



# Manav Energy Product Catalog

MEPL/21-22/EXT/001 www.manavenergy.com





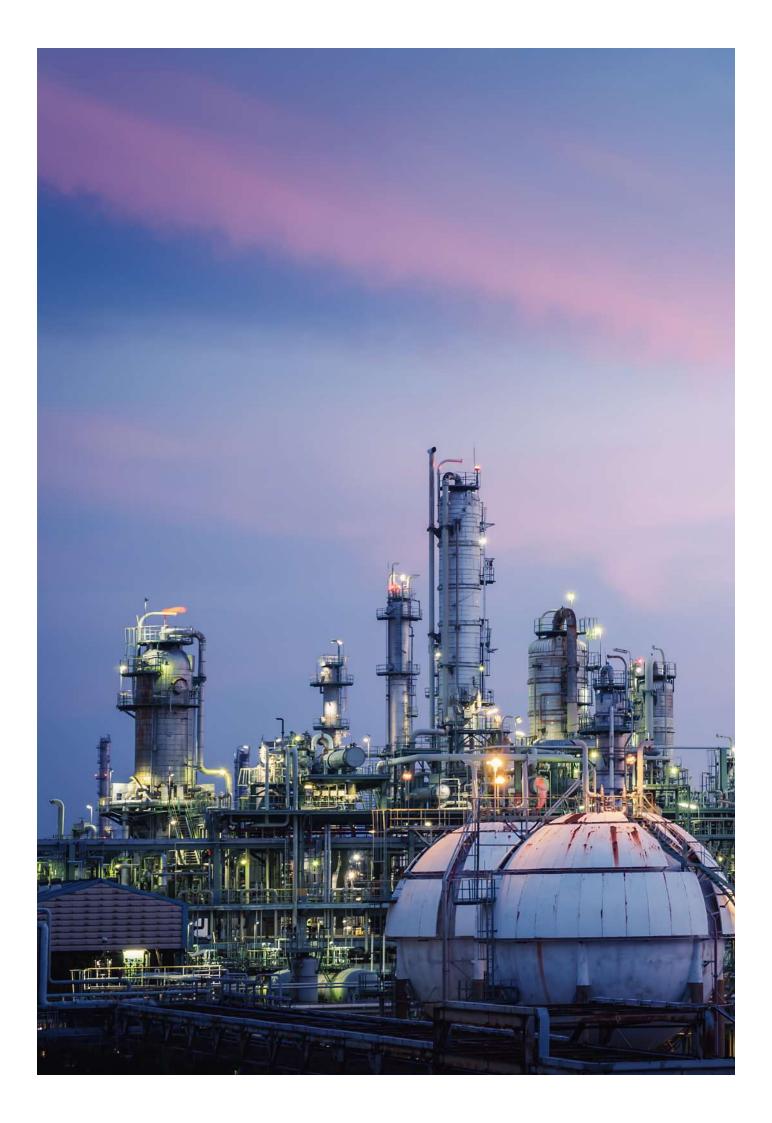


Manav Energy owns ISO certified manufacturing facility. World class products, quality installation and timely delivery are some of the key factors

Our line of solutions enhance safety of our esteemed customers. We ensure all products and services conform to highest levels of national and international standards.



Sonjib Banerjee President- Manay Energy





## Overview

Manav Energy, an ISO 9001:2015 & ISO 27000-2022 certified company, has proven to be an ideal choice in providing effective, efficient, and reliable solutions in the field of electrical safety and reliability.

The company was founded in 2003 in UAE and later expanded in the Indian subcontinent in the year 2012, to deliver safe and reliable electrical safety systems through in-depth survey, accurate design, quality manufacturing, and precise installation as per engineering requirement conforming to relevant national and international standards.

Our performance can be felt in over 600+ projects worldwide. Some of our star projects are:

Burj Khalifa - Lightning Management System

Ain Dubai observation wheel - - Lightning Protection Validation

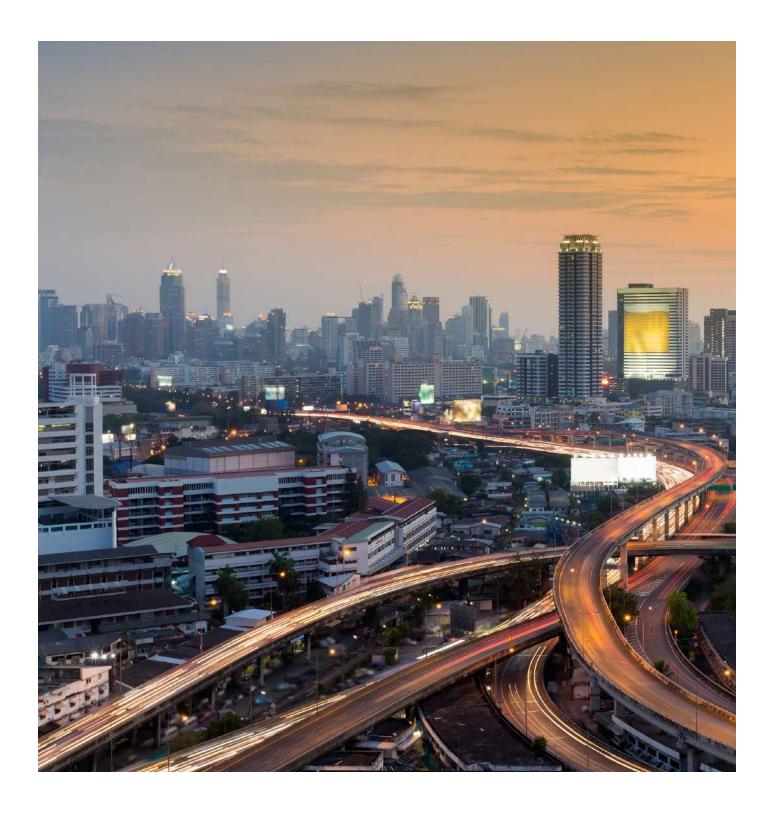
Burj Al Arab Luxury Hotel - Earthing and Lightning Management Systems

High-Speed Rail & Metro – Earthing and Bonding Systems

Telecom Giants RIL JIO – Earthing Systems

World's Largest Refinery – RIL JMD - Earthing and Bonding System

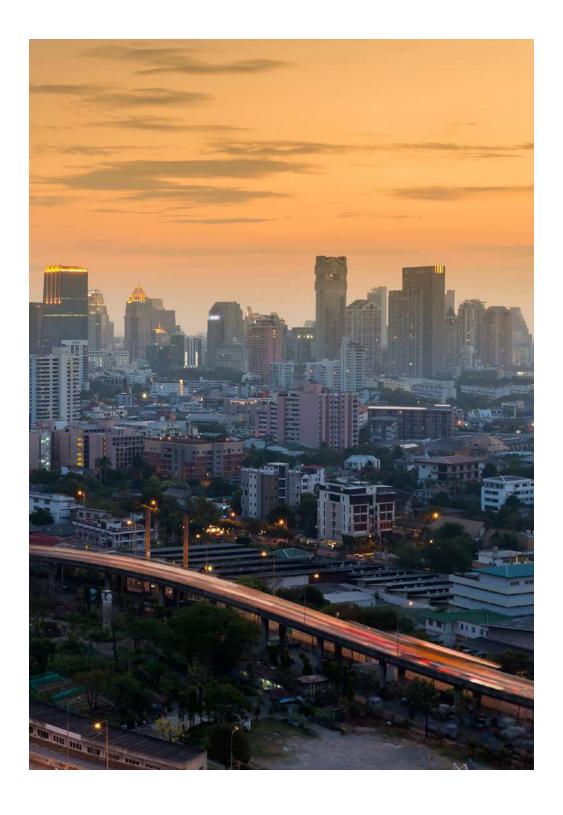
World's Longest Tunnel – Rohtang Pass - Earthing and Bonding System



We have ISO-certified Hi-tech manufacturing facility to produce world-class products that are unique and reliable.

In our line of business, safety can never be compromised, which is why we manufacture products conforming to national and international standards. In some cases, to attain the best results, we also procure specially designed products from around the world and implement them through our world class solutions.





#### Standards We Follow

























## **Products We Offer**

Earthing Products And Accessories	12
Earth Enhancing Compounds (EEC)	14
Curec	15
Curec+®	15
Curecon®	16
Curenite®	16
Curecrete™	17
Earth Electrodes	18
Copper Bonded Earth Electrode	19
Threaded Copperbond Earth Rod	19
Unthreaded Copperbond Earth Rod	19
Earth Electrode - Solid Copper and Stainless Steel	20
Earth Electrode Fittings	22
Coupler Heavy Duty	23
Dowel	23
Spike	23
Driving Head	23
Inspection Chamber	24
High-Density Polyethylene	25
Concrete Chamber	25
Earthing Accessories	26
Earth Bus Bars	27
Earth Rod Seal	28
Earth Mat - Lattice Copper	28



Earthing Kits	29
EPIC®: Earth Pit Instant Cure	31
Vertical Maintenance Free Kit	33
Horizontal Maintenance Free Kit	35
MobiEarth™ - Portable Earthing System	37
Lightning Protection Systems and Accessories	39
Conventional System	42
Multi Point Air Terminals	42
Air Rod With Standerd Conductor	42
Air Rod - Others	43
Interception Air Rod	43
Roof Mesh	44
Ariel Earth Wire - For Tank Farms & Explosive Areas	45
Active System	46
Unipolar Systems	47
Satelit™+G2	47
Satelit <sup>™</sup> +G2 Counter	47
Manay Vajra® Counter	48 48
Manav Vajra® Counter	
Bipolar Systems Satelit® 3	4 <u>9</u>
SAT-3 Multitester	49
Lightning Management System (LMS)	50
StormSAT®	50
Lightning Protection System Accessories	52
Telescopic Lightning Mast	53
Air Terminal Base – Tape	53
Flat Saddle-Type 'C'	53
Heavy Duty Cast Cable Saddle	54
Ridge Saddle	54



Guy Wire & Accessories	54
IIoT Monitoring Systems	56
R-FERM®	58
Cables, Tapes and Conductors	60
Bare Stranded Copper Conductor	61
Copper Cable with Green/Yellow Insulation	61
Flexible Flat Copper Braid Bond	62
Bare Copper Tape	62
Tinned Copper Tape Conductor	62
PVC Insulated Copper Tape Conductor	63
LSF Covered Copper Tape	63
Tinned Copper Bar	64
Bare Aluminum Tape	64
Bare Galvanized Steel Tape	65
PVC coverd Aluminium tape	65
Black Steel Tape	66
PVC Covered Aluminum Round Conductor	66
Bare Aluminum Round Conductor	66
Bare Galvanized Round Conductor	66
Exothermic Welding	68
Cureweld™	72
Molds	72
Handle Clamps	73
Other Accessories	73





Special Accessories	74
Clamps and Couplers	76
U-Bolt Rod Clamp (Type UB)	77
Rod to Cable Clamp (Type GUV)	77
Rod to Cable Clamp (TYPE 'L')	77
'B' Bond	78
Water Main Bond	78
Earth Bonding Point	78
Square Clamp	79
Rod to Tape-Cable Coupling	79
Rod Brackets	79
DC Tape Clip	80
Tape Clip - With Bare Copper	80
Test Clamp	80
Plate Type Test Clamp	81
Oblong Test or Junction Clamp-Tape	81
Oblong Test or Junction Clamp-Cable	81
Insulator	82
'C' Type Connectors	82
Screw Down Test Clamp	83
Bimettalic Connector	83
Type H High Strength Splitbot Connector	83
Shielding	84
Other Accessories	86
Denso Tape	87
PVC Heavy Duty Cable Ties	87
Monoplast Compound	87
Copper lugs	88
Fabricated Clamps	88
Aluminum LugsW	89
Hardware-Nut bolt/Washer/Anchor Fastener	89



Insulating Mats	90
Flexible PVC Reinforced Conduit	91
PVC Cable Glands	91
T Clamp for AAAC	92
PG Clamp for AAAC to AAAC	92



# **Earthing Products And Accessories**

A good earthing/grounding system provides a low resistance path to minimize the rise in ground potential at the time of electrical fault or lightning surge. It ensures the safety of personal and provides a path for the fault to reach the source. It protects the electromagnetic field in the environment. Above all, it is the reference to the electrical protection system.

An earthing system usually consists of earth enhancing compounds, electrode, and required accessories such as inspection chamber, earth bar, clamps, etc. Depending on the local conditions, earthing systems are designed before they are procured and installed. This design is based on the following main parameters:

Soil Resistivity
Area of dissipation
Buried Length of the conductor

In general, the dissipation capacity of the primary electrode depends on the soil resistivity, size, and type of earth electrode arrangement. It is often impossible to achieve the desired reduction in ground resistance by just adding more grid conductors or ground rods. The addition of grounding conductors not only increases the bill of quantity but also increases the cost of material as well as installation.

An alternate solution is to effectively increase the efficiency of energy transaction between the soil and electrode by modifying the soil immediately surrounding the electrode. When the inner shell of soil closest to the electrode is treated with earth enhancing compound, it increases the dissipation capacity of the electrode by multiple folds. Hence, procuring suitable earthing system becomes essential.





## Earth Enhancing Compounds (EEC)



#### Curec



Product Code: EEC008PG

This is a primary carbon-based earth enhancing compound which enhances the dissipation capacity of soil by reducing resistivity of soil. This product delivers maintenance free systems for large volume projects. It is best used for renewable energy projects, construction of roads, bridges, other high volume infra projects to achieve maintenance free earthing system with good dissipation feature.

#### **Product Features\***

- Made from organic elements and minerals
- Electrically conductive
- Non-leaching
- Standard packaging: 25 Kg
- Customized packaging available

#### Curec+®



Product Code: EEC012PG

World's best organic permanent Earth Enhancing Compound (Zero-Maintenance). This is a primary earth enhancing carbon based compound which exponentially enhances the dissipation capacity of soil by reducing resistivity of soil. It is best used for mission-critical projects, highly sensitive installations and large public congregation areas. It is also provides best results in all terrains and temperature variations.

#### **Product Features\***

- Made from organic elements and minerals
- Electrically & thermally conductive
- Non-leaching
- Maintenance free
- Standard packaging: 3 Kg;
- Customized packaging available

<sup>\*</sup> Conforms to IEEE 80: 2013 Clause 14.5 (d) and IEC 62561-7 | RoHS Complaint | ISO 9001 certified manufacturing | CPRI tested

#### Curecon®



Product Code: EEC016PG

Curecon® is bentonite based non-cracking earth enhancing compound. It is best used for mission-critical projects, highly sensitive installations and large public congregation areas. It also provides best results in all terrains and temperature variations.

#### **Product Features**

- Made from organic elements and minerals
- Electrically conductive
- Standard packaging: 5 Kg;
   Customized packaging available

Conforms to IEEE 80: 2013 Clause 14.5 (b) | RoHS Complaint | ISO 9001 certified manufacturing | CPRI tested

#### **Curenite®**



Product Code: EEC022PG

Curenite is an Advance Electrical Grade bentonite. The performance of this product is superior than commonly used bentonite clay earthing. It is best used as backfill compound and replaces the soil in high-resistivity areas such as desert, rock-bed, mountains, mines etc.

#### **Product Features**

- Non-cracking
- Resistivity 2.25 Ohm-meter
- Standard packaging: 25 Kg; Customized packaging available

Conforms to IEEE 80: 2013 Clause 14.5 (b) | RoHS Complaint | ISO 9001 certified manufacturing | CPRI tested



#### Curecrete<sup>™</sup>



Product Code: EEC012CPG

This compound is carbon-based conductive cement. This product provides conductive concrete earthing for areas with high water table and in open-area projects such as railways, substations, transmission towers, etc.

#### **Product Features\***

- Organic
- Electrically & thermally conductive
- Non-leaching
- Maintenance-free
- Reduction of theft of conductors due to concrete formation
- · Standard packaging: 5 Kg;
- Customized packaging available

Conforms to IEEE 80: 2013 Clause 14.6 and IEC 62561-7 | RoHS Complaint | ISO 9001 certified manufacturing



the efficiency of energy transaction between the soil and electrode by modifying the soil immediately surrounding the electrode.

#### **Earth Electrodes**

The earth electrode is a conductive rod that is driven into the ground. These electrodes are specially designed to withstand fault currents and lightning, improving earthing system performance. These metal rods conform to appropriate grades as per international standards such as ASTM, IS, UL, etc.



#### Copper Bonded Earth Electrode

These rods are coated with molecularly bonded 99.99% pure - electrolytic grade copper. They are highly resistant to corrosion. Installers can use power hammers on these rods to push them to greater depths. This is possible due to its high tensile strength.

## Threaded Copperbond Earth Rod

Product Code	Nominal Diameter	Туре	Length	Thread 'B' UNC	Shank 'A'
CBRTH1212	1/2"	Normal	1200mm	1/2"	14.2mm
CBRTH1234	3/4"	Normal	1200mm	3/4"	14.2mm
CBRTH1258	5/8"	Normal	1200mm	5/8"	14.2mm
CBRTHC1212	1/2"	Coupling	1200mm	1/2"	14.2mm
CBRTHC1234	3/4"	Coupling	1200mm	3/4"	14.2mm
CBRTHC1258	5/8"	Coupling	1200mm	5/8"	14.2mm



Note: Customized sizes are available.

#### Unthreaded Copperbond Earth Rod

Product Code	Nominal Diameter	Type	Length	
CBRUT12127	12.7mm	Normal	1200mm	
CBRUT12142	14.2mm	Normal	1200mm	
CBRUT12172	17.2mm	Normal	1200mm	
CBRUTC12127	12.7mm	Coupling	1200mm	
CBRUTC12142	142mm	Coupling	1200mm	
CBRUTC12172	17.2mm	Coupling	1200mm	

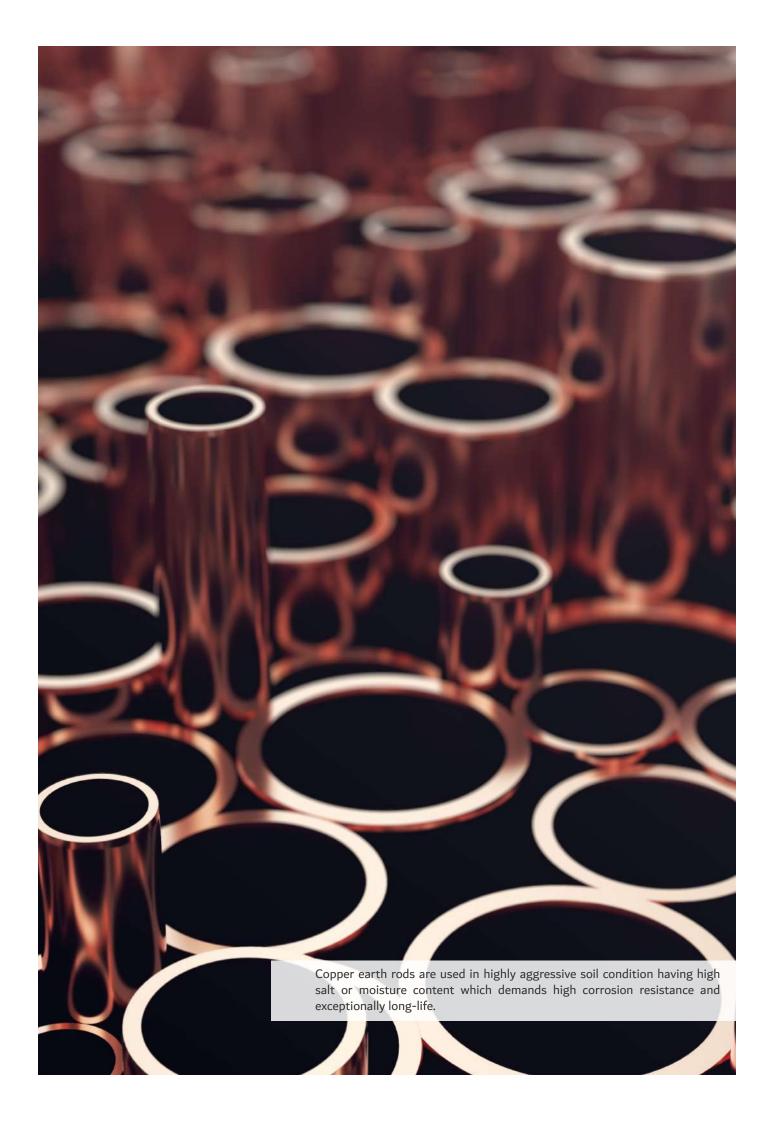


#### Earth Electrode - Solid Copper and Stainless Steel

The solid copper rods are made of 99.99% pure - electrolytic grade copper. They are highly resistant to corrosion. The rods are submerged into greater depths inside augured holes. These copper earth rods are used in highly aggressive soil condition having high salt or moisture content which demands high corrosion resistance and exceptionally long-life.

Product Code	Material	Dia	Length
SCRTH1215	Copper	15 mm	1200mm
SCRTH1220	Copper	20 mm	1200mm
SSRTH1216	Stainless	16 mm	1200mm
SSRTH1220	Stainless	20 mm	1200mm





Earthing	Systems	and	Accesso	ories
Lai tilling	3 y 3 t C 1113	and	11000331	J1 1C J

## **Earth Electrode Fittings**

\* Customized sizes are available



## **Coupler Heavy Duty**

Suitable to join solid copper rods

Product Number*	Thread Dia. in mm	Length in mm	
EEFHDC1570	15	70	



Note: Customized sizes are available.

#### **Dowel**

Suitable for internally threaded earth rod.

Product Code*	Thread Dia. in mm
EEFDWM8	8
EEFDWM10	10



Note: Customized sizes are available.

#### Spike

Suitable for internally threaded earth rod.

Product Code*	Thread Dia. in mm	
EEF01SC	15	



Note: Customized sizes are available.

#### **Driving Head**

Suitable for both manual and power hammering. Can be reused.

Product Code*	Thread Dia. in mm
EEFDH 15D	15



## **Inspection Chamber**



#### High-Density Polyethylene

HDPE earth inspection chamber is designed to have high strength & stress levels to absorb a maximum load of 5 tons (5000 kg) to 7 tons (7000 kg) as specified. The non-brittle feature and sustenance of weather changes make it more durable for use in tough terrains. It is simple to store, transport, install and maintain due to its lightweight.

Note: Customized models are available as per requirement.

Product Code*	L*W*H (mm)
ICHDP300	300*300*300
ICHDP500	500*500*500

Note: Customized sizes are available.



**HDPE Square Frame** 



**HDPE** Round Frame

#### Concrete Chamber

We manufacture and supply wide range of concrete inspection chambers. These products are available in safe packaging.

- Available in different concrete grades M25
- Type Square and Circle

Product Code*	L*W*D (mm)	Туре
ICCCM5300	300*300*70	5 Hole
ICCCM7300	300*300*70	7 Hole



	Earthing	Systems	and	Accesso	ries
--	----------	---------	-----	---------	------

## **Earthing Accessories**

\* Customized sizes are available



#### Earth Bus Bars

Earth bars are used for fittings into slots provided in the earth pit where multiple connections are required to the earth rod. Manay Energy earth bars are an efficient and convenient way of providing a common earth point, and integral disconnecting links that allow easy isolation for testing purposes.



					4
Product Code*	Туре	Description	Length (mm)	Earth Bus Bar with Double Disconnecting Link	4
EBBCW6L400	Copper	6 way	400		
EBBCW8L500	Copper	8 way	500	Earth Bus Bar with No	
EBBCW10L650	Copper	10 way	650	Disconnecting Link	4
EBBCW12L750	Copper	12 way	750		
EBBCW14L850	Copper	14 way	850	Earth Bus Bar with Single	
EBBCW16L950	Copper	16 way	950	Disconnecting Link	
EBBCW18L1050	Copper	18 way	1050		
EBBTW6L400	Tinned Copper	6 way	400		
EBBTW8L500	Tinned Copper	8 way	500		
EBBTW10L650	Tinned Copper	10 way	650		
EBBTW12L750	Tinned Copper	12 way	750		
EBBTW14L850	Tinned Copper	14 way	850		
EBBTW16L950	Tinned Copper	16 way	950		

18 way

1050

Note: Customized sizes are available.

**Tinned Copper** 

EBBTW18L1050

#### Earth Rod Seal

Infrastructure blocks in the modern city are frequently adjoined with each other. Hence, they require earth rods to be located within the building footprint itself. In such cases earth rods are usually installed in the basement or underground car park, which requires the earth rod to pass through the buildings floor slab and waterproof membrane. In such cases to prevent water ingression, an earth rod seal is used. These earth rod seals offer heavy duty sealing and are simple to install.

Single Flange*	Double Flange*	Earth Rod Dia. (mm)
ERS15S	ERS15D	15mm
ERS16S	ERS16D	16mm
ERS172S	ERS172D	17.2mm
ERS20S	ERS20D	20mm

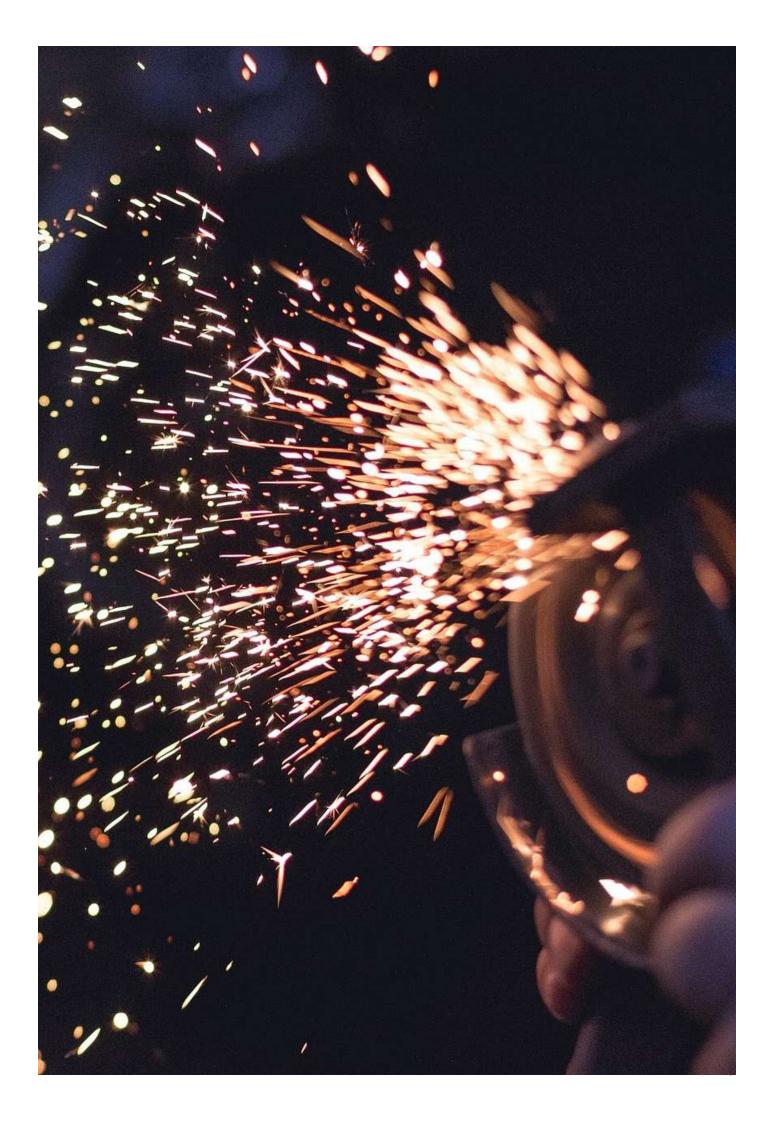


Note: Customized sizes are available.

## Earth Mat - Lattice Copper

Product Code	Size	Total Surface Area
EMC031	600*600*3mm	0.31m <sup>2</sup>





## **Earthing Kits**



Manav Energy's Research and Development team has successfully developed different kinds of earth kits that can be readily procured and installed to achieve low resistance paths for energy dissipation. Creating safe and effective earthing Kit depends on the following variables:

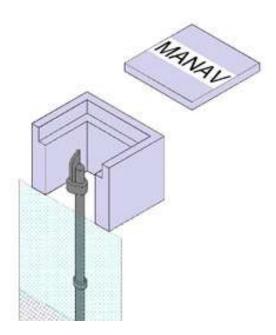
Soil profile
Accessibility
Space
Possibility of auguring
Classification of hazardous zone
Depth of Water table

Based on above mentioned dependencies we provide a range of read-to-use Earthing Kits.

#### **EPIC®**: Earth Pit Instant Cure

Rejuvenation Kits for existing earthing system.





In brown-field projects, installing an additional earthing system becomes unrealistic due to space constraints, concrete flooring, site accessibility, space for auguring, etc. It increases installation costs and delays in execution.

To address these complications, our R&D team has worked out an innovative solution, EPIC (Earth Pit Instant Cure) that when applied to existing earthing pits, enhances the performance. It upgrades the performance of existing earth pits and makes it maintenance free.

EPIC (Earth Pit Instant Cure) is being opted by different sectors such as petrochemical, power, telecom, infrastructure, process plants, etc. This economically minimizes the need to install new earth pit in areas where fresh installations are not possible.

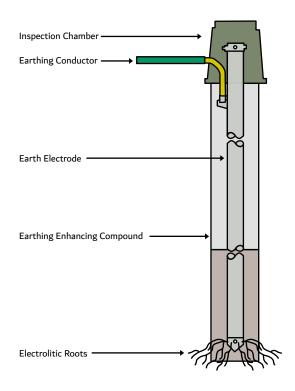
Note: The above solution can be used when the ground electrode is of good health and not extensively corroded. Please contact us for a tailor-made solutions.

Product Number: KTT001

#### **Vertical Maintenance Free Kit**

These kits are best for areas with insufficient horizontal space but have sufficient vertical space.





For green-field or brown-field projects, earth pit must perform in different soil profile (rocky, bedrock, sandy, desert, frozen lands, etc.).

These vertical maintenance free systems provide perfect solution for all above mentioned soil profile. Here, a specific ratio of Curec+® and Curecon® are mixed to provide best maintenance-free earthing systems.

This system can be used in all sectors such as petrochemical, power, telecom, infrastructure, process plants, etc.

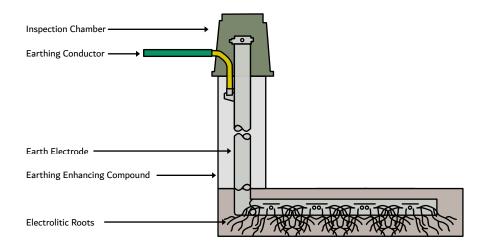
We also provide custom solutions that focuses on unique issues faced by the industry.

Product Number : KTT002

#### Horizontal Maintenance Free Kit

These kits are best for areas with low depth and/or having rocky bed.





These kits are used in green-field or brown-field projects where excavation beyond 600 mm is unfeasible. They can be used in different soil profiles (rocky, bedrock, sandy, desert, frozen lands, etc.).

These horizontal maintenance free systems provide optimal solution where vertical space is a constrain. Here, a specific ratio of Curec+® and Curecon® are mixed to provide best maintenance-free earthing systems. This kit includes special accessories to support the horizontal pit design. It is an ideal solution for tankage and other explosion sensitive areas as the design promotes non-sparking methodologies of installation.

This type of earthing solution should be opted where the soil has underline bedrocks or in hazardous zones when deep auguring is not possible.

We also provide custom solutions that focuses on unique issues faced by the industry.

Product Number: KTT003

Earthing ki	ts
-------------	----

## MobiEarth™ - Portable Earthing System

Portable earthing systems for defense signal units, missile launchers, moving communication units.





This product provides efficient, fast and portable earthing systems for defense signal units, missile launchers, and moving communication units. It is also used in temporary exhibition sites, oil rigs and many other areas where portable earthing systems are needed.

#### **Product Features**

- Moisture independent
- · Quick installation and retrieval
- · Electrically & thermally conductive
- Non-leaching
- Maintenance-free

Product Code : EKMOB1



# **Lightning Protection Systems and Accessories**

Lightning protection systems plays a vital role providing a defined path to lightning energy and get it dissipated in the ground without causing any fatal accidents and damages to people, structures, their contents and installations around them.

There is a huge economic benefit to install adequate lightning protection measures. The adequacy of these measures is calculated through risk assessment. Design, installation, and maintenance of the lightning protection systems are based on these risk assessments and standard - BS EN 62305 series

Lightning protection system can be divided into two major parts:

- Conventional Lightning Protection Systems
- Active Lightning Protection Systems

The conventional lightning protection systems aims to capture the lightning and direct it to the ground through the conductors and grounding system. The designing and implementations of such systems are based on IS/ IEC 62305 part 3.

Active Lightning Protection Systems perform special action during lightning strike. It artificially creates an ionized electrical field to attract the strike to itself, and provides a defined path for energy dissipation. The designing and implementations of such systems are based on NFC 17-02 standards.



	Lightning	g Protectio	n System	and A	Accessorie	2.5
--	-----------	-------------	----------	-------	------------	-----

## **Conventional System**



#### Multi Point Air Terminals

This system follows the Faraday cage principle. It uses copper air rods to dissipate lightning energy.

Materials: Copper

Product Code*	Rod Dia. in mm
LMP15D	15 mm
LMP16D	16 mm

Note: Customized sizes are available.



These rods are manufactured with high conductive hard drawn copper having rolled threads. It can be used with or without multi point.

Product Code	Rod Length	Rod Diameter	Thread Size	Conductor Material
LARSL500D15	500mm	15mm	M16	Copper
LARSL1000D15	1000mm	15mm	M16	Copper



## Air Rod - Others

Product Code	Rod Length	Type	Rod Diameter	Thread Size	Conductor Material
LARFL500D15	500mm	Flat Tape	15mm	M16	Copper
LARFL1000D15	1000mm	Flat Tape	15mm	M16	Copper
LARFL1500D15	1500mm	Flat Tape	15mm	M16	Copper
LARCL500D15	500mm	Solid Circular Conductor	15mm	M16	Copper
LARCL1000D15	1000mm	Solid Circular Conductor	15mm	M16	Copper
LARCL1500D15	1500mm	Solid Circular Conductor	15mm	M16	Copper
LARBL500D15	500mm	Air Rod Base	15mm	M16	Copper
LARBL1000D15	1000mm	Air Rod Base	15mm	M16	Copper
LARBL1500D15	1500mm	Air Rod Base	15mm	M16	Copper



#### Interception Air Rod

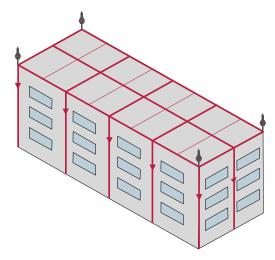
Product Code*	Hight	Base	Support Frame
LIAR1C	0.5m to 2m height	Circular concrete base	
LIAR4S	3m to 4m height	4 square concrete bases or 8 double- stacked for higher wind speeds	2 piece interception pole with square support frame
LIAR3C	4.5m to 5.5m height	3 circular concrete bases	2 piece interception pole with tripod support frame
LIAR6C	6m to 8m height	6 circular concrete bases	3 piece interception pole with tripod support frame
LIAR10C	8m to 10m height	10 circular concrete bases	3 piece interception pole with H shaped support frame

Materials: Copper, Aluminium

#### **Roof Mesh**

The mesh method of lightning protection system design is defined in IEC 62305. The mesh method design is not dependent on the height of the structure but needs flat surfaces. This concept cannot be used on curved surfaces. Here mesh of conductors are placed on the structure and the separation distance of the conductors is based upon the class of protection determined during the risk assessment.

For the mesh method to work, following criteria must be met.



Product Code: LPSRM01

- · Air termination rods are placed on roof edges, overhangs, and ridge lines
- No metal structure can protrude outside the volume protected

The network is constructed with minimum two separate paths for lightning discharge and that these conductors follow the most direct path to the ground.

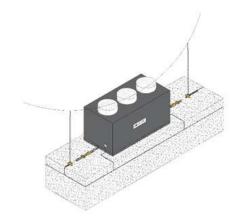
As per IEC 62305 conductors under the roof of a structure can be used as part of the mesh grid, or even the whole grid. These components may be the rebar structure underneath the roof.

#### Ariel Earth Wire - For Tank Farms & Explosive Areas

Tank farms are made up of tanks of different sizes for storing crude oil and other inflammable material. The dangers of lightning strike or surge causes a tank to catch fire and the consequences are fatal causing heavy life loss, polluted environment and the economic damage that takes a long time to recover.

To keep the tank farms from lightning strikes, we supply and install Ariel Earth Wire systems by performing accurate design and risk calculations.

Product Code: LPSAEW01







Lightning Protection System and Accessories

## **Active System**



#### **Unipolar Systems**

#### Satelit™+G2

Satelit<sup>™</sup>+G2, second generation ESE, from Duval Messein France, in compliance with NFC 17 102 standards.

This product is tested at the test center of Bizet (independent laboratory in France), certified at COFRAC. The tests were done according to the NFC 17- 102 standard (September 2011)

Material : Polished InoxColor : White metal

Dimensions & weight: Point Ø16 – 3,6 kg

• Models (excitation) ΔT : 10/25/45/60 microseconds

Level of Protection: Level 1 to 4

Product Code: ESESATG2

#### Satelit™+G2 Counter

This product is necessary with Satelit™+G2 during installation validation and periodical maintenance. It is designed for counting lightning strikes. The mounting is done in parallel on the down conductor with two clamping collars and four M6x13 stainless steel screw which is provided with the product.

Note: Electric power supply is not necessary.

Product Code: ESESATG2CNT





#### Manav Vajra®

This early streamer system offers improved performance of its ionization impulse capacity. Its efficiency and reliability are proven by the results of the certification tests made in high voltage laboratories in Turkey (Europe) and from other laboratories according to the NF C 17-102 standard.

Material: 304 L Stainless steel

Color: WhiteWeight: 3.6 kg

• Models (excitation) ΔT : 25/40/60 microseconds

Level of Protection: Level 1 to 4

Product Code: ESEMVAJG2



#### Manav Vajra® Counter

This product is necessary with Manav Vajra® ® during installation validation and periodical maintenance. It is designed for counting lightning strikes. The mounting is done in parallel on the down conductor with two clamping collars and four M6x13 stainless steel screw which is provided with the product.

Note: Electric power supply is not necessary.

Product Code: ESEMVAJCNT





#### **Bipolar Systems**

#### Satelit® 3

This system from Duval Messien, consist of a strike point, an excitation device (body), and a support rod. This ESE is equipped with a double polarization device. Satelit® 3 measures the intensity and polarity of the ambient electric field and releases an opposite upward streamer from the impulsion device of the active part of the lightning rod.

Material: Stainless steel with high resistance to corrosion

Color: White

Power Supply: Replaceable battery: 4.8 V / 800 mAh

· Communication: Protected antenna

Polarization : Double polarization - Active & Passive

• Models (excitation) ΔT : 25/40/60 microseconds

Level of Protection: Level 1 to 4

Product Code: ESESATUNI3



#### SAT-3 Multitester

This tester has been designed specially to check the operating of SATELIT3 functioning with radio-frequency (433 MHz). It is equipped with 4 LEDs which provides the test result, either positive or negative.

Product Code: ESESAT3TST



## Lightning Management System (LMS)

This system predicts the occurrence of storms or lightning, based on the surrounding environment. It preempts the environment and pushes all sensitive and high-value electrical assets on auxiliary power till unsafe condition exists. In return of safe condition, this safety system returns to main power, thus predicting & providing complete protection to the surrounding environment.

#### StormSAT®

StormSAT® is a product registered and manufactured by Duval Messien France an application mastered and designed by Manav Energy. It is the latest revolution in the lightning protection industry. This product detects storm activities within a 20 km radius and offers real-time protection. It provides a sense of security against lightning, offering excellent maintenance, guaranteeing optimum security, and protection.

Product Code: ESESSATLMS





ightning	Drotoction	Syctom	and	Accessories
_igiitiiiiig	Protection	System	anu	Accessories

**Lightning Protection System Accessories** 



#### Telescopic Lightning Mast

The mast helps in fixing the air terminal or the multipoint at the highest point of the structure to be protected.

Material: Galvanized Steel | Stainless Steel

Note: Customized sizes are available

Product Code: LPSAMLP01



These are used for fixing air rods onto the flat roof surfaces and connect tape for protection system.

Product Code*	Air Rod Dia. (mm)	Conductor Width (mm)
LPSAATT16506	16	50 x 6

Note: Customized sizes are available



## Flat Saddle-Type 'C'

They are used to fix air rods with cable conductor on to the flat surface. The threads are suitable for air rods.

Product Code*	Conductor Size (mm)	Rod Dia. (mm)
LPSAFSC16D	50-95	16



### Heavy Duty Cast Cable Saddle

They are mainly used to fix air rods on ridges with tape conductor.

Product Code*	Conductor Diameter	Туре	Conductor Material
LPSCCS8C	8mm	Solid circular Conductor	Copper
LPSCCS70S	70 mm²	Standerd Conductor	Copper



Note: Customized sizes are available

#### Ridge Saddle

They are mainly used to fix air rods on ridges with tape conductor.

Product Code*	Rod Dia. (mm)	Tape Size (mm)
LPSARS16D	16	50 x 6



Note: Customized sizes are available

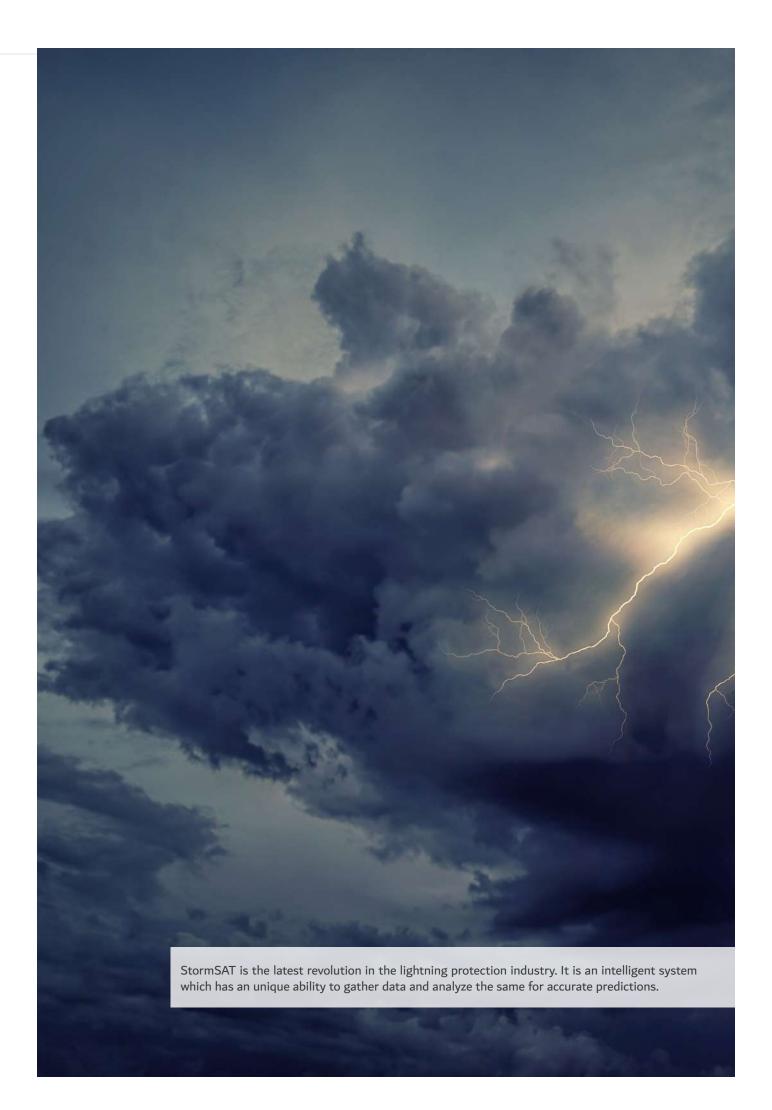
## Guy Wire & Accessories

Guy wire and its accessories (U-Bolt, Turn Buckle, Anchaor hook, Rawl Bolts) are used to provide stability to lightning pole/mast.

Material: Galvanized Steel

Product Code: LPSAGWSET





## **IIoT Monitoring Systems**



With evolving technologies, asset management and risk mitigation of modern electrical systems and high-value assets are becoming more complex. These complex systems are susceptible to electromagnetic interference and are prone to electrical faults resulting in accidents, service disruptions and escalated costs in operations and maintenance.

The Internet of Things (IoT) refers to a system of interrelated, internet-connected objects that are able to collect and transfer data over a wireless network without human intervention.

The industrial Internet of Things (IIoT) refers to use of the IoT in industrial sectors and applications. This technology is used for automating data collection and analysis, reporting and decision making to industrial operations. This automation is enabled using interconnected system of smart sensors, gateways, software platforms, and cloud servers.

Industries are looking for monitoring systems that will enhance the performance of their electrical network and environment during fault and normal operations. Our IIoT systems are designed to eliminate unplanned down time, and provide quick analysis to reduce loss and gain intended performance of the assets in place.



**IIoT Monitoring Systems** 

#### R-FERM®

Remote -Fault-time Earth Resistance Monitoring



The general practice is to measure & maintain the resistance of earthing systems is as per IEEE 81 2012. The measurements of the earthing systems are taken either annually or within a specified interval to understand the health of these systems. Some of the major drawback seen in present day maintenance practices are;

- The process is time consuming and is dependent on human resource availability.
- Manual results received are not conclusive and hence the exact condition of the earthing system is undefined.
- During manual testing process, the behaviour of earthing system at fault-time is unknown.

Manav Energy has indigenously developed an IIoT system called R-FERM to overcome the drawbacks of manual testing and maintenance of earthing system.

#### **Product Features**

- Measures and displays the earthing system resistance at specified time intervals and alerts the team for rectification. It also moniters step and touch potential
- Records the occurrence of fault in the earthing system by measuring and displaying fault-time resistance, and alerting the team about the faulttime condition.
- Automates the process by providing detection, recording, trend analysis, annunciation and condition-based maintenance for the system.

Product Code: RF686H



## Cables, Tapes and Conductors



#### **Bare Stranded Copper Conductor**

Product Code	Strand Description	Cross Section (mm²)
BSC714510S	7 X 1.45	10
BSC716016S	7 X 1.60	16
BSC721425S	7 X 2.14	25
BSC725235S	7 X 2.52	35
BSC1917850S	19 X 1.78	50
BSC725270S	7 X 2.52	70
BSC1925295S	19 X 2.52	95
BSC37200120S	37 X 2.00	120
BSC37225150S	37 X 2.25	150
BSC37250185S	37 X 2.50	185



Note: Customized Sizes are available

## Copper Cable with Green/Yellow Insulation

Product Code	Type	Cross Section (mm²)
CCISDGY35	Soft Drawn	35
CCISDGY70	Soft Drawn	70
CCISDGY95	Soft Drawn	95
CCIHDGY35	Hard Drawn	35
CCIHDGY70	Hard Drawn	70
CCIHDGY95	Hard Drawn	95



#### Flexible Flat Copper Braid Bond

Product Code*	Overall Braid Dimensions Copper Braid	Length	Hole Diameter	Cross Sectional Area
FFCB16	19*2.5mm	400mm	9mm	16mm²
FFCB70	32*6mm	400mm	13mm	70mm²
FFCB150	50*8mm	400mm	17mm	150mm <sup>2</sup>



Note: Customized sizes are available

#### **Bare Copper Tape**

Available in EC, ETP & commercial grade.

Product Code	Width mm (A)	Thickness mm (B)
BCT253	25	3.0
BCT256	25	6.0
BCT503	50	3.0
BCT506	50	6.0



Note: Customized sizes are available

#### **Tinned Copper Tape Conductor**

Product Code	Width mm (A)	Thickness mm (B)
TCT253	25	3.0
TCT256	25	6.0
TCT503	50	3.0
TCT506	50	6.0

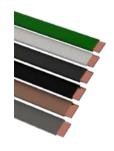




#### **PVC Insulated Copper Tape Conductor**

Available in 50 Meter roll and in different sleeve colors

Product Code	Width mm (A)	Thickness mm (B)
PVCICT253	25	3.0
PVCICT256	25	6.0
PVCICT503	50	3.0
PVCICT506	50	6.0



Note: Customized sizes are available

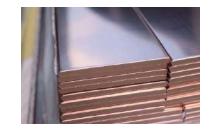
#### **LSF Covered Copper Tape**

Product Code	Color	Width (mm)	Thickness (mm)
LSFCT253	Green	25	3.0
LSFCT256	Green	35	6.0
LSFCT506	Green	50	6.0



#### **Tinned Copper Bar**

Product Code	Width (mm)	Thickness (mm)
TCB253	25	3.0
TCB256	25	6.0
TCB506	50	6.0



Note: Customized sizes are available

#### **Bare Aluminum Tape**

Product Code	Width mm	Thickness mm
BAT203	20	3.0
BAT253	25	3.0
BAT256	25	6.0
BAT406	40	6.0
BAT506	50	6.0



Note: Customized sizes are available

#### **Black Steel Tape**

Product Code	Width (mm)	Thickness (mm)
BST253	25	3.0





### **Bare Galvanized Steel Tape**

Product Code	Width mm	Thickness mm
BGST253	25	3
BGST256	25	6
BGST503	50	3
BGST506	50	6
BGST758	75	8
BGST7510	75	10



Note: Customized sizes are available

#### **PVC** coverd Aluminium tape

Product Code	Width mm	Thickness mm
PVCAT253	25	3
PVCAT256	25	6
PVCAT503	50	3
PVCAT506	50	6
PVCAT758	75	8
PVCAT7510	75	10



#### **PVC Covered Aluminum Round Conductor**

Product Code	Width (mm)	Thickness (mm)
PVCARC508B	50	6.0



Note: Customized sizes are available

#### **Bare Aluminum Round Conductor**

Product Code	Width (mm)	Thickness (mm)
BARC508	25	3.0

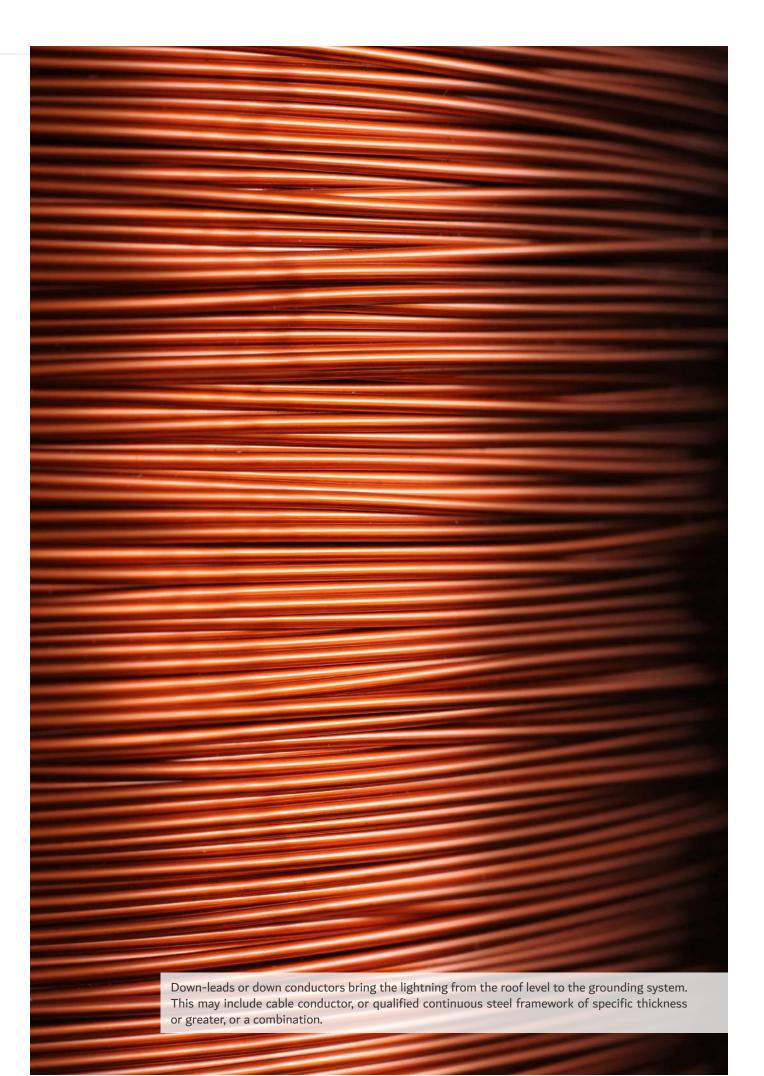


Note: Customized sizes are available

#### **Bare Galvanized Round Conductor**

Product Code	Cross-section(mm)	Dia (mm)
BGRC508	50	6.0





# **Exothermic Welding**

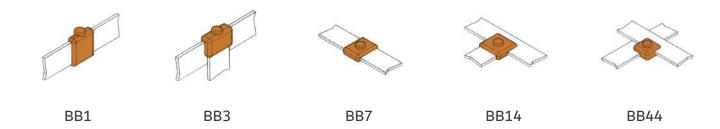


Exothermic joints are preferred over mechanical joints to achieve superior conductivity. Exothermic welding allows molecular joints between two conductors thus allowing joints to perform optimally.



#### **Type of welding Connection**

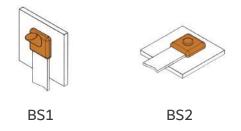
#### Bar to Bar Connection



Bar to Earth Rod Connection

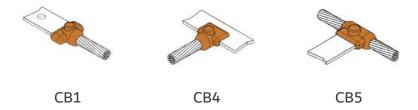


Bar to Steel Connection





#### Bar to Cable Connection



#### Cable to Cable Connection



#### Cable to Earth Rod Connection







#### Cable to Rebar Connection



#### Cable to Steel Surface Connection





#### Cureweld™

This exothermic powder is a superior quality metal powder used for bonding metals to achieve high-quality joints. It can be used for welding all existing surface-to-surface mechanical connections.

Product Code: EPCW

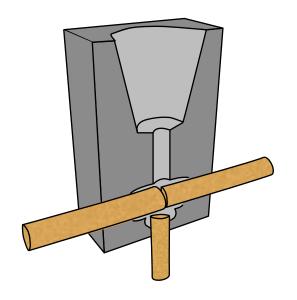


#### Molds

Our exothermic molds are strong and reliable to lasts for several times of welding. Thus, the cost of the welding is reduced due to repeated use of these molds.

Product Code	Description
EPMBB	BB1 - Bar to Bar
EPMBER	BR1 - Bar to Earth Rod
EPMBSS	S1 - Bar to Steel Surface
EPMCB	CB1 - Cable to Bar
EPMCER	CR3 - Cable to Earth Rod
EPMCR	CRE2 - Cable to Rebar
EPMCSS	CS7 - Cable to Street Surface

Note: These molds can be customized based on TAP and RUN requirement





#### **Handle Clamps**

These clamps are used for fastening, closing and safe handling of the molds during exothermic welding.

Product Code	Description
EWCVW	Vertical Weld
EWCRC	Cable to Rail
EWCHW	Horizontal Weld
EWCEP	For Earth Pit

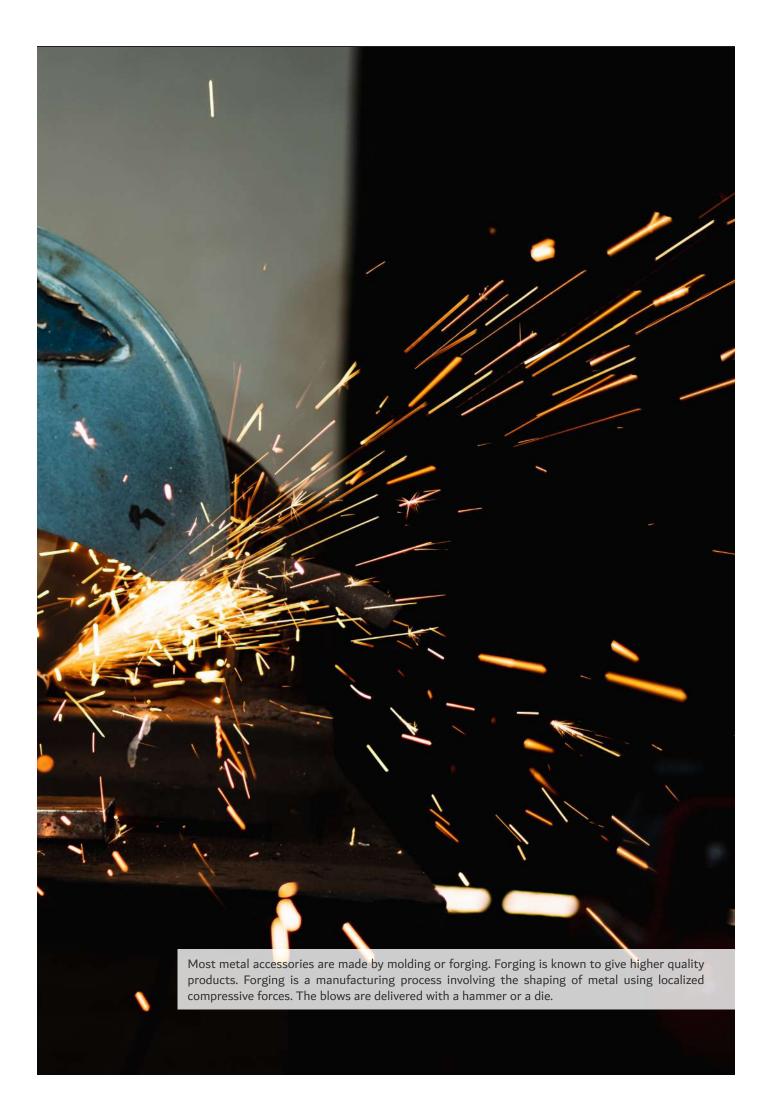


#### **Other Accessories**

Product Code	Description
EWBTA001	Blowtorch
EWTBA002	Toolbox
EWSDA003	Screw driver
EWFLA004	File
EWCBSA005	Cleaning brush(soft)
EWCBHA006	Cleaning brush(hard)
EWMCSA007	Mold cleaning scraper
EWGVA008	Gloves
EWFCA009	F clamp
EWCCA010	C clamp



# **Special Accessories**



Special Accessories

# **Clamps and Couplers**



### U-Bolt Rod Clamp (Type UB)

'U' bolts are manufactured from brass, copper & gun-metal with various sizes.

Product Code*	Nominal Rod Dia. (mm) /Rebar Diameter	Hole center (mm) /Conductor Range
URCUB172	17.2	37 (Hole)
URCUB20	3/4" / 20mm	16-70 mm <sup>2</sup> (Conductor Range)



### Rod to Tape Clamp (Type A)

Product Code*	Nominal Rod Diameter	Max Conductor
RTC2610	3/4"/ 20mm	26*10mm



# Rod to Cable Clamp (Type GUV)

Manufactured from brass, copper & gunmetal with various rod diameter.

Product Code	Nominal Rod Dia. (mm)	Conductor Range (mm²)	
RCGUV172	17.2	16 - 150	



# Rod to Cable Clamp (TYPE 'L')

Manufactured from brass copper & gunmetal. Available in copper bonded and solid copper rods of different diameters.

Product Code	Nominal Rod Dia. (mm)	Conductor Size (mm)
RCCTL95635	9.5	6-35
RCCTL161670	16	16-70
RCCTL191695	19	16-95



#### 'B' Bond

Manufactured from copper, brass, gunmetal & aluminum used for bonding tape to flat metal surfaces.

Product Code	Width (mm)	Thickness (mm)
BBM1025	25	M10

Note: Customized sizes are available



#### Water Main Bond

Manufactured from copper, brass, gunmetal & aluminum used for bonding Copper tape to water main pipes.

Product Code	Max Tape width (mm)
WMB25W	25

Note: Customized sizes are available



# Earth Bonding Point

Earth Bonding Points are used for providing earthing continuity and a multiple bonding point, these bonding points are available with one, two- and four-hole connections.



Product Code	Holes	Plate Size (mm)	Stem ø (mm)	Length (mm)	Tail* (mm)
EBP12038	1	38 x 38	10.7	75	500
EBP22070	2	70 x 35	10.7	75	1000
EBP42065	4	65 x 65	10.7	75	1500



# Square Clamp

Manufactured from copper, brass, gunmetal & aluminum for forming straight through, cross or T joints in tape and bar.

Product Code	Туре	Conductor size (mm) / dia. (mm²)
STC253	Таре	25 x 3
STC256	Таре	25 x 6
STC506	Tape	50 x 6
SCC50	Cable	50 mm²
SCC70	Cable	70 mm²
SCC95	Cable	95 mm²



Note: Customized sizes are available

### Rod to Tape-Cable Coupling

Manufactured from copper, brass, gunmetal & aluminum.

Note: This component is available for different air rod diameter, thread diameter and conductor sizing

Product Code	Air Rod Dia.	Thread Dia.	Conductor size
	(mm)	(mm)	(mm)
RCC16D253	11/16"	17.2	16 - 150



#### **Rod Brackets**

Manufactured from copper, brass, gunmetal and aluminum supplied in set of 2.

Product Code	Air Rod Dia. (mm)		
RBAR16D	16		



# DC Tape Clip

Manufactured from high quality copper, brass, gunmetal, aluminum and PVC coated metal.

Product Code	Type	Strip Size (mm)
DCBC253	Bare Copper	25 x 3
DCBC256	Bare Copper	25 x 6
DCBC506	Bare Copper	50 x 6
DCPC253	PVC Covered	25 x 3
DCPC256	PVC Covered	25 x 6
DCPC506	PVC Covered	50 x 6
DCBA253	Bare Aluminium	25 x 3
DCBA256	Bare Aluminium	25 x 6
DCBA506	Bare Aluminium	50 x 6



Note: Customized sizes are available

### Tape Clip - With Bare Copper

Product Code*	Conductor Size		
TCBC253	25*3mm		

Note: Customized sizes are available



### **Test Clamp**

Product Code*	Conductor Diameter	Conductor Material
TCC8	8mm²	Copper
TCC70	70mm²	Copper





### Plate Type Test Clamp

Manufactured from copper, brass, gun metal & aluminum

Product Code		Conductor Size (mm)
	MPTC253	25 x 3
	MPTC256	25 x 6
	MPTC506	50 x 6



Note: Customized sizes are available

# Oblong Test or Junction Clamp-Tape

Manufactured from Copper, brass, gun metal & aluminum

Product Code	Conductor Size (mm)		
OTCTA7510	50 x 6		

The same of the sa

Note: Customized sizes are available

### Oblong Test or Junction Clamp-Cable

Manufactured from copper, brass, gun metal & aluminum

Product Code	Conductor Size (mm²)		
OTCCA1695	16-95		





#### Insulator

Product Code*	Height	Top Diameter	Max Diameter	Insert Size	For Copper Bar Size
CCIM6253	20mm	14mm	18mm	M6	25*3mm
CCIM6256	30mm	25mm	33mm	M6	25*6mm
CCIM8386	40mm	31mm	39mm	M8	38*6mm
CCIM10506	50mm	27mm	35mm	M10	50*6mm
CCIM10756	60mm	38mm	52mm	M10	75*6mm
CCIM121006	70mm	51mm	55mm	M12	100*6mm



Note: Customized sizes are available

# 'C' Type Connectors

Manufactured from copper, tinned copper, brass, gun metal & aluminum.

Product Code	Conductor Range (Main)	Conductor Range (Tap)
CTC1516	35mm²	1.5 - 16mm²
CTC2535	35mm²	25 - 35mm²
CTC1525	70mm²	1.5 - 25mm²
CTC50435	50 - 70mm²	4 - 35mm²
CTC3570	50 - 70mm²	35 - 70mm²
CTC95435	95mm²	4 - 35mm²
CTC953570	95mm²	35 - 70mm²
CTC7095	95mm²	70 - 95mm²
CTC25120	120mm²	25 - 120mm²









# Screw Down Test Clamp

Manufactured from copper, brass, gun metal & aluminum

Product Code	Conductor Size (mm)	
SDTC7510	75 x 10	
SDTC253	25 x 3	



Note: Customized sizes are available

#### Bimettalic Connector

Product Code*	Conductor Size		
BC253A253C	25*3mm aluminium tape to 25*3mm copper tape		
BC8DA253C	8mm diameter aluminium conductor to 25*3mm copper tape		



# Type H High Strength Splitbolt Connector

Conductor Range				
Main		Тар		Dimension B
Min	Max	Min	Max	
4mm²	10mm²	2.5mm <sup>2</sup>	10mm²	4.1mm
10mm²	16mm²	2.5mm <sup>2</sup>	16mm²	5.5mm
16mm²	25mm²	4mm²	25mm²	6.9mm
25mm²	35mm²	4mm²	35mm²	8.4mm
35mm²	50mm²	4mm²	50mm²	9.7mm
35mm²	70mm²	4mm²	70mm²	11.2mm
50mm²	95mm²	4mm²	95mm²	13.6mm
50mm²	120mm²	6mm²	120mm²	14.7mm
95mm²	185mm²	6mm²	185mm²	18.2mm
	Min 4mm² 10mm² 16mm² 25mm² 35mm² 35mm² 50mm²	Main         Min       Max         4mm²       10mm²         10mm²       16mm²         16mm²       25mm²         25mm²       35mm²         35mm²       50mm²         35mm²       70mm²         50mm²       95mm²         50mm²       120mm²	Main       Ta         Min       Max       Min         4mm²       10mm²       2.5mm²         10mm²       16mm²       2.5mm²         16mm²       25mm²       4mm²         25mm²       35mm²       4mm²         35mm²       50mm²       4mm²         35mm²       70mm²       4mm²         50mm²       95mm²       4mm²         50mm²       120mm²       6mm²	Main       Tap         Min       Max       Min       Max         4mm²       10mm²       2.5mm²       10mm²         10mm²       16mm²       2.5mm²       16mm²         16mm²       25mm²       4mm²       25mm²         25mm²       4mm²       35mm²         35mm²       4mm²       50mm²         35mm²       4mm²       70mm²         50mm²       4mm²       95mm²



# Shielding

Shielding reduces electrical noise and its impact on signals. It prevents crosstalk between cables, protects machinery from fatal shocks and equipment damages.



Cable Ties & Clips

Product Code: SACTC



Cable Identification Ties

Product Code: SACIT



Magnetic clamps for securing cables, fibers, and tubes

Product Code: SAMC



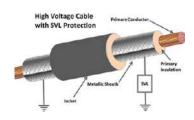
Cable Trays and Racks

Product Code: SACTR



Sheath voltage limiters: It protects cable jackets from electrical stresses during transient. This is essential to preserve the operational integrity of high voltage cables.

Product Code: SASVL



Accessories

### **Other Accessories**



#### Denso Tape

Product Code*	Coil Size		
DT5010	50mm*10m		



#### **PVC Heavy Duty Cable Ties**

We provide comprehensive range of high quality PVC heavy duty cable ties with best in class tensile strength and endurance. Our cable ties perform very well under varying weather conditions These tiles are used in various rail projects We also export it across the globe.

Product Code	Length (mm)	Width (mm)
SAPVCT200	7.8	2.5/3.6/4.8/7.6/9
SAPVCT250	9.8	2.5/3.6/4.8/7.6/9
SAPVCT300	11.8	2.5/3.6/4.8/7.6/9
SAPVCT500	19.6	2.5/3.6/4.8/7.6/9



### Monoplast Compound

Monoplast is a permanently elastic noncorrosive sealing compound with high insulating & weather proofing properties.

#### Specifications/Properties:

- · Noncorrosive sealing component
- · High insulating and weather proofing
- Available in different packaging based on the bulk requirement

Product Code: SAMPC001



#### Copper lugs

We provide different types of passivated copper lug, tinned copper lug with purity of copper up to 99.9%

#### Properties:

- High conductivity
- · Highly resistant to corrosion
- High durability

All above mentioned types of lugs are available for different cable sizes ranging from 2 sqmm to 1000 sq.mm.

Product Code	Туре
SACLRT	Ring Type
SACLUT	U Type
SACLSHSB	Single hole short barrel
SACLSHLB	Single hole long barrel
SACLDHSB	Double hole short barrel
SACLDHLB	Double hole long barrel



Different types of fabricated clamps are available as per customer design in different materials. They are also available for different types of cable sizes to fix/clamp, cable at equal interval in metro viaduct.

Product Code	Materials	
FCMS001	Mild Steel	
FCGI001	Galvanized Iron	
FCAL001	Aluminum	
FCGM001	Gun metal	







### Aluminum LugsW

We provide different types of aluminum lugs with purity of aluminum normally in the range of 99.5–99.8% of aluminum.

#### **Properties**

- Corrosion resistance.
- Electrically conductive
- Thermally conductive
- Reflectivity
- Ductility
- Strength at low temperatures

All above mentioned types of lugs are available for different cable sizes ranging from 2 sqmm to 1000 sq.mm.

Product Code	Туре
SAALRT	Ring Type
SAALUT	U Type
SAALSHSB	Single hole short barrel
SAALSHLB	Single hole long barrel
SAALDHSB	Double hole short barrel
SAALDHLB	Double hole long barrel

### Hardware-Nut bolt/Washer/Anchor Fastener

Superior quality hardware are available in all different sizes ranging from M2 to M20 in materials such as GI, Gun Metal, SS (SS 304) Brass, etc.

Product Code	Type		
HWNBSS304	Nut bolt		
HWWSSS304	Washer		
HWAFSS304	Anchor Fastener		







#### **Insulating Mats**

Insulating mats safeguard life of electricians & other technicians in case of any accidental current leakage while working on AC or DC installations. Synthetic Insulation mat confirms complete safety of workers handling live electronic equipment. Made with a combination of rubber & synthetic polymers.

Color - Most preferred colours are Black, Blue & Grey but other colours are also available on request. All offered colours are manufactured without metallic derivatives.

Surface - Minute abrasions are provided on upper surface to mat to make surface Anti-skid.

Size - As per standard width is normally 1meter & length up to 10meter per roll but other sizes are made available as per requirement of the purchaser.



Safety mats for electrical applications are divided in to three main classes based on voltage ratings. recommended division is as follows:



Product Code	Class	Thickness	Working Voltage	Proof Voltage	Break down Voltage	
SAIMA20	Α	2.0	3.3 KV	10 KV	30 KV	
SAIMB25	В	2.5	11 KV	22 KV	45 KV	
SAIMC30	С	3.0	33 KV	36 KV	65 KV	



#### Flexible PVC Reinforced Conduit

We provide superior quality flexible PVC conduits in different sizes with IP rating of IP-66

#### Specifications/Properties:

- Material-PVC
- Anti-corrosive
- UV Protected
- Metal reinforced
- Size availability 12mm to 100mm diameter

Product Code: FPVCRCIP66



#### **PVC Cable Glands**

We provide superior quality PVC cable glands in different sizes.



Product Code	Nominal thread size	Cable Dia (mm)	Thread O.D (mm)	Gland inner Dia (mm)
PVCCGL365	PG7	3-6.5	12.5	11.28
PVCCGL48	PG9	4-8	15.5	13.86
PVCCGL510	PG11	5-10	18.6	17.26
PVCCGL612	PG13.5	6-12	20.4	19.06
PVCCGL1014	PG16	10-14	22.5	21.16
PVCCGL1318	PG21	13-18	28.3	26.78
PVCCGL1825	PG29	18-25	37.0	35.48
PVCCGL2232	PG36	22-32	47.0	45.48
PVCCGL3038	PG42	30-38	54.0	52.48
PVCCGL3444	PG48	34-44	59.3	57.78

# T Clamp for AAAC

We provide superior quality well finished galvanised T clamps for All Aluminum Alloy Conductors (AAAC) suitable for different cross-sectional area of conductor.

These types of clamps are generally used in all types of overhead electrical installation project.

Product Code: TCGALAAAC



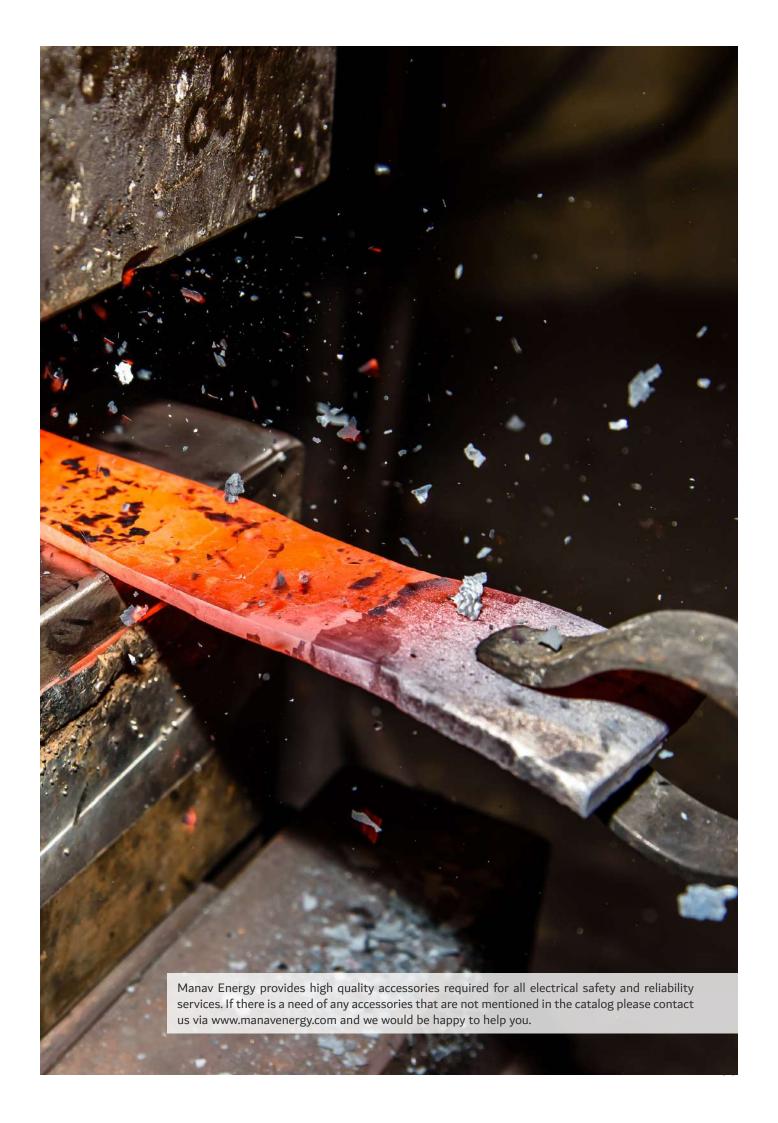
### PG Clamp for AAAC to AAAC

We provide superior quality well finished galvanised PG clamps for All Aluminium Alloy Conductors (AAAC) suitable for different cross-sectional area of conductor.

These types of clamps are generally used in all types of overhead electrical installation project.

Product Code: PGCGALAAAC









#### www.manavenergy.com

MANAV ENERGY PVT. LTD. #28,PUNARVASU, 1st and 2nd Floor, E End Main Road, 4th "T" Block, Jayanagar, Bangalore – 560041, India. Tel: +91-8026546549, Mob: +91-9611378007





