#### **Steel Construction Workshop in Hanoi 2007**

# Outline of Bridge Foundation using Steel Materials in Japan :Steel Pipe Pile, Steel pipe sheet pile etc

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#### Domestic Demand of Steel Pile in Japan





## Application Ratio by Diameter & Lengtl of Steel Pipe Pile

#### Diameter (mm)

#### Length (m)





#### **2.Foundation of Railway Bridge** Another Specifications Prepared

## **Types of Bridge Foundation**

Foundation Type	Schematic	Use of Steel pipe Pile	Suitability on SOft Ground	Ecology 1.Soil Disc 2.Cement	Phase harge Milk
Spread (Popular)			No	1.Less so 2.No use	oil
Pile (Popular)		0	0	Steel 1.No/Less 2.No/Less	Site-in-situ 1.Much 2.Much
Steel pipe sheet pile (Increasing)		0	0	1.No/ 2. No/	Less 'Less
Caisson (Decreasing)	F		0	1.Mu 2. M	uch uch

### Installation Method of Steel Pipe Pile : Driven



### Installation Method of Steel Pipe Pile : Bored, Rotated

Method		Schematic	Points
Center bored	with solid cemented soil at toe	Auger machine Steel pipe pile Cemented soil	*Speedy *Many examples
	composite of pipe & cemented soil	<b>Steel pipe Cemented soil</b>	*High shaft resistance
Rotated	with blade at end	Rotated by torque Blade	*No cement- ed milk *Ecological

## **Technical Issues** in Bridge Foundation

- **1.Environmental Issue**
- #Reduction in Vibration & Noise
- #Less Discharge of Soil &Waste

2. Raise in Competitiveness



- \*Higher Bearing Capacity \*Battered pile \*High-strength Joint for Large-scale Found. \*Large-dia. Pile
- **3.New Market Development** 
  - \* Remedy for Deterioration
- **4.Liquefaction Countermeasure**
- **5.Anti-corrosion**

\*One Hundred Duration Method( for splash zone)

## Large-sized Development Project

1.Tokyo Port Seaside Road PJ Steel pipe pile & Steel pipe sheet pile ; 60,000tons [under const.] 2.Haneda Airport Re-expansion PJ Steel pipe pile & Steel pipe sheet pile ; 180,000tons [started this year] 3.Shinkansen Extension PJ (Area ;Hokuriku ,Hokkaido etc)

Steel pipe pile; considerable amount expected