

# Maintenance Free Earthing

TESTED BY CPRI



CONFORMS TO IS:3043-1987  
& IS/IEC 62305-3:2010  
STANDARDS

MAP WORLDWIDE SERVICES®

*Standard Bearers of Excellence*

ISO 9001:2008 & 14001:2004 COMPANY



### WHY EARTHING

Electrical Earthing is necessary for safety of human lives, structures and electrical equipment. Protection of human lives is of utmost importance. To ensure safety, the earthing system has to provide a point of lowest potential, since electricity or lightning will always flow to the lowest potential point.

The same principle is used to provide safety to structures and equipment. A live conductor in contact with a structure is a danger to human life. Similarly, if a fault current is not grounded by providing it with a safe, controlled path to a low resistivity earthing system, the current will bounce back into the electrical system causing damage to equipment. This damage results in loss of productivity and also leads to replacement cost.

### THE EARTHING SYSTEM

We offer maintenance free earthing system which maintains low resistivity over a long period of time. The system comprises of 250μ Copper Bonded earth rods as conductors, Single piece couplers and Earth rod Connectors along with Earth Enhancing Compounds.

### COPPER BONDED EARTH RODS

MAP Copper bonded steel rods conform to quality specified in IS/IEC 62305-3:2010, IS 3043:1989, BS 6651, BS 7430 and UL 467 standards. MAP Copper bonded rods have a permanent molecular copper bonding with high grade steel. The molecular bonding ensures that the copper layer will not slip or tear when driven ; nor will it crack if the rod is bent. The copper layer provides high fault current capacity. The high grade steel core provides greater tensile strength, imparting deep driving capability.



MAP 250 micron Copper Bonded Earth rods are available in following sizes :

- 5 feet (1.5 Meter) Length x 5/8" Dia.
- 6½ feet ( 2 Meter) Length x 5/8" Dia
- 10 feet ( 3 Meter) Length x 5/8" Dia.

### BRASS COUPLERS

Both ends of MAP copper bonded rods are threaded, hence two rods can be joined by a coupler. This is extremely convenient for transportation and also useful for deep driven earthing. MAP coupler is manufactured from a solid bar stock brass, imparting the necessary strength between joints. The depth of the earthing can be increased as required by joining a number of rods with MAP threaded coupler.



### EARTH ENHANCING COMPOUNDS

The application of earth enhancing compounds around the conductors in the earthing system provides the desired low resistivity, resulting in an effective earthing system.

MAP Compounds are eco-friendly, stable under all soil conditions, easy to install and require ZERO maintenance. They conform to IEEE 80-2000 CLAUSE 14.5 D & IS:3043-1987 standards.

The average life expectancy of MAP earthing comprising copper bonded rods and earth enhancing compounds is more than 25 years, hence it is a cost-effective solution as compared to a conventional earthing.

**MAP** Earth Enhancing Compounds comprise of specifically selected natural compounds. They have to be mixed with water and poured around the conductor. Greslo/Greslo Plus/Terras form a mass around the conductor, increasing the conductive mass. This mass possesses excellent electrical conductivity, which absorbs moisture from the surrounding soil, while retaining its own properties during monsoon season. It also prevents the copper bonding from oxidation, increasing the life of the earthing.

**GRESLO** is a superior compound, specially formulated for use in normal soils. Greslo retains moisture for a long period of time. Greslo forms a protective shield around the MAP copper bonded earth rod, increasing its life and maintains the soil resistivity within chosen parameters.

**GRESLO PLUS+** is premium compound, specially formulated for use in low water retention soils. Greslo Plus retains moisture for extended period of time, protecting the copper bonded earth rod, thereby improving and maintaining the integrity of earthing system.

**TERRAS** is designed for replacement of traditional salt and charcoal earthing, where cost is a major constrain and where the effective life of the earthing in normal soil conditions required is 10-15 years.

All Earth Enhancing Compounds are available in moisture proof bags.



MAP®  
GRESLO® / GRESLO Plus+ / TERRAS



### TERMINATION

#### Earth Rod Connector

**MAP®** E.R.C. is a single piece connector which is screwed on to the earth rod. This eliminates various moving parts which are integral to a clamp, minimizing maintenance.

The E.R.C. has a provision to connect copper strip or cable lug by a S.S. nut & bolt arrangement.



### MAP EARTH INSPECTION PIT

Traditional inspection pits involve mixing of sand and cement with required proportion of water which is used for making brickwork. So you need sand, cement, water, bricks and mason for making the chamber. You also need a C.I/ M.S cover to be fixed, which corrodes over time.

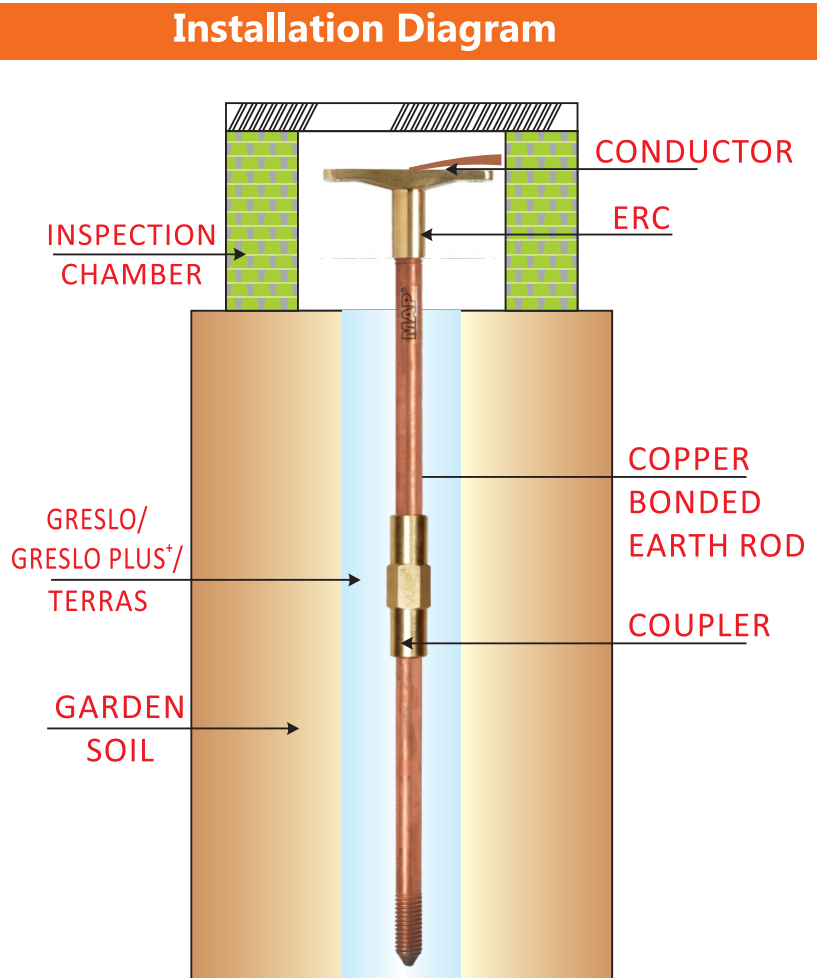
**MAP®** offers FRP (Fiber Reinforced Plastic) earth inspection pits. MAP earth inspection pits are very easy to install, they do not require the services of a mason, are non- corrosive and have a long life. Plus, they have been tested and certified by GOVT. of INDIA'S NATIONAL TEST HOUSE for load carrying capacity of MORE THAN 6.5 METRIC TONS.



## Installation Instructions

The application of **GRESLO®/GRESLO PLUS<sup>+</sup>/TERRAS** for a driven earth rod involves the following steps:-

1. Drill or auger a 75mm-150mm(approx.) diameter hole to a depth of 150mm less than the length of the copper bonded earth rod to be installed.
2. Saturate the hole by dousing with water.
3. Place the earth rod into a central position in the hole and drive the rod 300mm if possible into the soil at the bottom of the hole.
4. Mix **GRESLO®/GRESLO PLUS<sup>+</sup>/TERRAS** in the proportion of 1 Litre of water per kg of compound. This proportion will vary as per soil conditions.
5. Immediately pour the mixture directly into augured hole.
6. Repeat steps 4 and 5 in accordance with recommended number of applications of **GRESLO®/GRESLO PLUS<sup>+</sup>/TERRAS**.
7. Backfill the empty space in the hole with excavated soil/garden soil.



## OTHER PRODUCTS : STORMKING ESE & SENTINELS ACT RANGE OF TERMINALS - LIGHTNING STRIKE RECORDER



For details kindly visit our Website: [www.mapwws.com](http://www.mapwws.com) or contact us.



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H. O. : I, Divya Vinayak, Behind Lilac Garden,  
Ganesh Chowk, Charkop Link Road,  
Kandivali (W), Mumbai-400067. INDIA  
Telefax : +91-22-2867 8467 / 8671 / 8674

Branch : 912, Anand Mangal - III,  
Opp. Core House,  
Ambavadi, Ahmedabad - 380006.  
Telefax : +91-79-26423901

E-Mail : [techsupport@mapwws.com](mailto:techsupport@mapwws.com), [sales@mapwws.com](mailto:sales@mapwws.com), [info@mapwws.com](mailto:info@mapwws.com)

