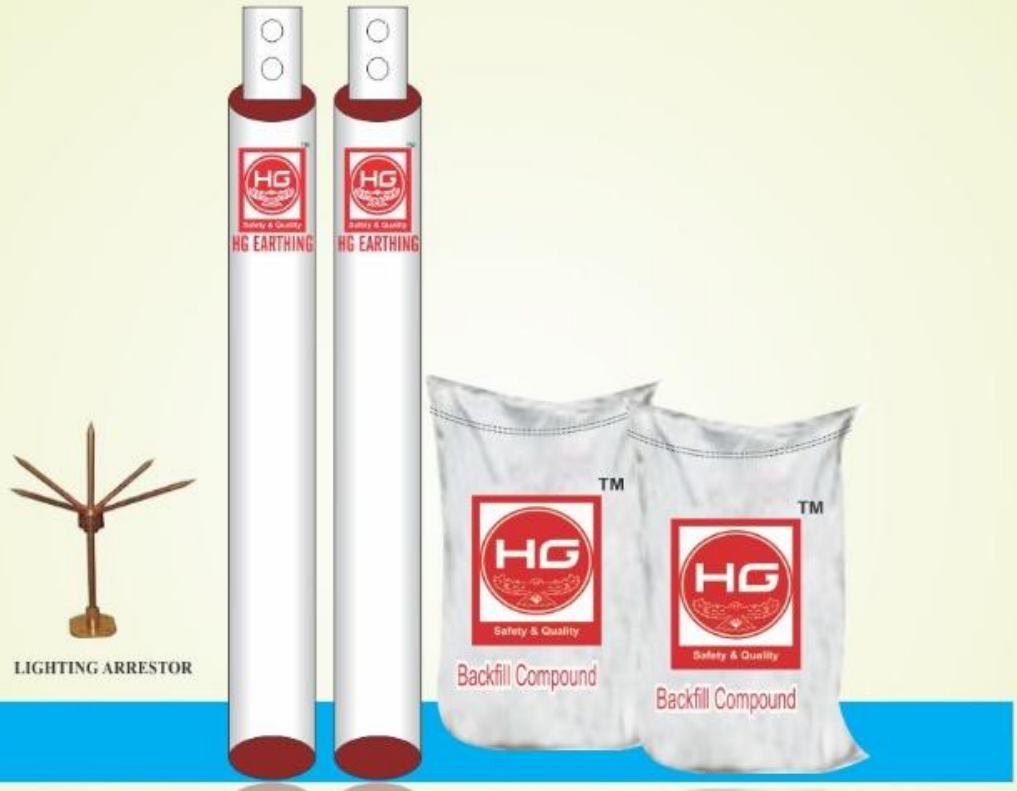
Earthing Solutions

(Safety Domestic, Commercial & Machinery)

Industry | Hotels | Mall | Datacenters | Residential | Retail | Airport | Hospital | Commercial Buildings

A Maintenance Free Earthing Material

Earthing Electrode



[C. P. R. I. Tested Product]

NORWEGIAN ACCREDITATION MSYS 013 — Registered Care

TM

Safety & Quality

HG EARTHING

An ISO 9001: 2008 Certified Organization

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AN ISO 9001:2008 Certified Company

HG IMMACULATE QUALITIES OF EARTHING SYSTEM

COMPREHENSIVE RANG OF EARTHING ELECTRODE

* INTRODUCTION *

Grounding (or earthing) is the art of making an electrical connection to the earth. The process is a combination of science and "art" as opposed to pure science, because it is necessary to " test the option," as opposed to using predetermined methods and calculations, The options for each site must be determined through visualization and evaluation, individually, using a related analytical process.
The earth must be treated as a semiconductor, while the grounding electrode itself is a pure conductor. These factors make the design of an earthing system complex, not derived from a simple calculation of the random driving of a few rods into the soil. Knowledge of the local soil conditions is mandatory and is the first step in the design The includes its moisture content. temperature, and resistivity under a given set of conditions

* ADVANTAGES *

- Safety and Reliability
- Low impedance Earthing
- Ensures Safety of life and property from earth related electrical hazards
- Longer service life than conventional earthing systems
- Corrosion resistant

BACKFILL COMPOUND

Our backfill compound called as "Conductive Grounding Minerals" which will be used around the earth electrodes at the time of installation. Conductive grounding minerals is a combination of graphite, natural earth minerals, etc which is of hygroscopic property to retain the moisture for a long time. During installation with proper water pouring, the Conductive grounding minerals will convert into the gel formation and its quality to retain the moisture up to twenty times its dry volume as well as it create a gel layer surrounding of our electrode our backfill compound is not soluble in water, moisture property up to the life of the electrode which is more then 25 years. material is soil friendly Conductive grounding minerals is a combination of totally corrosion free and highly conductive & non-corrosive minerals.

* EARTH RESISTANCE *

Earth Resistance and How it should be low

- No electric circuit either single phase or three phases is complete without proper earthing
- The earthing or grounding is associated with Earthing strips, earth plate,
- Electrodes Fastening or welding Proper
- Resistance of Earth, Resistivity of Soil
- Unless all these are stable & healthy the word good earthing will have no meaning or value. To understand why earthing resistance must be low, use ohm' law.

$V \propto I$

$V = R \times I$ (Where, V is Voltage in Volts an R is Resistance in Ohm and I is current in ampere.)

$R = \varrho L / A$ (Where, R is resistance of electrode, ϱ is substance of electrode, L is length of electrode, A is Area of electrode)

$R = R^{\circ}(1 + \propto \Delta T$ (where, ΔT is Changing temperature, $\propto$ is temperature coefficient)

(If Temperature is down than resistance will be less)

(A) EARTH RESISTANCE DEPENDS ON FOLLOWING FACTORS

Temperature of Earth
Type of earth soil
Minerals in Earth
Humidity in Earth
Electrode shape and size
Length of electrode in the earth.
Electrode shape and size
Number of electrodes.
Distance between two electrodes

(B) MAXIMUM EARTH RESISTANCE IS FOLLOWED AS BELOW:

L.T. lighting Arresters 4 Ω
Major power stations 0.5 Ω
Major sub stations 1.0 Ω
Service connection 4 Ω
Minor sub stations 2 Ω
Neutral bushing 2 Ω
Towers 20-30 Ω
H.T. Poles 10 Ω
L.T. Poles 5 Ω

☛ **Model HG A/B/S : A - Length 3 Meter : B - Length 2 Meter : S - Length 1 Met**

COMPOUND ROUNDER/SPIKE EARTHING SYSTEM

* TECHNOLOGY OF EARTHING ELECTRODES *

TYPES OF PRODUCT (GI, COPPER & COPPER COATED)

TECHNOLOGY OF GI MODEL

(A) " PIPE-IN-PIPE" TECHNOLOGY

(Outer Pipe, Inner pipe are made by G.I.)

This Technology Concept involves two B or C Class pipe and 2 to 3 mm thick plate G.I. system are subject to hot dip galvanization: 70-100 micron on the outer electrode 200-250 microns inside the electrodes The empty space inside the electrode fully field with a specially developed Crystalline, Hygroscopic, Conductive Mixture sealed. Earthing Electrode must be cylindrical. (As per I.S.)

TECHNICAL SPECIFICATION

MODEL	LENGTH (mm)	OUTER DIA.	INNER PIPE	TERMINAL
HG-40 A/B	3000/2000	40 mm	20mm/-	40x6
HG-50 A/B/S	3000/2000/1000	50 mm	20mm/-	40x6
HG-65 A/B/S	3000/2000	65 mm	20mm/-	50x6
HG-80 A/B/S	3000/2000	80 mm	20mm/-	50x6

❖ **"PIPE WITH PLATE" TECHNOLOGY**

(Outer Pipe and Inner plate are made by G.I. divided inner pipe four part and structure made arrow shaped)

MODEL	LENGTH (mm)	OUTER DIA.	INNER STRIP	TERMINAL
HG-40 A/B	2000/3000	40 mm	25x3	40x6
HG-50 A/B	2000/3000/1000	50 mm	25x3	40x6
HG-65 A/B	2000/3000	65 mm	25x3	50x6
HG-80 A/B	2000/3000	80 mm	25x3	50x6

❖ **"PIPE TECHNOLOGY**

(Outer Pipe made by G.I.

MODEL	LENGTH (mm)	OUTER DIA.	TERMINAL
HG-40 A/B	2000/3000	40 mm	40x6
HG-50 A/B	2000/3000/1000	50 mm	40x6
HG-65 A/B	2000/3000	65 mm	50x6
HG-80 A/B	2000/3000	80 mm	50x6

TECHNOLOGY OF COPPER MODEL

(A) " PIPE-IN-PIPE" TECHNOLOGY

(Outer Pipe, Inner pipe are made by Copper)

This Technology Concept involves Copper pipe system The empty space inside the electrode fully field with a specially developed Crystalline, Hygroscopic, Conductive Mixture sealed. Earthing Electrode must be cylindrical.

TECHNICAL SPECIFICATION

MODEL	LENGTH (mm)	OUTER DIA.	INNER PIPE	TERMINAL
HG-40 A/B	3000/2000	40 mm	20mm/-	25x3
HG-50 A/B/S	3000/2000/1000	50 mm	20mm/-	40x3
HG-65 A/B/S	3000/2000	65 mm	20mm/-	40x3
HG-80 A/B/S	3000/2000	80 mm	20mm/-	40x6

❖ **"PIPE WITH PLATE" TECHNOLOGY**

(Outer Pipe and Inner plate are made by Copper divided inner pipe four part and structure made arrow shaped)

MODEL	LENGTH (mm)	OUTER DIA.	INNER STRIP	TERMINAL
HG-40 A/B	2000/3000	40 mm	25x3	25x3
HG-50 A/B	2000/3000/1000	50 mm	25x3	40x3
HG-65 A/B	2000/3000	65 mm	25x3	40x3
HG-80 A/B	2000/3000	80 mm	25x3	40x6

❖ **"PIPE TECHNOLOGY**

(Outer Pipe made by Copper

MODEL	LENGTH (mm)	OUTER DIA.	TERMINAL
HG-40 A/B	2000/3000	40 mm	25x3
HG-50 A/B	2000/3000/1000	50 mm	40x3
HG-65 A/B	2000/3000	65 mm	40x3
HG-80 A/B	2000/3000	80 mm	40x6

TECHNOLOGY OF COPPER BONDED MODEL

(A) " PIPE-IN-PIPE" TECHNOLOGY

(Outer Pipe, Inner pipe are made by Copper Bonded)

This Technology Concept involves Copper Bonding system The empty space inside the electrode fully field with a specially developed Crystalline, Hygroscopic, Conductive Mixture sealed. Earthing Electrode must be cylindrical.

TECHNICAL SPECIFICATION

MODEL	LENGTH (mm)	OUTER DIA.	INNER PIPE	TERMINAL
HG-40 A/B	3000/2000	40 mm	20mm/-	25x3
HG-50 A/B/S	3000/2000/1000	50 mm	20mm/-	40x3
HG-65 A/B/S	3000/2000	65 mm	20mm/-	40x3
HG-80 A/B/S	3000/2000	80 mm	20mm/-	50x6

❖ **"PIPE WITH PLATE" TECHNOLOGY**

(Outer Pipe and Inner plate are made by Copper divided inner pipe four part and structure made arrow shaped)

MODEL	LENGTH (mm)	OUTER DIA.	INNER STRIP	TERMINAL
HG-40 A/B	2000/3000	40 mm	25x3	25x3
HG-50 A/B	2000/3000/1000	50 mm	25x3	40x3
HG-65 A/B	2000/3000	65 mm	25x3	40x3
HG-80 A/B	2000/3000	80 mm	25x3	50x6

❖ **"PIPE TECHNOLOGY**

(Outer Pipe made by Copper Bonded

MODEL	LENGTH (mm)	OUTER DIA.	TERMINAL
HG-40 A/B	2000/3000	40 mm	25x3
HG-50 A/B	2000/3000/1000	50 mm	40x3
HG-65 A/B	2000/3000	65 mm	40x3
HG-80 A/B	2000/3000	80 mm	50x6
HG-17.2A	2000/3000	17.2	50x6
HG-14.2A	2000/3000	14.2	25x6

HG Copper Bonded Grounding Rods help in dissipating the fault current to help your assets being damaged from the hazards of the same. HG is a pioneer in manufacturing copper clad steel grounding rods with a remarkable production capacity. The copper layer in these rods is extremely helpful in extreme soil conditions such as high salt or moisture content, where the copper provides high corrosion resistance and exceptionally long life to the steel rods. Our Copper Bonded Electrodes are available 100 to 250 microns copper coating.