

**Technical Specification for Supply, Installation, Testing & Commissioning of Chemical Earthing Systems at Narwapahar**

**Earth Electrode**

Qty - 10 Nos. (Ten)

Sl. No.	Description	Requirement
1	Size of Earth Electrode	Diameter : 5/8 inch Length : 10 feet (3 Meter)
2	Material	<b>Copper Bonded steel Rod</b> with copper bonding thickness not less than 250 microns.
3	Identification	Length, Diameter & Company Name must be stamped in the Rod
4	Corrosion Resistance	The Earth Electrode shall not be corroded due to the water & other components of soil
5	Electrical Resistance	The Earth electrode should provide the lowest possible resistance to ground

**Ground Fill Material**

Sl. No.	Description	Requirement
1	Conductivity	It should be highly conductive between earth electrode & ground contact area.
2	Thermal Conductivity	The Ground fill material should be stable between -60 degree to +60 degree
3	Corrosion	It shall be non-corrosion and having low solubility (0.2% max)
4	Stability	The ground fill material shall be permanent and maintenance free requiring no charge with salts or chemicals.
5	Earth Resistance of Pit	It shall be ensured that the earth resistance of the pit shall not be more than 2 Ohms. It shall be measured by an approved earth testing apparatus for individual earth pits after completion of installation.
6	Quantity	Ground fill material must be filled as per the OEM standard for minimum of 20KG/earth pit.

**Copper Strip**

Sl. No.	Description	Requirement
1	Dimension	Width : 25mm, Thickness : 6mm Length : 5 meter per Earth Pit
2	Purity	Purity of Copper shall not be less than 90%. A test certificate in support of the purity of copper should be submitted at the time of supply.
3	Connection	The copper strip must be connected between the earth rod in the inspection chamber and the existing earthing termination at the wall and must be routed in a depth of <b>one feet underground</b> . Stainless steel U Shaped bolts with copper rods must be used for connection wherever required.

**Earth Inspection Chamber**

Sl. No.	Description	Requirement
1	Dimension	Length : 300mm, Breadth : 300mm, Depth : 300mm
2	Material	Concrete (or) prefabricated inspection chamber of same dimension.
3	Steel Lid	Over the inspection chamber, a steel lid painted in black (approx. thickness 6mm) should be provided.
4	Identification	On the top of the lid, name of Installation, date of testing & measured earth resistance values must be painted in yellow in black background.

  
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