tbody>
</table>
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VuMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless
The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: **FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 3 - Shear Details - API RP2A-LRFD 97**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

**Field: VMajorCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajorLoc**
- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMajorRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VuMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit

Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF

Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType

Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.
Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load.
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TMajor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance  (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor
Field is Imported: No
Format: Force  (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor
Field is Imported: No
Format: Stress Output  (Stresses section of form)
Units: Force/Length2

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
Field is Imported: No
The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 3 - Shear Details - ASCE 10-97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: DesignType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'Overstressed', 'SeeErrMsg', 'SeeWarnMsg', 'SeeErrMsg and WarnMsg', or 'Overstressed and SeeWarnMsg' indicating the design status.

**Field: VMajorCombo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajorLoc**

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VuMajor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: VMajorRatio**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinorLoc**

- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VuMinor**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The factored minor shear for the specified combo.

**Field: VMinorRatio**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The minor shear stress ratio.

**Field: ffvMinor**

- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length2

The design minor shear stress.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
bending about the section principal axis with the smaller moment of inertia.

**Field: FvMinor**

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: TuMinor**

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

**Field: SRLimit**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: RLLF**

Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: FramingType**

Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 3 - Shear Details for Angles - ASCE 10-97**

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VuMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length
The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is used for design.

**Field: VMajorRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless  

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: fvTotalMaj**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²  

The total design major shear stress. This stress is calculated by summing the stresses due to major shear and torsion.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: fvShearMaj**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²  

The design major shear stress not including the effects of torsion.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: fvTorsMaj**

Field is Imported: No  
Format: Stress Output (Stresses section of form)  
Units: Force/Length²  

The shear stress in the major direction due to torsion.
For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

**Field: FvMajor**

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

**Field: VMinorCombo**

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear
data is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination
followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

**Field: VMinorLoc**

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to
the location where output is reported.

**Field: VuMinor**

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor

Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is used for design.

Field: VMinorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvTotalMin

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2

The total design minor shear stress. This stress is calculated by summing the stresses due to minor shear and torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvShearMin

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length^2
The design minor shear stress not including the effects of torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: fvTorsMin
   Field is Imported: No
   Format: Stress Output (Stresses section of form)
   Units: Force/Length^2

The shear stress in the minor direction due to torsion.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: FvMinor
   Field is Imported: No
   Format: Stress Output (Stresses section of form)
   Units: Force/Length^2

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: SRLimit
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
   Field is Imported: No
   Format: Controlled by program
   Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.
Field: FramingType

Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg

Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - BS5950 2000

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType

Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.
Field: Status

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: FvMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PvMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: VMinorLoc**

Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

**Field: VMinorRatio**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FvMinDsgn**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PvMinor**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of inertia.

Field: **TuMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: **SRLimit**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: **RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: **FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - BS5950 90

<table>
<thead>
<tr>
<th>Field</th>
<th>Unit Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field: Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>Field: DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>Field: DesignType</td>
<td>This is either Beam, Brace or Column indicating the frame object design type.</td>
</tr>
<tr>
<td>Field: Status</td>
<td>This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td>Field: VMajorCombo</td>
<td>This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).</td>
</tr>
</tbody>
</table>
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc

- Field is Imported: No
- Format: Absolute Distance (Structure Dimensions section of form)
- Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajDsgn

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PvMajor

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major direction shear capacity.
For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FvMinDsgn**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: PvMinor**

- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: TuMinor**

- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

**Field: SRLimit**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.
Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless
The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VfMajDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VrMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VfMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VrMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The factored minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified
VMinorCombo. This item is reported for information only. It is not
used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are
less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this
factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This
item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc  
Field is Imported: No  
Format: Absolute Distance (Structure Dimensions section of form)  
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VsdMajDsgn  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The design major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the...
bending about the section principal axis with the larger moment of
inertia.

Field: VrdMajor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified
VMajorCombo. This item is reported for information only. It is not
used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear
data is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination
followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VsdMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.
Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 3 - Shear Details - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: DesignType
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length
The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: **VMajorRatio**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VsdMajDsgn**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The design major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **VrdMajor**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear resistance.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **TuMajor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.
Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VsdMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design minor shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VrdMinor
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear resistance.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: TuMinor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.
Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Details 3 - Shear Details - UBC97-ASD

Field: **Frame**
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: **DesignType**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.
Field: VMajorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear for the specified combo.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ffvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The design major shear stress.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: FvMajor
Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length²

The allowable major direction shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorLoc

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMinor

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor shear for the specified combo.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: VMinorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

Field: ffvMinor

Field is Imported: No
Format: Stress Output (Stresses section of form)
Units: Force/Length2

The design minor shear stress.
For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: FvMinor**
- Field is Imported: No
- Format: Stress Output (Stresses section of form)
- Units: Force/Length²

The allowable minor direction shear.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.

**Field: TMinor**
- Field is Imported: No
- Format: Moment (Forces section of form)
- Units: Force-Length

The torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

**Field: SRLimit**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

**Field: RLLF**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

**Field: FramingType**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 3 - Shear Details - UBC97-LRFD**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **DesignType**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either Beam, Brace or Column indicating the frame object design type.

Field: **Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text
This is either 'No Messages', 'Overstressed', 'See ErrMsg', 'See WarnMsg', 'See ErrMsg and WarnMsg', or 'Overstressed and See WarnMsg' indicating the design status.

Field: VMajorCombo

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the major shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VMajorLoc

Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to the location where output is reported.

Field: VMajorRatio

Field is Imported: No
Format: Controlled by program
Units: Unitless

The major shear stress ratio.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: VuMajDsgn

Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The design factored major shear.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: PhiVnMaj
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major direction shear capacity.

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: TuMajor
Field is Imported: No
Format: Moment (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMajorCombo. This item is reported for information only. It is not used in the design.

Field: VMinorCombo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the minor shear data is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

For symmetrical sections minor shear is shear in the local 3-axis direction. For unsymmetrical sections (e.g., angles) minor shear is the shear associated with minor bending. Note that minor bending is the bending about the section principal axis with the smaller moment of inertia.
Field: VMinorLoc
Field is Imported: No
Format: Absolute Distance (Structure Dimensions section of form)
Units: Length

The distance measured from the left end (I-End) of the frame object to
the location where output is reported.

Field: VMinorRatio
Field is Imported: No
Format: Controlled by program
Units: Unitless

The minor shear stress ratio.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: VuMinDsgn
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The design factored minor shear.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: PhiVnMin
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The minor direction shear capacity.

For symmetrical sections minor shear is shear in the local 3-axis
direction. For unsymmetrical sections (e.g., angles) minor shear is the
shear associated with minor bending. Note that minor bending is the
bending about the section principal axis with the smaller moment of
inertia.

Field: TuMinor
Field is Imported: No
Format: Moment  (Forces section of form)
Units: Force-Length

The factored torsion (about the local 1-axis) for the specified VMinorCombo. This item is reported for information only. It is not used in the design.

Field: SRLimit
Field is Imported: No
Format: Controlled by program
Units: Unitless

The stress ratio limit as specified in the preferences. Stress ratios that are less than or equal to this value are considered acceptable.

Field: RLLF
Field is Imported: No
Format: Controlled by program
Units: Unitless

The reduced live load factor. A reducible live load is multiplied by this factor to obtain the reduced live load for the frame object.

Field: FramingType
Field is Imported: No
Format: Controlled by program
Units: Text

The framing type. This is either Moment Frame or Braced Frame. This item is used for ductility considerations in the design.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Steel Details 4 - Continuity Plates - AASHTO Steel 97

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frame</strong></td>
<td>Field is Imported: No, Format: Controlled by program, Units: Text</td>
</tr>
<tr>
<td></td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td><strong>DesignSect</strong></td>
<td>Field is Imported: No, Format: Controlled by program, Units: Text</td>
</tr>
<tr>
<td></td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Field is Imported: No, Format: Controlled by program, Units: Text</td>
</tr>
<tr>
<td></td>
<td>This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.</td>
</tr>
<tr>
<td><strong>Combo</strong></td>
<td>Field is Imported: No, Format: Controlled by program, Units: Text</td>
</tr>
<tr>
<td></td>
<td>This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).</td>
</tr>
<tr>
<td></td>
<td>A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.</td>
</tr>
<tr>
<td><strong>ContPlArea</strong></td>
<td>Field is Imported: No, Format: Area (Section Dimensions section of form), Units: Length2</td>
</tr>
<tr>
<td></td>
<td>The required continuity plate area.</td>
</tr>
<tr>
<td><strong>ErrMsg</strong></td>
<td>Field is Imported: No, Format: Controlled by program</td>
</tr>
</tbody>
</table>
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: ContPlArea  
Field is Imported: No  
Format: Area (Section Dimensions section of form)  
Units: Length²

The required continuity plate area.

Field: ErrMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - AISC-LRFD93

Field: Frame  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: DesignSect  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: Status  
Field is Imported: No  
Format: Controlled by program  
Units: Text
This is either 'No Messages', 'SeeErrMsg', 'See WarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

**Field: Combo**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: ContPlArea**

Field is Imported: No  
Format: Area (Section Dimensions section of form)  
Units: Length^2

The required continuity plate area.

**Field: ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 4 - Continuity Plates - API RP2A-LRFD 97**

**Field: Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text
Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length²

The required continuity plate area.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2
The required continuity plate area.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Details 4 - Continuity Plates - ASCE 10-97

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length2

The required continuity plate area.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Details 4 - Continuity Plates - BS5950 2000

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Table: Steel Details 4 - Continuity Plates - BS5950 90

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **ContPlArea**
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length2

The required continuity plate area.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPIArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length²

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 4 - Continuity Plates - EUROCODE 3-1993**

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length2

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: DesignSect
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   The current design section for the frame object.

Field: Status
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

Field: Combo
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
   Field is Imported: No
   Format: Area (Section Dimensions section of form)
   Units: Length2

   The required continuity plate area.

Field: ErrMsg
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
   Field is Imported: No
   Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 4 - Continuity Plates - UBC97-ASD**

Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: Status
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
- Field is Imported: No
- Format: Area (Section Dimensions section of form)
- Units: Length²
The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 4 - Continuity Plates - UBC97-LRFD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the continuity plate area is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: ContPlArea
Field is Imported: No
Format: Area (Section Dimensions section of form)
Units: Length²

The required continuity plate area.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Steel Details 5 - Doubler Plates - AISC-ASD89

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length
The required doubler plate thickness.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

---

**Table: Steel Details 5 - Doubler Plates - BS5950 2000**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: **Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

Field: **ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 5 - Doubler Plates - BS5950 90**

Field: **Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: **DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.
Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
### Table: Steel Details 5 - Doubler Plates - CISC 95

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - EUROCODE 3-1993

Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

Field: Status
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: Steel Details 5 - Doubler Plates - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 5 - Doubler Plates - UBC97-ASD**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: Combo
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: DblPlThick
Field is Imported: No
Format: Length (Section Dimensions section of form)
Units: Length

The required doubler plate thickness.

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 5 - Doubler Plates - UBC97-LRFD**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'SeeErrMsg', 'SeeWarnMsg', or 'SeeErrMsg and WarnMsg' indicating the design status.

**Field: Combo**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the doubler plate thickness is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: DblPlThick**
- Field is Imported: No
- Format: Length (Section Dimensions section of form)
- Units: Length

The required doubler plate thickness.
Field: **ErrMsg**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

---

**Table: Steel Details 6 - Beam/Column Ratios - AASHTO Steel 97**

Field: **Frame**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: **DesignSect**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: **Status**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **ComboMajor**
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

**Field: ComboMinor**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMin**

- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

**Field: ErrMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**

- Field is Imported: No
- Format: Controlled by program
- Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

### Table: Steel Details 6 - Beam/Column Ratios - AISC-ASD89

#### Field: Frame
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

#### Field: DesignSect
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

#### Field: Status
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

#### Field: ComboMajor
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

#### Field: CBRatioMaj
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 6 - Beam/Column Ratios - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 6 - Beam/Column Ratios - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 6 - Beam/Column Ratios - API RP2A-WSD2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 6 - Beam/Column Ratios - ASCE 10-97**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object. Field is Imported: No</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object. Field is Imported: No</td>
</tr>
<tr>
<td>Status</td>
<td>This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status. Field is Imported: No</td>
</tr>
<tr>
<td>ComboMajor</td>
<td>This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP). Field is Imported: No</td>
</tr>
<tr>
<td>CBRatioMaj</td>
<td>This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP). Field is Imported: No</td>
</tr>
</tbody>
</table>

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field:ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field:WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 6 - Beam/Column Ratios - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

**Field: DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

**Field: Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: ComboMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**

Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

**Field: ComboMinor**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMin**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

**Field: ErrMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

**Field: WarnMsg**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 6 - Beam/Column Ratios - BS5950 90**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

---

**Table: Steel Details 6 - Beam/Column Ratios - CISC 95**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **ComboMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMaj**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: **ComboMinor**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMin**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 6 - Beam/Column Ratios - EUROCODE 3-1993**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: Status**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: ComboMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless
The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).  

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMin  
Field is Imported: No  
Format: Controlled by program  
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: ErrMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: WarnMsg  
Field is Imported: No  
Format: Controlled by program  
Units: Text

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
Units: Text

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: ComboMajor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: CBRatioMaj
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: ComboMinor
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: CBRatioMin
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about
column local 2-axis).

Field: ErrMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error
messages exist then this item is reported as None.

Field: WarnMsg
Field is Imported: No
Format: Controlled by program
Units: Text

Warning messages generated during the design/check, if any. If no
warning messages exist then this item is reported as None.

Table: Steel Details 6 - Beam/Column Ratios - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: Status
Field is Imported: No
Format: Controlled by program
This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

**Field: ComboMajor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMaj**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

**Field: ComboMinor**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: CBRatioMin**
- Field is Imported: No
- Format: Controlled by program
- Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).
Field: **ErrMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

**Table: Steel Details 6 - Beam/Column Ratios - UBC97-LRFD**

Field: **Frame**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: **DesignSect**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: **Status**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This is either 'No Messages', 'See ErrMsg', 'See WarnMsg', or 'See ErrMsg and WarnMsg' indicating the design status.

Field: **ComboMajor**

Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the column/beam strength ratio for column major moment is reported. It is either the name...
of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMaj**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for major moment (bending about column local 3-axis).

Field: **ComboMinor**
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the column/beam strength ratio for column minor moment is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **CBRatioMin**
Field is Imported: No
Format: Controlled by program
Units: Unitless

The column/beam strength ratio for minor moment (bending about column local 2-axis).

Field: **ErrMsg**
Field is Imported: No
Format: Controlled by program
Units: Text

Error messages generated during the design/check, if any. If no error messages exist then this item is reported as None.

Field: **WarnMsg**
Field is Imported: No
Format: Controlled by program
Units: Text
Warning messages generated during the design/check, if any. If no warning messages exist then this item is reported as None.

Table: Steel Details 7 - Beam Shear Forces - AASHTO Steel 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: ComboRight  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force  

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - AISC-ASD89

Field: Frame  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

Label of a Frame object.

Field: DesignSect  
Field is Imported: No  
Format: Controlled by program  
Units: Text  

The current design section for the frame object.

Field: ComboLeft  
Field is Imported: No  
Format: Controlled by program  
Units: Text
This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorLeft**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Field: ComboRight**

Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorRight**

Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.
Table: Steel Details 7 - Beam Shear Forces - API RP2A-WSD2000

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td>DesignSect</td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td>ComboLeft</td>
<td>This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP). A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.</td>
</tr>
<tr>
<td>VMajorLeft</td>
<td>The major shear at the beam left end (I-End). For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.</td>
</tr>
<tr>
<td>ComboRight</td>
<td></td>
</tr>
</tbody>
</table>

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the
beam right end (J-end) is reported. It is either the name of a specified
design load combination, or the name of a specified design load
combination followed by (SP).

A design load combination name followed by (SP) indicates that the
design loads were obtained by applying special, code-specific, seismic
multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis
direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the
bending about the section principal axis with the larger moment of
inertia.

Table: Steel Details 7 - Beam Shear Forces - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text
The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text
This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - CISC 95

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - EUROCODE 3-1993

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Table: Steel Details 7 - Beam Shear Forces - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboLeft
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight
Field is Imported: No
Format: Force (Forces section of form)
Units: Force
The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

### Table: Steel Details 7 - Beam Shear Forces - UBC97-ASD

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

The current design section for the frame object.

**Field: ComboLeft**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: VMajorLeft**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: **ComboRight**

- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **VMajorRight**

- **Field is Imported:** No
- **Format:** Force (Forces section of form)
- **Units:** Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Table: Steel Details 7 - Beam Shear Forces - UBC97-LRFD**

Field: **Frame**

- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

Label of a Frame object.

Field: **DesignSect**

- **Field is Imported:** No
- **Format:** Controlled by program
- **Units:** Text

The current design section for the frame object.
Field: ComboLeft

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam left end (I-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorLeft

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam left end (I-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

Field: ComboRight

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the shear at the beam right end (J-end) is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: VMajorRight

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The major shear at the beam right end (J-End).

For symmetrical sections major shear is shear in the local 2-axis direction. For unsymmetrical sections (e.g., angles) major shear is the
shear associated with major bending. Note that major bending is the bending about the section principal axis with the larger moment of inertia.

**Table: Steel Details 8 - Brace Max Axial Load - AASHTO Steel 97**

**Field: Frame**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  Label of a Frame object.

**Field: DesignSect**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  The current design section for the frame object.

**Field: ComboComp**
- Field is Imported: No
- Format: Controlled by program
- Units: Text

  This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

  A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

**Field: PMaxComp**
- Field is Imported: No
- Format: Force (Forces section of form)
- Units: Force

  The largest compression axial force in the brace.

**Field: ComboTens**
- Field is Imported: No
- Format: Controlled by program
- Units: Text
This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - AISC-ASD89

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.
Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - AISC-LRFD93

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - API RP2A-LRFD 97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.
Field: DesignSect
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   The current design section for the frame object.

Field: ComboComp
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force

   The largest compression axial force in the brace.

Field: ComboTens
   Field is Imported: No
   Format: Controlled by program
   Units: Text

   This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

   A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
   Field is Imported: No
   Format: Force (Forces section of form)
   Units: Force

   The largest tension axial force in the brace.
### Table: Steel Details 8 - Brace Max Axial Load - API RP2A-WSD2000

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frame</strong></td>
<td>Label of a Frame object.</td>
</tr>
<tr>
<td><strong>DesignSect</strong></td>
<td>The current design section for the frame object.</td>
</tr>
<tr>
<td><strong>ComboComp</strong></td>
<td>This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP). A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.</td>
</tr>
<tr>
<td><strong>PMaxComp</strong></td>
<td>The largest compression axial force in the brace.</td>
</tr>
<tr>
<td><strong>ComboTens</strong></td>
<td>This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).</td>
</tr>
</tbody>
</table>
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - ASCE 10-97

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.
Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - BS5950 2000

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - BS5950 90

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.
Field: ComboComp

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - CISC 95

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text
Label of a Frame object.

Field: **DesignSect**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

The current design section for the frame object.

Field: **ComboComp**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxComp**  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force

The largest compression axial force in the brace.

Field: **ComboTens**  
Field is Imported: No  
Format: Controlled by program  
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: **PMaxTens**  
Field is Imported: No  
Format: Force (Forces section of form)  
Units: Force
The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - EUROCODE 3-1993

- **Field: Frame**
  - Field is Imported: No
  - Format: Controlled by program
  - Units: Text

  Label of a Frame object.

- **Field: DesignSect**
  - Field is Imported: No
  - Format: Controlled by program
  - Units: Text

  The current design section for the frame object.

- **Field: ComboComp**
  - Field is Imported: No
  - Format: Controlled by program
  - Units: Text

  This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

  A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

- **Field: PMaxComp**
  - Field is Imported: No
  - Format: Force (Forces section of form)
  - Units: Force

  The largest compression axial force in the brace.

- **Field: ComboTens**
  - Field is Imported: No
  - Format: Controlled by program
  - Units: Text

  This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - Italian UNI 10011

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - UBC97-ASD

Field: Frame
Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect
Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load
combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens

Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens

Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.

Table: Steel Details 8 - Brace Max Axial Load - UBC97-LRFD

Field: Frame

Field is Imported: No
Format: Controlled by program
Units: Text

Label of a Frame object.

Field: DesignSect

Field is Imported: No
Format: Controlled by program
Units: Text

The current design section for the frame object.

Field: ComboComp
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the compression axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxComp
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest compression axial force in the brace.

Field: ComboTens
Field is Imported: No
Format: Controlled by program
Units: Text

This identifies the design load combination for which the tension axial force is reported. It is either the name of a specified design load combination, or the name of a specified design load combination followed by (SP).

A design load combination name followed by (SP) indicates that the design loads were obtained by applying special, code-specific, seismic multipliers to part of the specified design load combination.

Field: PMaxTens
Field is Imported: No
Format: Force (Forces section of form)
Units: Force

The largest tension axial force in the brace.