

**Maintenance Free - Anti Corrosive  
Low Resistance - High Conductivity**



**Electrical Earthing Systems**

**"Protecting Man and Machine"**



# Earthing Solutions

## About Us

Nutech products is a company of professionals who have developed many innovative products for the construction industry since 1993. UniEarth Earthing System is one of such products catering to the need of advanced earthing systems.

## What is Earthing

Earthing is a system of electrical connections to the general mass of the earth. It is a creation of alternate path for the flow of excessive fault current into the ground. The main purpose of earthing is the safety of life and property.

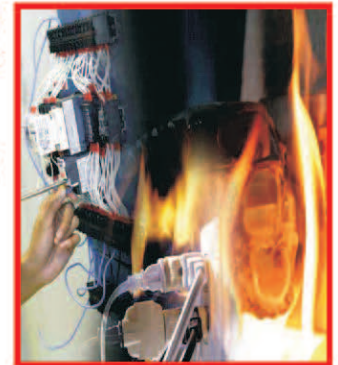
## Need for Good Earthing

Traditional earthing with common salt and charcoal is corrosion prone and requires watering at regular intervals. This results in premature failure of the earthing system.

Every year due to improper earthing systems, precious human lives are lost in fire incidents and electric shock accidents caused by short circuit.

A good earthing system prevents such happenings, it:

- Protects man and machine from injury or damage
- Guarantees performance and reliability of equipments
- Safeguards against lightning strike and power surges



## Maintenance free Earthing System

An effective earthing system with a high quality electrode and ground enhancing compound has the following features:

LOW IMPEDANCE PATH	HIGH CONDUCTIVITY	FAST CURRENT DISSIPATION
Maintenance free	Low resistance	Non-corrosive
High Reliability	Long life	Cost effective

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## UniEarth Earthing Systems

UniEarth earthing electrodes have been engineered with superior copper bonded rod technology and dual pipe technology.

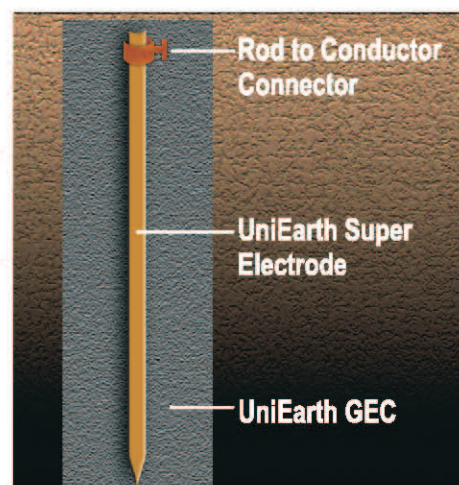
- Offer low impedance earthing.
- Fast dissipation of fault, short circuit and lightning currents.
- Guarantee safety of personal and equipments from electrical hazards.
- Maintenance free and long life.

UniEarth systems are installed in different combinations depending upon the soil condition and client specifications. The systems comprise of Super and Tripolar Copper Bonded Electrode, Pipe in Pipe and Flat in Pipe Electrode, Ground Enhancing Compound GEC and highly conductive Ionic Gel Compound IGC.

### Super Electrode Earthing System

Consists of Copper bonded electrode, connecting system and ground enhancing compound.

- Copper bonded electrode with a coating thickness of 250+ microns
- Test Clamp, Rod to Conductor connector of high quality
- UniEarth Ground Enhancing Compound GEC is an Innovative backfill compound
- Provide high electrical conductivity and anti-corrosion properties
- Maintenance free, easy installation
- Projected service life of 15+ years
- Suitable for most soils

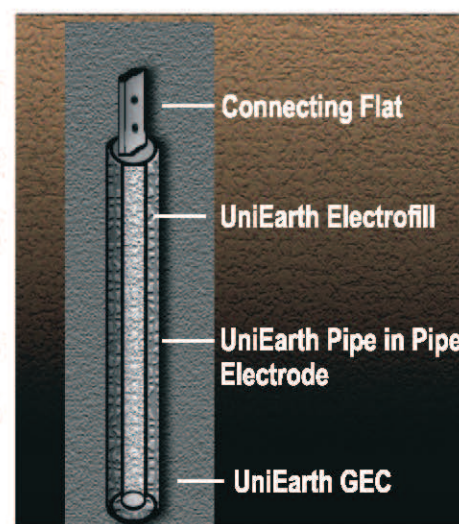


Code	Length (metre)	Diameter (mm)
SS215 & SS315	2 & 3	15
SS220 & SS320	2 & 3	20
SS225 & SS325	2 & 3	25

### Pipe in Pipe Earthing System

Consists of Pipe-in-Pipe Copper and GI electrodes, connecting system and ground enhancing compound

- GI Electrode is hot dip galvanized with a coating thickness of 86-100 microns.
- Copper Electrode is copper coated to a thickness of 100-250 microns.
- Pipe Cavity filled with UniEarth Electrofill-a conductive mixture
- UniEarth Ground Enhancing Compound GEC is an innovative backfill compound
- Provides high electrical conductivity and resistance to corrosion
- Low maintenance, easy installation, Long service life
- Suitable for normal soil conditions



Code	Length (mtr.)	Inner Pipe Dia (mm)	Outer Pipe Dia (mm)
PP250 & PP350	2 & 3	25	50
PP276 & PP376	2 & 3	40	76

★ Flat in Pipe Technology for Copper / GI Electrode can be supplied on requirement.

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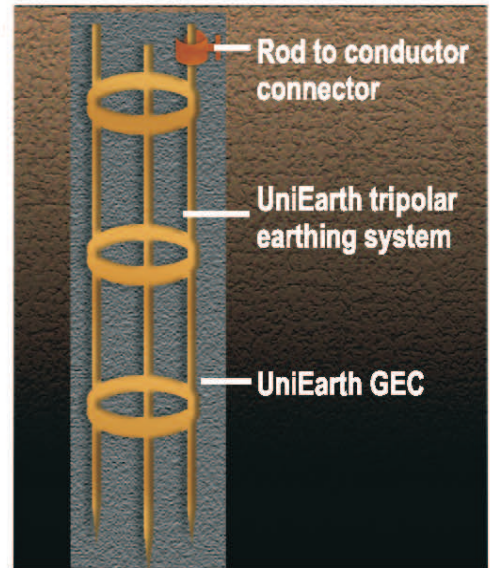


## Tripolar Earthing System

**UniEarth** Tripolar Earthing system is an extra ordinary earthing system for building earth, communication earth, transformer earth or any other equipment earth that requires a high quality earthing system.

It consists of Tripolar Copper bonded electrode, connecting system and ground enhancing compound GEC.

- Dissipates fault current in the shortest time.
- Provides high electrical conductivity and anti-corrosion properties.
- Lowest resistance values even with a single earth pit.
- Greater safety and more reliability.
- Maintenance free, easy installation.
- Projected service life of 15+ years.
- An exceptional earthing system suitable for all types of soil.



Code	Length (metre)	Inner Dia (mm)	Outer Dia (mm)
TS200 & TS300	2 & 3	110	150

## Advanced Electrode Earthing System

Advanced electrode earthing system is a solution for critical applications requiring very low resistance value. It consists of Tripolar electrode, Copper Bonded Electrodes, connecting system, Ground Enhancing Compound GEC and Ionic Gel Compound IGC

- Copper bonded electrode coating thickness of 250+ microns.
- Higher electrical conductivity and anti-corrosion properties.
- Maintenance free, easy installation.
- Projected service life of 20+ years.
- Ultra low resistance value.
- Best suited for harsh environments - particularly sandy soil and rocky ground.



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## UniEarth Electrodes

UniEarth electrodes provide the physical connection to the earth to dissipate current into the ground. There are several types of electrodes but Copper Bonded Electrode is widely used all over the world.

### Super Copper Bonded Electrode

- UniEarth copper bonded ground rods are manufactured with precision complying to the most demanding industry norms.
- Low carbon high tensile strength steel and 99.9% electrolytic copper bonding of 250+ microns.

Product	Length (metre)	Diameter (mm)
Copper Bonded Electrode	2 & 3	15
Copper Bonded Electrode	2 & 3	20
Copper Bonded Electrode	2 & 3	25



UniEarth Copper Bonded electrodes are extendable so that the length can be adapted according to the site conditions and the soil resistivity at different depth.

### Pipe in Pipe Electrode

- It incorporates the use of two pipes of coaxial diameters joined together by inserting one into the other.
- GI Electrode is hot dip galvanized with a coating thickness of 86-100 microns.
- Copper Electrode is copper coated to a thickness of 100-250 microns.
- The space in between the primary and secondary electrodes is filled with UniEarth Electrofill a compound which aids in increasing the service life, electrical conductivity and current with-stand capacity of the earthing electrode.

Product	Length (metre)	Inner Pipe Diameter (mm)	Outer Pipe Diameter (mm)
Pipe in Pipe Electrode	2 & 3	25	50
Pipe in Pipe Electrode	2 & 3	40	76



★ Flat in Pipe Technology for Copper / GI Electrode can be supplied on requirement.

### UniEarth Ground Enhancing Compound GEC

The cavity between the electrode and the pit is filled with the ground enhancing compound GEC which aids in increasing the electrical conductivity. UniEarth GEC has been specially developed by our chemical engineers to meet the need of advanced backfill compounds for the earthing industry. It is made up of natural eco-friendly mineral compounds with innovative features such as:

- High Hygroscopic properties - absorbs moisture from the surrounding soil
- Once set, maintains constant resistance and retains moisture for the life of the system
- Anti corrosive
- High current dissipation



UniEarth GEC is supplied in 20 Kg bags.

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## UniEarth Ionic Gel Compound IGC

UniEarth Ionic Gel Compound consists of 2 components: **IGC+** and **IGC-**. Mixed together in water it forms a fluidic substance which releases ions to obtain low resistance value even in difficult soil conditions. It enhances ionic value of the soil and does not get washed away being a gel compound.

- Protects from corrosion
- Lowers soil resistivity to a great extent
- Increases life span of earthing system

UniEarth IGC is supplied in 10 kg packing consisting of two jars of 5 kg each of **IGC+** and **IGC-**



### Installation

- Drill or auger a 4 inch diameter hole for single electrode and 6 inch for Tripolar to a depth of the electrode length where earthing is to be installed.
- Fill the bottom of the hole 4 inches with the supplied GEC compound.
- Place the electrode or the Tripolar system in the center of the pit.
- Make the connection between the earthing system and the conductor using the rod to conductor connector.
- Fill the cavity around the electrode with the GEC compound.
- Pour sufficient water into the earth pit to turn GEC powder into slurry form.
- Allow the electrode some time for setting of the soil. Test the earth pit.

**Note:** To achieve ideal results, installation should take place as per manufacturer's recommendation.



### Applications

Earthing is a must in almost every place where electricity is used.

- Industrial projects
- Power generation & Power transmission
- Telecommunication
- Electrical and Electronic equipments
- Commercial undertakings
- Hospitals
- Factories
- Malls
- Offices and Houses

