FARADEL EARTHING ELECTRODES

FARADEL™
EARTHING | LIGHTNING PROTECTION

Maintenance Free Electrodes

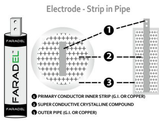
The Faradel range of maintenance free electrodes are designed to withstand highest levels of corrosion. These electrodes are capable of safely dissipating high magnitude fault currents safely to the ground. Manufactured from superior quality galvanized steel / copper pipes, these electrodes are extremely robust and built to last for a lifetime. The conductive compound filled inside these electrodes not only increases the surface area but also prevents the corrosion of the primary conductor. Available in two variants, strip-in-pipe & pipe-in-pipe these electrodes are tested by Central Power Research Institute (CPRI) and surpass the requirements of IS-3043.

Faradel Earthing Electrodes

GI ELECTRODES — **GI STRIP IN PIPE ELECTRODES**

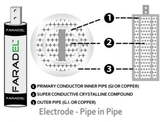
MODEL	Length	Pipe Dia	Strip Size
G-150	1000 mm	50 mm	40 x 6 x 1000mm
G-240	2000 mm	40mm	25 x 6 x 2000mm
G-250	2000 mm	50 mm	40 x 6 x 2000mm
G-280	2000 mm	80 mm	50 x 6 x 2000mm
G-340	3000 mm	40 mm	25 x 6 x 3000mm
G-350	3000 mm	50 mm	40 x 6 x 3000mm
G-380	3000 mm	80 mm	50 x 6 x 3000mm

Electrode - Strip in Pipe



GI ELECTRODES — **GI PIPE IN PIPE ELECTRODES**

MODEL	Length	Outer Pipe Dia	Inner Pipe Dia	Strip Size
G-250 PIP	2000 mm	50 mm	40 mm	25 x 6 mm
G-280PIP	2000 mm	80 mm	50 mm	40 x 6 mm
G-350PIP	3000 mm	50 mm	40 mm	25 x 6 mm
G-380PIP	3000 mm	80 mm	50 mm	40 x 6 mm



Electrode - Pipe in Pipe

COPPER ELECTRODES

MODEL	Length	Pipe Dia	Pipe Type	Primary Conductor	Strip Size
GC-150	1000 mm	50 mm	GI	Copper Strip	40 x 6 x 1000 mm
GC/CC-250	2000 mm	50 mm	GI / Cu	Copper Strip	40 x 6 x 2000 mm
GC/CC-280	2000 mm	80 mm	GI / Cu	Copper Strip	50 x 6 x 2000 mm
GC/CC-350	3000 mm	50 mm	GI / Cu	Copper Strip	40 x 6 x 3000 mm
GC/CC-380/ 375	3000 mm	80 / 75 mm	GI / Cu	Copper Strip	50 x 6 x 3000 mm

MADE TO ORDER

You have your own specifications for Earthing Electrodes???. Give it to us, and we will tailor-make it for your. Various terrains pose various challenges for making an earth pit. We understand that it sometimes becomes difficult to choose from standard sizes. Give us the size you need and we will have it ready for you.

FARADEL EARTHING COMPOUND

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The most important factor governing the earth resistance value of an earthing system is the soil resistivity. If the soil resistivity is high, the earth resistance will be high, irrespective of the type & size of earthing electrode used.

Keeping in mind the shortcomings of the conventional backfill materials Faradel advanced earthing compound was developed after extensive research and field studies by our engineers. Following are the salient features of the product.

Features

- Highly conductive earth-pit backfill
- Reduces soil resistivity by upto 90%
- Non- corrosive
- Independent of ambient moisture content, hence works in all weather conditions
- Compatible with all types of earthing electrodes, be it pipes, plates or rods of any metal.
- Can also be used in trenches made for horizontal type earthing systems.
- Increases the total surface area of the earthing electrode ensuring quick dissipation of fault currents.
- Maintains constant volume regardless of moisture content. Faradel Eathing Compound doesn't shrink or expand. It maintains constant contact with electrode and surrounding soil.
- Long shelf life; can be stored for very long periods without deterioration.
- Environmental friendly; does not pollute or contaminate the water table.

How It Works

In the event of a fault, the fault current will try to dissipate into the ground through the earth connection. All metals are good conductors of electricity, hence the fault current easily passes through the earthing conductor and the earthing electrode. The fault current faces major obstruction only at the interface of the earthing electrode and surrounding soil.

Researchers from around the world have proved that, if the soil immediately surrounding the electrode is replaced with a conductive material, the resistance of this interface can be considerably reduced.

As seen from the relation, the earth resistance, r, of a given earth electrode is directly proportional to soil resistivity (p). Lower the value of soil resistivity, lower will be the earth resistance of the electrode.

Therefore by using Faradel advanced earthing compound as backfill, the value of soil resistivity (p) can be considerably reduced. This in turn will reduce the earth resistance (R) of the electrode. this also reduces the number of electrodes required to achieve a particular earth resistance, thereby making the entire earthing system, efficient, durable and cost-effective.

$$R = \frac{p}{1.915L}\left[\ln\frac{96L}{d} - 1\right] \text{ ohms}$$

Where
p= Soil resistivity in ohm-meters
L= The electrode length in feet
d= The electrode diameter in inches

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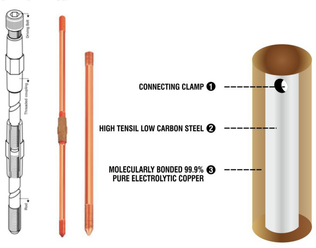
Copper Bonded Earth-rods

Manufactured from high tensile low carbon steel by molecularly bonding 99.9% pure electrolytic copper, there earth rods conform to BS 4360 grade 43A. Each rod is treated with Benzol triozole derivatives to prevent oxidation of copper bonding. The threads are formed by roll threading process which ensure strength and maintain the molecularly bonded copper along the full length of the threads. The rods can be deep driven manually or by using power hammer.

MODEL	Length (mm)	Rod Dia (mm)	Rod Dia (inches)
CBR-414	1200	14.2	5/8"
CBR-417	1200	17.2	3/4"
CBR-514	1500	14.2	5/8"
CBR-517	1500	17.2	3/4"
CBR-614	1800	14.2	5/8"
CBR-617	1800	17.2	3/4"
CBR-814	2400	14.2	5/8"
CBR-817	2400	17.2	3/4"
CBR-1014	3000	14.2	5/8"
CBR-1017	3000	17.2	3/4"



COUPLER HEAVY DUTY

These couplers are made of high grade material for higher strength with counted bore for protecting the rod threads from damage.

ROD TO TAPE CLAMP - TYPE 'A'

A variety of earth rod clamps suitable for different applications. Conductivity, Mechanical strength and corrosion resistance are important considerations in clamp design to ensure and earthing system perfect for the life time of the system all clamps are made of high strength copper alloys bodies and screws of aluminum bronze, phosphor bronze, and stainless steel etc... (commercial Brass is never used).

Used for joining earth rods to copper tapes, these clamps are available to suit different sizes of earth rods and copper tapes.

ROD TO CABLE CLAMP - TYPE 'G'

These clamps are used for joining earth rods to copper cables.

ROD TO TAPE CLAMP - TYPE 'E2'

These clamps are used to connect tape to the earth rod. This clamp is provided with additional plate to fix the tape in vertical position also.

EARTH BARS AND DISCONNECTING LINKS

Earth Bars are an efficient and convenient solution for providing a common earth point to connect to the main earthing System. Integral disconnecting links are provided for isolation at the time of testing. These earth bars come in variety of specifications and sizes to suit different applications, the standard sizes are shown in the table with many variations.