



EARTHING & LIGHTNING PROTECTION SYSTEMS

History in Engineering eXcellence

LIST OF TEST REPORTS & CERTIFICATIONS

EARTHING & LIGHTNING PROTECTION SYSTEM COMPONENTS				
S. NO	PRODUCT	SIZE	STANDARD / TEST	CERTIFYING BODY
1	GROUNDING & BONDING EQUIPMENT - EARTH/GROUNDING RODS	AS PER UL CERTIFICATE NO. UL-US-L328910-113-61100102-1	UL 467	UL LLC
2	GROUNDING & BONDING EQUIPMENT - EARTH/GROUNDING RODS	AS PER UL CERTIFICATE NO. UL-CA-L328910-313-61100102-1	CAN/CSA C22.2 NO. 41	UL LLC
3	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS	AS PER UL CERTIFICATE NO. UL-US-L328910-111-62019002-1	UL 467	UL LLC
4	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS	AS PER UL CERTIFICATE NO. UL-CA-L328910-311-62019002-1	CAN/CSA C22.2 NO. 41-13	UL LLC
5	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS	AS PER UL CERTIFICATE NO. UL-US-L328910-112-92219002-1	UL 467	UL LLC
6	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS	AS PER UL CERTIFICATE NO. UL-CA-L328910-312-92219002-1	CAN/CSA C22.2 NO. 41	UL LLC
7	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS - DB	AS PER UL CERTIFICATE NO. UL-US-L328910-114-01501102-1	UL 467	UL LLC
8	GROUNDING & BONDING EQUIPMENT - GROUNDING CLAMPS - DB	AS PER UL CERTIFICATE NO. UL-CA-L328910-314-01501102-1	CAN/CSA C22.2 NO. 41	UL LLC
9	SOLID COPPER EARTH/ GROUNDING ROD	16.0 mm DIA. X 1.2 MTRS. LENGTH	BS EN 62561-2	SIRIM, QAS INTERNATIONAL, MALAYSIA
10	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	14.2 mm DIA. X 2 MTRS. LENGTH	IEC 62561-2	SHREE RAM TESTING LABORATORIES, INDIA
11	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	17.2 mm DIA. X 3 MTRS. LENGTH	IEC 62561-2	SHREE RAM TESTING LABORATORIES, INDIA
12	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	14.2 mm DIA. X 2 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
13	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	17.2 mm DIA. X 3 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
14	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	25.0 mm DIA. X 3 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
15	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	32.0 mm DIA. X 3 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
16	250 MICRONS COPPER BONDED EARTH/GROUNDING ROD	17.2 mm DIA. X 4 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
17	250 MICRONS COPPER BONDED EARTH/GROUND ROD WITH EXOTHERMIC WELDED PLATE	17.0 mm DIA.	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
18	250 MICRONS COPPER BONDED EARTH/GROUND ROD WITH EXOTHERMIC WELDED PLATE	17.0 mm DIA.	RDSO/SPN/197 VER 1.0	SHIVAM QUALITY TEST HOUSE, INDIA
19	250 MICRONS COPPER BONDED EARTH ROD	17.0 mm DIA.	COPPER PLATING THICKNESS	TCR ENGINEERING SERVICES PVT. LTD, INDIA
20	STAINLESS STEEL EARTH ROD	19.0 mm DIA.	1) CHEMICAL ANALYSIS AS PER BS EN 50164-2	CPRI, INDIA
21	STAINLESS STEEL EARTH ROD	19.0 mm DIA.	2) ELECTRICAL RESISTIVITY TEST AS PER BS EN 50164-2	CPRI, INDIA
22	STAINLESS STEEL EARTH ROD	19.0 mm DIA.	3) TENSILE STRENGTH TEST AS PER BS EN 50164-2	CPRI, INDIA
23	PIPE-IN-PIPE EARTHING ELECTRODE, 100 MICRONS HDG	76.0 mm DIA. X 3 MTRS LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA

Continued...

LIST OF TEST REPORTS & CERTIFICATIONS

EARTHING & LIGHTNING PROTECTION SYSTEM COMPONENTS				
S. NO	PRODUCT	SIZE	STANDARD / TEST	CERTIFYING BODY
24	PIPE-IN-PIPE EARTHING ELECTRODE, 100 MICRONS HDG	50.0 mm DIA. X 3 MTRS LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
25	PIPE-IN-PIPE EARTHING ELECTRODE, 250 MICRONS COPPER BONDED	76.0 mm DIA. X 3 MTRS LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
26	GROUND ENHANCING CHEMICAL COMPOUND - TERRAHEX	NA	RoHS-2 DIRECTIVE 2011/65/EU REQUIREMENTS	TCR ENGINEERING SERVICES PVT. LTD, INDIA
27	GROUND ENHANCING CHEMICAL COMPOUND - TERRAHEX	NA	IEC 62561-7 / EN 12457-2	SPECTRO ANALYTICAL LABS LTD, INDIA
28	GROUND ENHANCING CHEMICAL COMPOUND - HEXCRETE	NA	RDSO/SPN/197 VER 1.0	SHIVAM QUALITY TEST HOUSE, INDIA
29	POLYMER SQUARE EARTH PIT CHAMBER - HEP	308 mm X 308 mm X 214 mm	LOAD BEARING CAPACITY (IEC 62561-5)	TCR ENGINEERING SERVICES PVT. LTD, INDIA
30	POLYMER ROUND EARTH PIT CHAMBER - HEPR-A	260 mm X 355 mm X 260 mm	LOAD BEARING CAPACITY (IEC 62561-5)	TCR ENGINEERING SERVICES PVT. LTD, INDIA
31	CONCRETE SQUARE EARTH PIT CHAMBER - HCEP	310 mm X 310 mm X 170 mm	LOAD BEARING CAPACITY (IEC 62561-5)	TCR ENGINEERING SERVICES PVT. LTD, INDIA
32	EARTH ROD SEAL ASSEMBLY	NA	EARTH ELECTRODE SEAL TEST (IEC 62561-5)	IDEMI, INDIA
33	CONCRETE SQUARE EARTH PIT CHAMBER - HCEP-C	510 mm X 510 mm X 400 mm	LOAD BEARING CAPACITY (IEC 62561-5)	TCR ENGINEERING SERVICES PVT. LTD, INDIA
34	CONCRETE SQUARE EARTH PIT CHAMBER - HCEP-B	500 mm X 500 mm X 400 mm	LOAD BEARING CAPACITY (IEC 62561-5)	TCR ENGINEERING SERVICES PVT. LTD, INDIA
35	250 MICRONS COPPER BONDED EARTH ROD	16.0 mm DIA. X 1.5 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
36	250 MICRONS COPPER BONDED EARTH ROD	16.0 mm DIA. X 1.5 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
37	250 MICRONS COPPER BONDED EARTH ROD	14.2 mm DIA. X 3 MTRS. LENGTH	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
38	COPPER 4 WAY CORNER CONNECTORS	100 mm ²	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
39	COPPER 4 WAY CORNER CONNECTORS	60 mm ²	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
40	COPPER 4 WAY MIDDLE CONNECTORS	100 mm ²	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA
41	COPPER 4 WAY MIDDLE CONNECTORS	60 mm ²	SHORT CIRCUIT WITHSTAND TEST	CPRI, INDIA

COPPER BONDED GROUNDING RODS

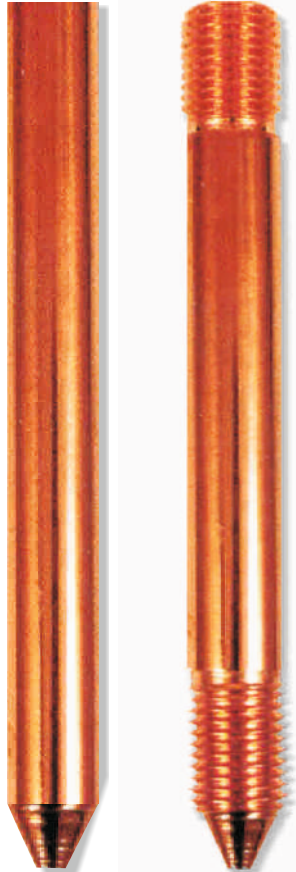


HEX copper bonded earth rods are made from low Carbon Steel as per IS 2062 standard with high tensile strength material. Low carbon steel rods are molecularly bonded with 99.9% pure electrolytic copper.

Our 254 microns copper bonded earth rods of 14.2 mm dia. & 17.2 mm dia. are compliant as per IEC 62561-2.

Salient Features :

- Perfectly bonded rod will last longer, drive easier and will not crack.
- Corrosion resistant while providing the lowest resistance to ground.
- Threads are formed by roll threading process, which ensure that an even copper coating is maintained, even at the root of the thread. Roll threads give greater strength than cut threads.
- Roll threading process raises the surface of the rod, so that thread diameter is greater than shank diameter.



Shank Diameter	Length		Copper Thk.		Thds.	Net kg/l	Product Code
	ft	mm	mil.	µm			
12.7 mm	6	1830	10	250	/	1.8	HBR - 183D
12.7 mm	8	2440	10	254	/	2.4	HBR - 244 *
12.7 mm	10	3050	10	254	/	3.0	HBR - 305E *
12.7 mm	8	2440	10	254	1/2"	2.4	HBR - 244D *
12.7 mm	10	3050	10	254	1/2"	3.0	HBR - 305D *
14.2 mm	4	1220	10	250	/	1.5	HBR - 122
14.2 mm	5	1530	10	250	/	1.8	HBR - 153
14.2 mm	6	1830	10	250	/	2.2	HBR - 183
14.2 mm	8	2440	10	254	5/8"	3.0	HBR - 244 A *
14.2 mm	10	3050	10	254	5/8"	3.7	HBR - 305 *
14.2 mm	4	1220	10	250	5/8"	1.5	HBR - 122 A
14.2 mm	5	1530	10	250	5/8"	1.8	HBR - 153 A
14.2 mm	6	1830	10	250	5/8"	2.2	HBR - 183 A
14.2 mm	8	2440	10	254	/	3.0	HBR - 244 E *
14.2 mm	10	3050	10	254	/	3.7	HBR - 305 A *
17.2 mm	5	1530	10	250	/	2.7	HBR - 153 B
17.2 mm	6	1830	10	250	/	3.3	HBR - 183 B
17.2 mm	8	2440	10	254	/	4.4	HBR - 244 B *
17.2 mm	10	3050	10	254	/	5.5	HBR - 305 B *
17.2 mm	5	1530	10	250	3/4"	2.7	HBR - 153 C
17.2 mm	6	1830	10	250	3/4"	3.3	HBR - 183 C
17.2 mm	8	2440	10	254	3/4"	4.4	HBR - 244 C *
17.2 mm	10	3050	10	254	3/4"	5.5	HBR - 305 C *
25.0 mm	10	3050	10	254	/	12.0	HBR - 2530
32.0 mm	10	3050	10	254	/	19.6	HBR - 3230

Copper bonded grounding rods are also available with Internal Threading on order. Please refer solid copper grounding rod section for dimensional details.

* These are UL listed Grounding / Earthing Rods. As per UL 467 Standard, the Copper Bonding on UL listed Grounding / Earthing Rods will be min. 254 microns.



GROUNDING ROD CLAMPS

FOR DIRECT BURIAL

WITH STAINLESS STEEL SCREW



Material	Size of Earthing Rod/Pipe	Product Code
Bronze	1/2"	HGC - 411
Bronze	5/8"	HGC - 412
Bronze	3/4"	HGC - 413

COPPER BONDED GROUNDING ROD

HEX copper bonded earth rods are made from high tensile, low carbon steel as per IS 2062. These rods are molecularly bonded with 99.9% pure electrolytic copper.

Salient Features :

- Perfectly bonded rod will last longer, drive easier and will not crack.
- Corrosion resistant while providing the lowest resistance to ground.
- Threads are formed by roll threading process, which ensure that an even copper coating is maintained, even at the root of the thread. Roll threads give greater strength than cut threads.
- Roll threading process raises the surface of the rod, so that thread diameter (T) is greater than shank diameter (S).
- Copper Bonding Thickness - 25 Microns.

Dimensions Rod Size (Dia. X Length)	Shank Dia. 'S' in mm	Thread Size 'T'	Product Code
9.5 X 1200 mm	9.5	/	HBR - 012
9.5 x 1800 mm	9.5	/	HBR - 018
14 x 1200 mm	12	M14	HBR - 1412
14 x 1500 mm	12	M14	HBR - 1415
14 x 1800 mm	12	M14	HBR - 1418
14 x 2000 mm	12	M14	HBR - 1420
14 x 2400 mm	12	M14	HBR - 1424
5/8" x 4' or 16 mm x 1200 mm	14.2	5/8"	HBR - 112
5/8" x 5' or 16 mm x 1500 mm	14.2	5/8"	HBR - 115
5/8" x 6' or 16 mm x 1800 mm	14.2	5/8"	HBR - 118
5/8" x 8' or 16 mm x 2400 mm	14.2	5/8"	HBR - 124
5/8" x 10' or 16 mm x 3000 mm	14.2	5/8"	HBR - 130
5/8" x 4' or 16 mm x 1200 mm	16	5/8"	HBR - 312
5/8" x 5' or 16 mm x 1500 mm	16	5/8"	HBR - 315
5/8" x 6' or 16 mm x 1800 mm	16	5/8"	HBR - 318
3/4" x 4' or 19 mm x 1200 mm	17.2	3/4"	HBR - 212
3/4" x 5' or 19 mm x 1500 mm	17.2	3/4"	HBR - 215
3/4" x 6' or 19 mm x 1800 mm	17.2	3/4"	HBR - 218
3/4" x 8' or 19 mm x 2400 mm	17.2	3/4"	HBR - 224
3/4" x 10' or 19 mm x 3000 mm	17.2	3/4"	HBR - 230

- Copper Bonding thickness available above 25 Microns on request.
Prod. Code of such item will be addition of Microns in Bracket.
Ex. 'HBR-215 (250)' means HBR-215 with Copper Bonding thickness of 250 Microns.
- HEX also offers other sizes as per customer specification.

GROUNDING ROD/ACCESSORIES - THREADED RODS

COUPLER

Material : Copper Alloy

Couplers are counter bored to completely enclose the threads & protect from damage and corrosion.

Size mm	Product Code Brass	Product Code Al. Bronze	Product Code Gunmetal
14	HEC - 14	HEC - 15	HEC - 15G
16 or 5/8"	HEC - 16	HEC - 17	HEC - 17G
19 or 3/4"	HEC - 19	HEC - 20	HEC - 20G

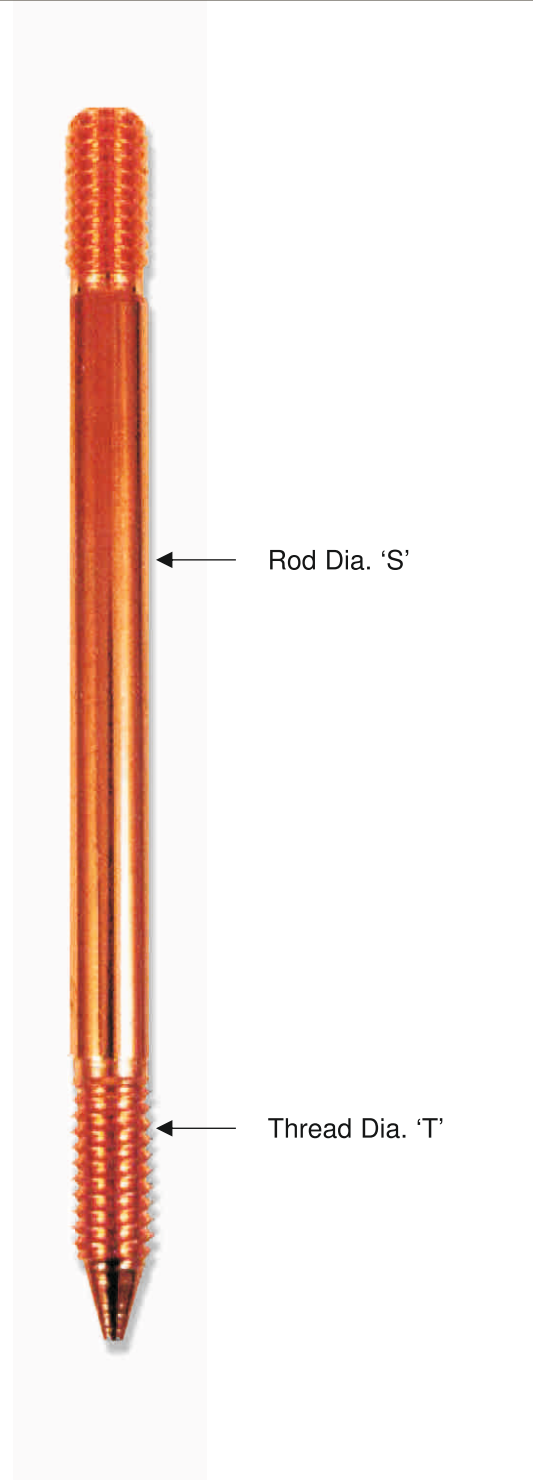
DRIVING STUD

Material : High Tensile Steel

These are used to drive the grounding Rod into the Ground.

Size	Product Code
14 mm	HDS - 14
5/8" or 16 mm	HDS - 16
3/4" or 19 mm	HDS - 19
1/2"	HDS - 12

ALLENKEY Type hardened Driving Stud available on request.



SOLID COPPER GROUNDING RODS

INTERNALLY THREADED

HEX solid Copper earth rods are made from 99.9% pure electrolytic copper. Solid Copper rods offers greater resistance to corrosion. They are ideally used in applications where soil conditions are very aggressive, for eg. soil with high salt content.

Rod Dia.	Length	Product Code
15 mm	1200 mm or 4'	HSC - 512
15 mm	1500 mm or 5'	HSC - 515
16 mm	1200 mm or 4'	HSC - 1612 **
20 mm	1200 mm or 4'	HSC - 520
20 mm	1500 mm or 5'	HSC - 521
20 mm	3050 mm or 10'	HSC - 1021 *

* Tested as per UL 467 Standard.

** Tested as per BS EN 62561 - 2 : 2012

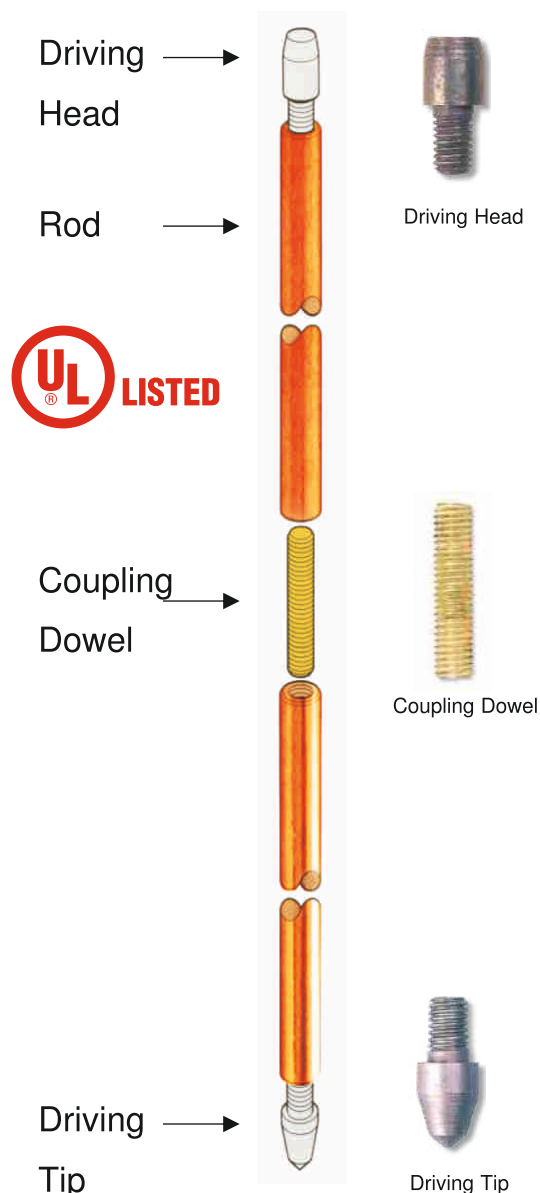
ACCESSORIES

Size	Item	Product Code
15 mm	Driving Head	HDH - 15
20 mm	Driving Head	HDH - 20
15 mm	Coupling Dowel	HCH - 15
20 mm	Coupling Dowel	HCH - 20
15 mm	Driving Tip	HDT - 15
20 mm	Driving Tip	HDT - 20

EXTERNALLY THREADED

Dimensions Rod Size (Dia X Length)	Thread Size 'T'	Product Code
14 x 1200 mm	M14	HBRS - 1412
14 x 1500 mm	M14	HBRS - 1415
5/8" x 4" or 16 mm x 1200 mm	5/8"	HBRS - 112
5/8" x 5" or 16 mm x 1500 mm	5/8"	HBRS - 115
3/4" x 4" or 19 mm x 1200 mm	3/4"	HBRS - 212
3/4" x 5" or 19 mm x 1500 mm	3/4"	HBRS - 215

- Same accessories of copper bonded grounding rods are applicable.
- HEX also offers other sizes as per customer specification.



MECHANICALLY COPPER CLADDED GROUNDING RODS

Mechanically copper cladded grounding rods are made when an electrolytic grade copper tube of 0.25 mm (250 microns) wall thickness is fitted by pressure & heat over a high tensile, low carbon steel rod to form a metallurgical bond.

Rod Dia . "S"	Length	Product Code
12 mm	1200 (4 ft)	HCR - 1412
	1800 (6 ft)	HCR - 1418
	2400 (8 ft)	HCR - 1424
14 mm	1200 (4 ft)	HCR - 112
	1800 (6 ft)	HCR - 118
	2400 (8 ft)	HCR - 124
16 mm	1200 (4 ft)	HCR - 312
	1800 (6 ft)	HCR - 318
	2400 (8 ft)	HCR - 324
	3000 (10 ft)	HCR - 330
19 mm	1200 (4 ft)	HCR - 412
	1800 (6 ft)	HCR - 418
	2400 (8 ft)	HCR - 424
	3000 (10 ft)	HCR - 430

These rods can be supplied with threading & also can be made as per customer specification.

STAINLESS STEEL GROUNDING RODS



HEX stainless steel ground rods are used to overcome many of the problems caused by galvanic corrosion which can take place between dissimilar metals buried in close proximity. Other advantages of Stainless Steel rods are that they are highly resistant to corrosion and are much more anodic than copper rods.

Diameter		Length		Pkg.	Weight (kgs)	Product Code
Inches	mm	ft	mtr			
5/8"	14.2	5'	1.52	10	2.05	HSS - 145
5/8"	14.2	8'	2.44	10	3.28	HSS - 148 *
5/8"	14.2	10'	3.05	10	4.10	HSS - 1410 *
3/4"	17.2	5'	1.52	5	2.75	HSS - 175
3/4"	17.2	10'	3.05	5	5.50	HSS - 1710 *
1.0"	23.1	10'	3.05	1	10.23	HSS - 2410 *

* These are UL listed Grounding / Earthing Rods as per UL Standard.

GROUNDING ROD ACCESSORIES - UNTHREADED RODS

Couplers

These couplers are used to drive & couple the unthreaded Rods deep and ensure continuous contact for Earthing.

Material : Copper Alloy

Product Code : HERC

Specify the rod diameter to be used with.

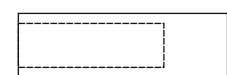
Driving Heads

These are used to drive the unthreaded grounding rods in the ground.

Material : High Tensile Steel

Product Code : HDSU

P. S.: Specify Rod diameter to be used with.



← Driving Head

POLYMER EARTH PIT CHAMBERS

The HEX range of square & round Polymer Earth Pit Housing Chambers are manufactured from customized high density polymers for superior strength & absorbing high stress levels. This in turn enhances the Load Bearing capacity (LBC) as given below. They are stabilized against degradation & damage from all weather conditions and are available in a vast range of sizes & various colours.

Being comparatively light weight, this allows for ease of handling, storage & transportation. Most of the lids or covers come with some form of locking arrangement thus providing an inbuilt safety feature to the earth pit.

They have been tested successfully for compliance as per the IEC 62561-7 standard.

SQUARE POLYMER EARTH PIT CHAMBERS						
PRODUCT DESCRIPTION	PRODUCT CODE	OUTSIDE DIMS. IN MM			NET KGS/PC.	LOAD BEARING CAPACITY IN TONS
		LENGTH	WIDTH	HEIGHT		
POLYMER BASE WITH POLYMER COVER	HEP	308.00	308.00	214.00	2.50	5.00
	HEP-S	245.00	245.00	195.00	1.00	3.00
	HEP-A	500.00	500.00	200.00	4.00	3.00
	HEP-B	500.00	500.00	315.00	5.00	3.00
POLYMER BASE WITH METAL COVER	HEP-M	308.00	308.00	214.00	5.00	5.00



HEP



HEP-S



HEP-A



HEP-B



HEP-M

ROUND POLYMER EARTH PIT CHAMBERS						
PRODUCT DESCRIPTION	PRODUCT CODE	OUTSIDE DIMS. IN MM			NET KGS/PC.	LOAD BEARING CAPACITY IN TONS
		TOP DIA.	BOT. DIA.	HEIGHT		
POLYMER BASE WITH POLYMER COVER	HEPR	154.00	213.00	230.00	0.75	5.00
	HEPR-A	260.00	355.00	260.00	2.00	5.00



HEPR



HEPR-A

CONCRETE EARTH PIT CHAMBERS

HEX offers a unique range of square & round Concrete Earth Pit Housing Chambers. These ready-to-use, robust chambers offer an easy replacement to the tedious brick & cement chambers that are constructed on-site. They are manufactured with a proprietary mortar formulation using prime materials along with advanced additives for inducing light weight properties. They also offer water resistance (low porosity) & high insulation properties, long life & stability under all weather conditions.

These chambers come in many sizes suitable for every application in the industry & the Load Bearing Capacity (LBC) of our vast range is given below. An Earth Bar for multiple connections can be fitted diagonally across, in the slots provided.

They have been tested successfully for compliance as per the IEC 62561-7 standard.

SQUARE CONCRETE EARTH PIT CHAMBERS						
PRODUCT DESCRIPTION	PRODUCT CODE	OUTSIDE DIMS. IN MM			NET KGS/PC.	LOAD BEARING CAPACITY IN TONS
		LENGTH	WIDTH	HEIGHT		
CONCRETE BASE WITH CONCRETE COVER	HCEP	310.00	310.00	170.00	25.00	5.00
	HCEP-A	320.00	320.00	195.00	30.00	5.00
	HCEP-B	500.00	500.00	400.00	120.00	5.00
	HCEP-C	510.00	510.00	400.00	130.00	5.00
	HCEP-D	500.00	500.00	250.00	100.00	5.00
CONCRETE BASE WITH METAL COVER	HCEP-M	310.00	310.00	170.00	25.00	5.00



HCEP



HCEP-A



HCEP-B



HCEP-C



HCEP-D



HCEP-M

ROUND CONCRETE EARTH PIT CHAMBERS						
PRODUCT DESCRIPTION	PRODUCT CODE	OUTSIDE DIMS. IN MM			NET KGS/PC.	LOAD BEARING CAPACITY IN TONS
		TOP DIA.	BOT DIA.	HEIGHT		
CONCRETE BASE WITH METAL COVER	HCEPR-CI	450.00	430.00	300.00	70.00	3.00



HCEPR-CI

HEX GROUND ENHANCING CHEMICAL COMPOUNDS

Soil characteristics are a primary factor to determine the resistance value of the grounding system. Clause 14.5 of IEEE 80:2013 states the following. "It is often impossible to achieve the desired reduction in ground resistance by adding more grid conductors or ground rods. An alternate solution is to effectively increase the diameter of the electrode by modifying the soil surrounding the electrode."

HEX offers a vast range of Ground Enhancing Chemical Compounds precisely as a solution to this effect. Each of these Compounds are engineered to lower the resistivity of the surrounding soil to a certain percentage. They are suitable for various soil conditions & geology. Though primarily they can be used individually, they can also be used as a blend with each other to enhance their performance. Give us the soil resistivity of the site, the details of the equipment that needs grounding & HEX will offer you the optimum blend suitable to achieve the desired resistance value of the earthing system.

Some of the special features of these compounds are :

- Highly conductive thus ensuring quick dissipation of fault currents.
- Have been tested successfully for compliance as per IEC 62561-7.
- RoHS compliant & therefore absolutely Eco friendly as they do not pollute the surrounding soil where they are used.
- Compatible with all types of earthing electrodes & their non-corrosive property increases the life of the earthing system.
- Perform in all weather conditions hence maintaining stable resistance values.
- Long shelf life, can be stored for a long period without deterioration.

These are the compounds & some of their properties:

PARAMETERS		NAME OF COMPOUND						
		TEREC+	TERRAHX+	EARTHCON	TERRAPRO	TERRAHX	TERRANITE	HEXCRETE
CHEMICAL COMPOSITION	CARBON	✓	✓	✗	✓	✓	✗	✓
	BENTONITE	✗	✓	✓	✗	✓	✓	✗
	DISPERSION	✓	✓	✓	✗	✗	✓	✗
	DIFFUSION	✓	✓	✓	✗	✗	✓	✗
	IONISATION	✓	✓	✓	✓	✓	✓	✓
	EXPANSION	✓	✓	✓	✓	✓	✓	✓
	HYGROSCOPIC	✓	✓	✓	✗	✓	✓	✗
	OTHER PATENTED	✓	✓	✗	✗	✗	✗	✗
	CEMENT	✗	✗	✗	✗	✗	✗	✓
OTHER DETAILS	BAG PACKING (KGS)	5.00	25.00	12.50	25.00	25.00	25.00	10.00
	pH VALUE	7 TO 8	7.5 TO 8.5	7.5 TO 8.5	7 TO 8	7.5 TO 8.5	8.5 TO 9.5	11.00
	SELF RESISTIVITY (OHM- MTR)	0.12	0.09	0.098	0.18	0.80	0.91	0.05
	APPROX. REDUCTION IN SOIL RESISTIVITY / BAG / METER (%)	75	70	65	60	55	50	60
	TYPE OF SOIL SUITABLE FOR	ALL	All	MOST	MOST	MOST	NORMAL	MOST



EARTH ROD SEALS

HEX Earth Rod Seals are uniquely designed to prevent the ingress of ground water into the Earth Pit Chamber. Coupled with our HEP Polymer Earth Pit Chamber which is sold separately, these Earth Rod Seal Kits are highly suitable for use when Earth Pits have to be installed during construction through foundation/basement slabs.

The Single Flange Kit (HESS) is used for a foundation slab depth of approx. 230 mm & the Double Flange Kit (HESD) is used where the depth of the foundation slab is more than that.

In foundation/basement earthing, depending on the foundation slab depth, the Big or Small flange is fitted on the damp proof membrane. The copper bonded earth rod is passed through a PVC pipe which is fitted either below the Big Flange or in between the Big & Small flanges as per the length specified by the customer. Both the ends of the earth rod are made waterproof by special seal kits. These seal kits are made specifically to suit the diameter of the earth rod.

HEX Earth Rod Seals have been tested successfully for compliance as per the IEC 62561-5 standard to withstand a pressure of 5 bar for 24 hours.

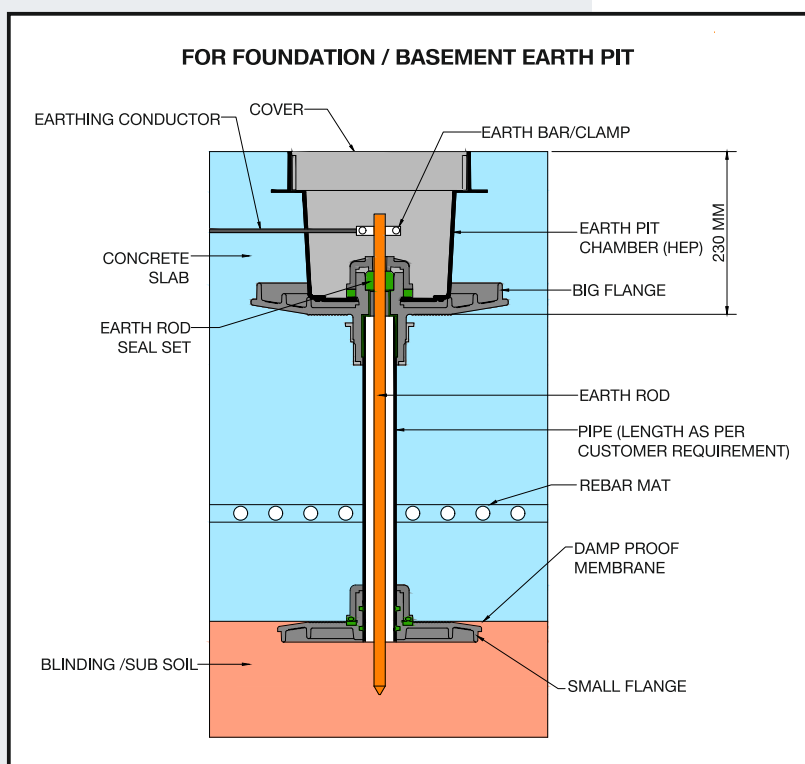
Product Code : HESS (Single Flange Kit, Weight – 2 kgs. approx.)

HESD (Double Flange Kit, Weight – 3 kgs. approx.)

NOTE : Please specify the Earth Rod diameter when ordering to ensure that the correct seal kit is supplied.



EARTH ROD SEALS INSTALLATION DIAGRAM

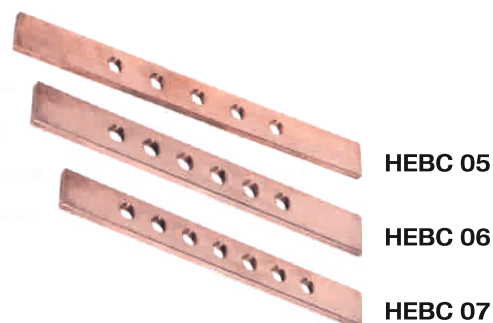


EARTH BARS FOR EARTH PITS

These earth bars fit into the slots provided in the earth pits housings and are used when multiple connections to the grounding rod are required.

Material : Copper

No. of Holes	Holes Dia. mm	L mm	W mm	T mm	Product Code
5	12	290	30	6	HEBC 05
6					HEBC 06
7					HEBC 07



P.S. : Other hole sizes / extra holes available on request.

ESE BASED LIGHTNING PROTECTION AIR TERMINAL

Satelit 3

(SGI is an authorised distributor only for Indian Sub-continent & Middle East Countries.)

The Early Streamer Emission Lightning Conductor Including Teletesting supervision

This third generation of the Duval Messien "Satelit" range uses this technology to force the lightning strike to follow a predetermined path towards the earthing system. The Satelit 3 concept consists of polarising the lightning conductor tip with a voltage of between 35 kV and 45kV, synchronised with the progress of the descending tracer, and of triggering an anticipated start for the ascending tracer. With its Satelit 3, Duval Messien is offering a ground-breaking development by introducing a remote system testing facility: the TELETES-TER-S3. Satelit 3 has been designed inside a 304L grade Stainless Steel shell in order to guarantee high resistance to impact, corrosion and chemical agents. The electronic components selected for the Satelit 3 are completely protected inside an inert resin block. The spark gap is designed to conduct currents greater than 180 kA. Satelit 3 is powered by a Ni-MH type battery, continuously recharged by indestructible, flexible solar cells.

CERTIFICATIONS

The Bazet Test Center (COFRAC approved) under Lloyd's Register control (the certified European body).



- Taran is a 2nd generation ESE type of 'active' lightning conductor that provides zonal protection in accordance with the French Standard NFC 17-102.
- It is a sturdy robust device made of 316L Stainless Steel.
- It is highly resistant against impact, corrosion and chemical agents.
- Maintenance free, compact and easy to install.
- Needs no external power source.
- Warranty for 2 years on manufacturing defects.
- Analog or Digital Lightning Strike Counter's are available on request.

CERTIFICATIONS

- ICMET - Romania.
- CPRI - India.
- CITEL - France.
- TUV Rheinland - India.

Weight : 2.4 kg

Radius of Protection :

LA MODEL	TIP HEIGHT OF ESEAT (IN METERS)								LA MODEL
	2	4	5	7	10	15	20	30	
	LEVEL 1 RADIUS OF PROTECTION (IN METERS)								
SATELIT 3 - 25	17	34	42	43	44	45	45	45	-
SATELIT 3 - 45	25	51	63	64	64	65	65	65	-
SATELIT 3 - 60	32	64	79	79	79	80	80	80	TARAN-60
	LEVEL 2 RADIUS OF PROTECTION (IN METERS)								
SATELIT 3 - 25	20	40	49	50	51	53	54	55	-
SATELIT 3 - 45	30	60	71	71	72	73	74	75	-
SATELIT 3 - 60	34	68	86	87	88	89	89	90	TARAN-60
	LEVEL 3 RADIUS OF PROTECTION (IN METERS)								
SATELIT 3 - 25	23	46	57	59	61	63	65	68	-
SATELIT 3 - 45	34	64	81	82	83	85	86	89	-
SATELIT 3 - 60	40	78	97	98	99	101	102	104	TARAN-60
	LEVEL 4 RADIUS OF PROTECTION (IN METERS)								
SATELIT 3 - 25	26	52	65	66	69	72	75	80	-
SATELIT 3 - 45	36	72	89	91	92	95	97	101	-
SATELIT 3 - 60	44	87	107	108	109	111	113	116	TARAN-60



ELPS ACCESSORIES

COPPER ALLOY CLAMPS

These clamps are made from a Copper alloy body which gives strong resistance to corrosion. HEX offers following range of clamps :-

Clamp - A type

Suitable for Rod dia. 12 mm

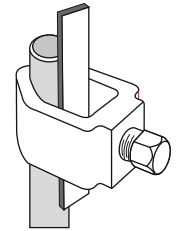
Material : Brass with MS fastener

PROD. CODE : HAC - 1



ROD TO TAPE CLAMP - B TYPE

Rod Dia.	Max. Tape Size	Product Code
5/8" or 16mm	26 x 12	HBC-1
3/4" or 20mm	25 x 3	
5/8" or 16mm	40 x 12	HBC-2
3/4" or 20mm	40 x 3	
5/8" or 16mm	50 x 12	HBC-3
3/4" or 20mm	50 x 3	

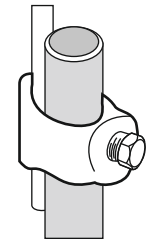


Also available in Gunmetal.

Please add G to Prod. Code (Ex. HBC-1 G for HBC-1)

ROD TO CABLE CLAMP - C TYPE

Rod Dia.	Cable Size	Product Code
3/8" or 9.5mm	35mm ²	HCC - 1
5/8" or 16mm	50mm ²	HCC - 2
5/8" or 16mm	70mm ²	HCC - 3
3/4" or 20mm	95mm ²	HCC - 4

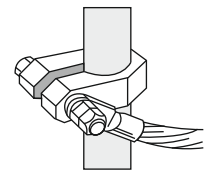


Also available in Gunmetal.

Please add G to Prod. Code (Ex. HCC-1 G for HCC-1)

ROD TO CABLE LUG CLAMP - D TYPE

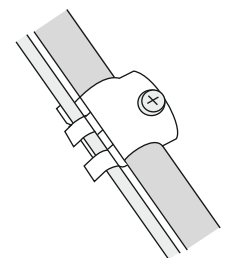
Rod Dia.	Product Code
3/8" or 9.5mm	HDC - 1
5/8" or 16mm	HDC - 2
3/4" or 20mm	HDC - 4



BRASS CABLE CLIP

Used for connecting 13mm rod to a cable range from 6 - 16 mm²

PROD. CODE : HBCC - 1



ELPS ACCESSORIES

U BOLT - ROD CLAMP

These are made from Copper with Gunmetal plate.

They can be supplied for all rods from 5/8" to 1" and Copper Tape

Max. Rod Dia.	Hole Centres	Product Code
5/8"	37 mm	HUU - 16
3/4"	37 mm	HUU - 20
1"	37 mm	HUU - 25

DOUBLE PLATE "U" BOLT CLAMP

Used to connect flat tapes in a vertical position on the rod.

Material : Gunmetal Plate with M10 threaded 'U' Bolt.

Maximum Rod Dia. mm	Tape Width mm	Product Code
16	25	HUDP 216
25		HUDP 225
31		HUDP 231
38		HUDP 238
50		HUDP 250

U BOLT - ROD TO CABLE CLAMP

These are used for connecting Rods to Cables.

Available with different Rod & Cable size.

Material : Gunmetal Plates with 'U' Bolt

Maximum Rod Diameter		Conductor Range mm ²	Product Code
5/8"	16 mm	16 - 95	HURC - 1
3/4"	20 mm	16 - 70	HURC - 2
5/8"	16 mm	70 - 185	HURC - 3
3/4"	20 mm	70 - 150	HURC - 4
5/8"	16 mm	150 - 300	HURC - 5
3/4"	20 mm	150 - 300	HURC - 6
1"	25 mm	70 - 150	HURC - 7

COMB CLAMPS

Max Cond. Ø	Product Code
3 - 5	HCP - 5
6 - 8	HCP - 1
9 - 11	HCP - 2

1 bolt brass comb clamp for round conductors with galvanised steel screws in accordance with IEC Standards

Max Cond. Ø	Product Code
3 - 5	HCP - 6
6 - 8	HCP - 3
9 - 11	HCP - 4
12 - 14	HCP - 7

2 bolts brass comb clamp for round conductors with galvanised steel screws in accordance with IEC Standards

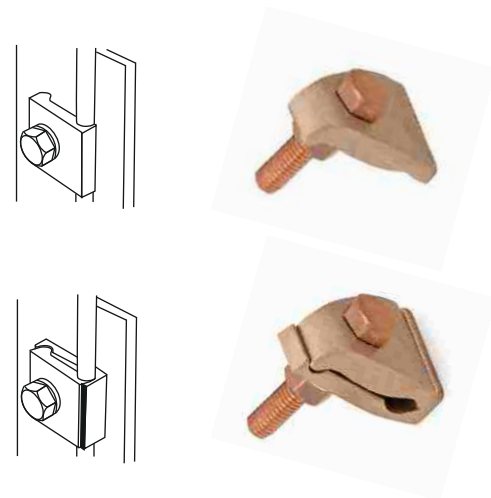
ELPS ACCESSORIES

TOWER BOND CLAMP

Mtl - Gunmetal

These are suitable for bonding copper cable or wire to steel structures.

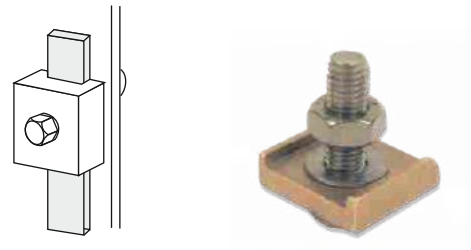
Cond. Size mm ²		Channel	Bolt	Product Code
Min.	Max.	Thickness mm		
16	70	10	M10	HTB - 16
70	120	10	M12	HTB - 70
25	50	10	M10	HTB - 25
25	50	10	M10	HTB - 25A



TOWER BOND CLAMP

These are used for bonding tape to steel structures.

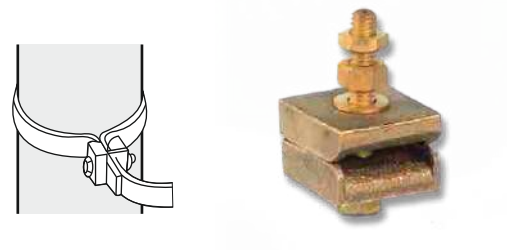
Max. Tape Width mm	Bolt Size	Material	Product Code
25	M 10	Brass	HB - 25B
25	M 10	Gunmetal	HB - 25G



RAIN WATER PIPE BONDS - A

These are suitable for bonding tape to Rain water Pipe, Handrails etc.

Max. Tape Width mm	Bolt Size	Material	Product Code
25	M 10	Brass	HRW - 25B
25	M 10	Gunmetal	HRW - 25G



RAIN WATER PIPE BONDS - B

Mtl - Gunmetal

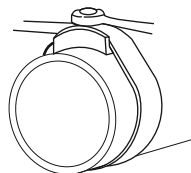
These are suitable for bonding with earthing conductor.

And to be used with separate copper earth strip.

These are used for bonding the round objects (pipes/rails), ducts etc.

Conductor diameter	Pipe diameter	Conductor Material	Product Code
8mm	50-200mm	Copper	HBN175





ELPS ACCESSORIES

WATERMAIN BOND

Mtl - Gunmetal

These are used for bonding copper tape to Watermain pipes.

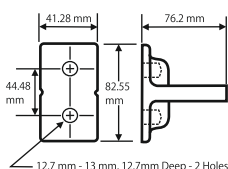
Max. Tape Width mm	Conductor Material	Product Code
25	Copper	HWMB - 25C
25	Aluminium	HWMB - 25A

FLEXIBLE BRAID BOND

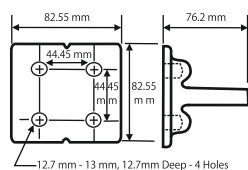
Mtl - Copper

Copper Flexible Braids are used for bonding gates, doors, fences etc.

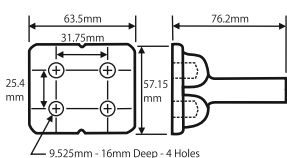
Size mm	Cross Section area	Hole Size mm	Hole Centre mm	Product Code
25 x 3.5	35 mm ²	11	200	HFB - 252
25 x 3.5	35 mm ²	11	300	HFB - 253
25 x 3.5	35 mm ²	11	400	HFB - 254



Drwg. A : HCCP - 2120



Drwg. B : HCCP - 4120 / HCCP - 4240



Drwg. C : HCCPL - 4240

CAST GROUND PLATE OR EARTH PLATE

These Plates when used in concrete structures offer convenient ground system connection points. They are used where reinforcing bars are electrically continuous & are to be used as down conductors. These earth points allow easy access for the lightning protection & earthing system.

Drwg. No.	Cond. Size	Hole	Product Code
A	120	2 Hole	HCCP - 2120
B	120	4 Hole	HCCP - 4120
B	240	4 Hole	HCCP - 4240
C	240	4 Hole	HCCPL - 4240

EARTH BLOCKS

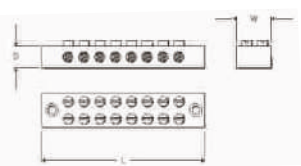
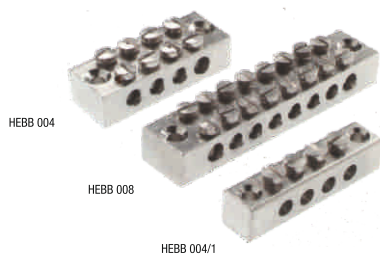
HEX Earth Blocks are used for Termination of earth Conductors or live conductors.

Type	L mm	W mm	D mm	Product Code
4 -Way Single	54	18	12	HEBB 004/1
4 -Way Double	51	19	12	HEBB 004
8 -Way Double	88	19	12	HEBB 008

Material : Brass

Finish : Nickel Plated

Tin Plated available on request.



ELPS ACCESSORIES

AERIAL ELEVATION ROD

Mtl : Electrolytic Copper

Air Rod can be installed with or without Multiple Point.

Rod Diameter	Thread Diameter	Length of Rod	Old Product Code	New Product Code
15 mm	5/8"	500 mm	HAE - 15	HAE - 500
15 mm	5/8"	1000 mm	HAE - 40	HAE - 1000
15 mm	5/8"	1500 mm	-	HAE - 1500
15 mm	5/8"	2000 mm	HAE - 120	HAE - 2000

PS. Other sizes available on request.



Lock Nut

MULTIPLE POINT

Material : Copper / Copper Alloy

Multiple Point is used with Elevation rod.

THREAD SIZE	MATERIAL	PRODUCT CODE
M16 or 5/8"	BRASS (COPPER PLATED)	HMP - 16
M20 or 3/4"	BRASS (COPPER PLATED)	HMP - 20
M16 or 20	COPPER	HMP - SPL-C
M16 to 20	BRASS (COPPER PLATED)	HMP - SPL-B



HMP



HMP-SPL

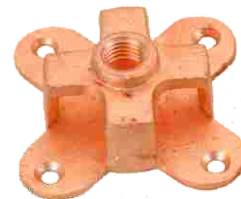
TERMINAL BASE

Material : Brass (Copper Plated)

Used for fixing Aerial Rod and Down Conductor.

Four fixing holes are provided on it.

THREAD SIZE	PRODUCT CODE
M16 or 5/8"	HTB - LP - 16
M20 or 3/4"	HTB - LP - 20



Also available in Gunmetal.

Please add G to Prod. Code (Ex. HTB - LP - 16G)

AERIAL ROD + TERMINAL BASE

Aerial Rod + Multiple Point + Terminal Base

Mtl - Copper / Copper Alloy

ITEM	MULTIPLE POINT	AERIAL ROD DESCRIPTION			TERMINAL BASE	PRODUCT CODE
		DIA. (mm)	LENGTH (mm)	TYPE		
A	HMP-16	14	1200	CU. BONDED	HTB-LP-16	HLA-144 CBR
B	-	14	1200	CU. BONDED	HTB-LP-16	HLA-14 CBR
C	HMP-SPL	14	1200	CU. BONDED	HTB-LP-16	HLA-154 CBR
A	HMP-16	15	1200	SOLID CU.	HTB-LP-16	HLA-144 SCR
B	-	15	1200	SOLID CU.	HTB-LP-16	HLA-14 SCR
C	HMP-SPL	15	1200	SOLID CU.	HTB-LP-16	HLA-154 SCR



A

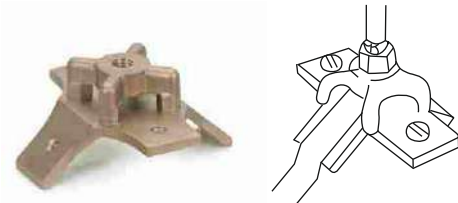


B



C

ELPS ACCESSORIES

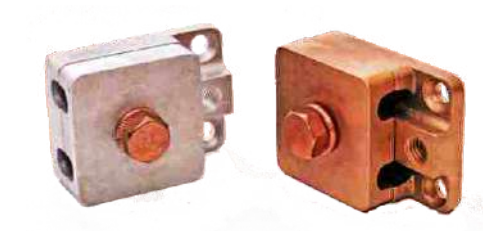


RIDGE SADDLE

PROD. CODE : HRDS - 1

Mtl - Gunmetal / Brass

Used for supporting Lightning Conductor Air Terminals on Ridges.



MULTI-PURPOSE AIR ROD SADDLES

These saddles can be installed horizontally on roofs or vertically on walls and are used in conjunction with the air rods.

The saddles are suitable for use with 8mm diameter solid circular conductor as well as 25 x 3mm flat tape.

Material : gunmetal / Aluminum

Application with	Product Code
Copper Air Rods	HUAG - 253
Al. Air Rods	HUAA - 253

PS. Specify Grounding Rod size to be used with.



FLAT SADDLE - A

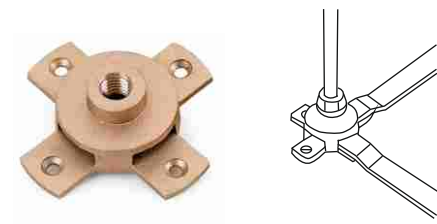
Mtl : Brass / Gunmetal

Used for supporting taper pointed or blunt air rods on flat surfaces.

Recommended finishing :- Countersunk woodscrew 1 1/2" x no. 10 & wall plug.

Rod Length	Rod Dia.	Thread Dia.	Product Code
50 mm	15 mm	5/8"	HSD - 155
70 mm	15 mm	5/8"	HSD - 160
95 mm	15 mm	5/8"	HSD - 165

* For Gunmetal add 'G' after product code.



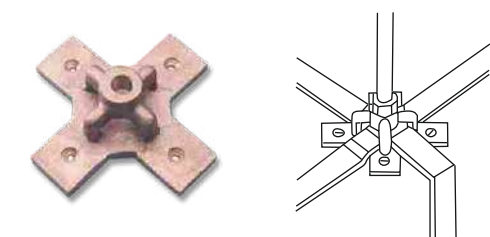
LIGHT DUTY SADDLE

Mtl : Brass / Gunmetal

Used for supporting lightning conductor Air Terminals.

Thread Dia. mm	Max Cond. Width mm	Product Code
10	25	HLD - 1025
16	25	HLD - 1625
20	25	HLD - 2025

Also available for Aluminium conductor, please specify your requirement.



FLAT SADDLE

Mtl : Brass / Gunmetal

Used for supporting lightning conductor Air Terminals.

Thread Dia. mm	Max Cond. Width mm	Product Code
10	25	HFLD - 1025
16	25	HFLD - 1625
20	25	HFLD - 2025

Also available for Aluminium conductor, please specify your requirement.

ELPS ACCESSORIES

SIDE MOUNTING ROD BRACKET

Mtl : Brass / Gunmetal

Above bracket provides a 75mm projection from the face of a wall.

Mfd. either in Gunmetal or Brass.

Air Rod Diameter (mm)	Product Code
10	HSM - 10
16	HSM - 16
20	HSM - 20

Also available for Aluminium conductor, please specify your requirement.

ROD TO TAPE COUPLING

Mtl : Brass / Gunmetal

Used to secure elevation rod by means of a bolted connection

Air Rod Dia. mm	Thread Dia. mm	Rod Material	Product Code
15	16	Copper	HRT - 16C
15	16	Aluminium	HRT - 16A

* For Gunmetal add 'G' after product code.

TAPE CLIP

Mtl : Brass

These are used with Bare Copper Tape

Conductor Size (mm)	Product Code
20 x 3	HTC - 203
25 x 3	HTC - 253
50 x 6	HTC - 506

Also available for Aluminium conductor on request.

DC TAPE CLIP

Mtl : Brass / Gunmetal

These are used with Bare Copper Tape Conductor.

Conductor Size (mm)	Product Code
25 x 3	HDTC - 253
25 x 6	HDTC - 256
30 x 5	HDTC - 305
40 x 5	HDTC - 405
40 x 6	HDTC - 406
50 x 6	HDTC - 506
50 x 8	HDTC - 508

Also available for Aluminium conductor on request.

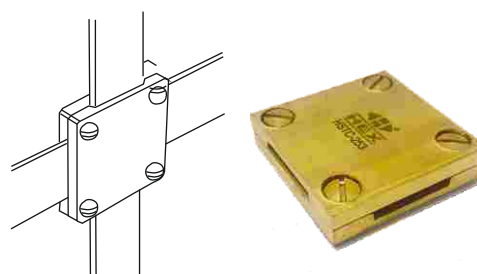
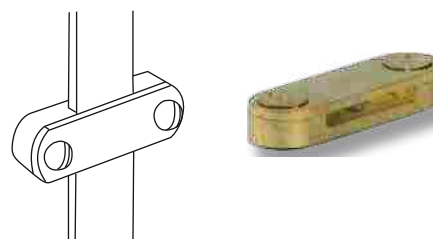
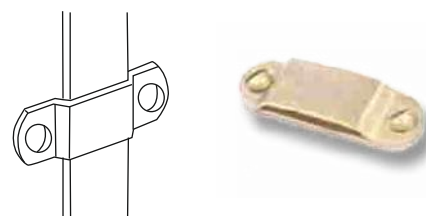
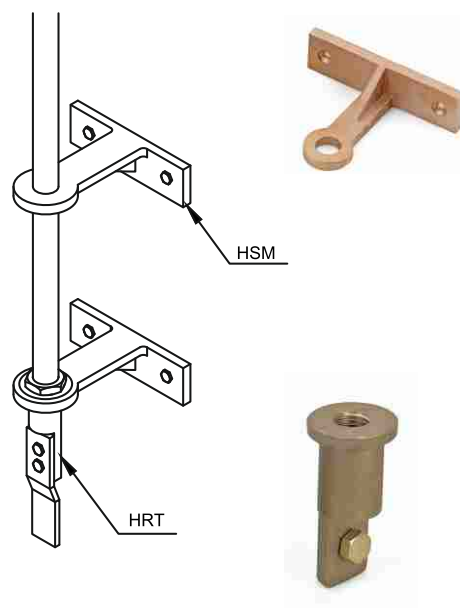
SQUARE TAPE CLAMP

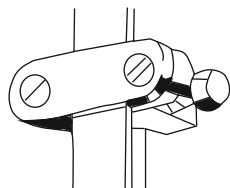
Mtl : Brass / Gunmetal

These are suitable for Four Way Connections of Copper Tape

Conductor Size (mm)	Product Code
25 x 3	HSTC - 253
25 x 6	HSTC - 256
30 x 5	HSTC - 305
40 x 5	HSTC - 405
40 x 6	HSTC - 406
50 x 6	HSTC - 506
50 x 8	HSTC - 508

Also available for Aluminium conductor on request.





ELPS ACCESSORIES

GLAZING BAR HOLDFAST

Mtl : Gunmetal

These are secured to Glazing Bar, Steel Frame, Girdles etc.

The Item is designed for use with appropriate size of metallic on non-metallic conductor fixing.

Max. Glazing Bar Width mm	Application with	Product Code
12	Copper Tape	HGBH - 12C
12	Aluminum Tape	HGBH - 12A

UNIVERSAL CABLE CONNECTOR

Mtl : Stainless Steel / Gunmetal

These are used for connecting Cable Conductors



Conductor Size (mm)	Product Code
70	HUCC - 70
95	HUCC - 95
120	HUCC - 120

* For Gunmetal add 'G' after product code.

BACK PLATE HOLDFAST STEM

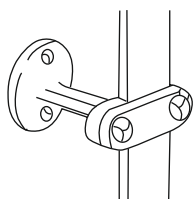
Mtl : Gunmetal

For use with appropriate DC Tape Clip.

It is used when the installation requires the tape to be secured 75 mm away from the face of the building

Prod. Code : HBPH - 12

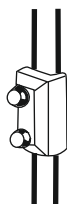
Also available for Aluminium conductor, please specify your requirement.



OBLONG TEST CLAMP

Mtl : Brass / Gunmetal

These are used with Bare Copper Tape Conductor



Conductor Size (mm)	Product Code
25 x 3	HOT - 253
40 x 6	HOT - 406
50 x 6	HOT - 506

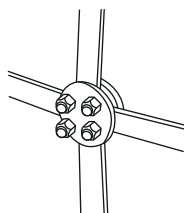
Also available for Aluminium conductor on request.

* For Gunmetal add 'G' after product code.

TEST BOND / TEST CLAMP

Mtl : Gunmetal / Brass

These are used for 4 way Copper Tape Connection



Conductor Size (mm)	Product Code
26 x 12	HTBC - 2612

Also available for Aluminium conductor on request.

* For Gunmetal add 'G' after product code.

ELPS ACCESSORIES

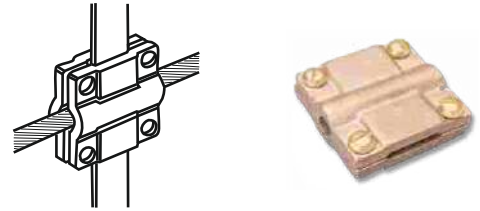
CABLE TO TAPE JUNCTION CLAMP

Mtl : Brass / Gunmetal

These are used for connecting Copper Tape to Cable

Tape Size mm	Cable Size mm ²	Product Code
25 x 3	50	HCTJ - 253

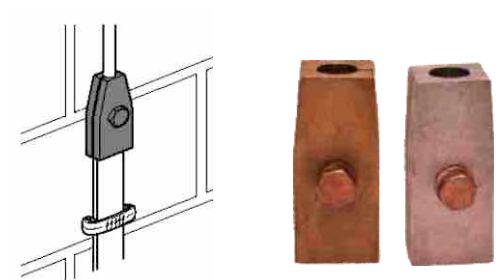
* For Gunmetal add 'G' after product code.



INTERFACE TEST CLAMPS

These Clamps are used to connect flat tape to solid circular conductor. It will also serve for making through joints and tee connections in 8 mm solid circular conductor.

Application with	Material	Product Code
Copper Conductor	Gunmetal	HJYG - 08
Aluminum Conductor	Aluminum	HJYA - 08



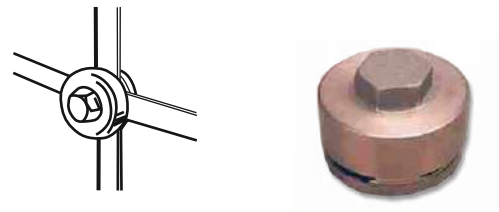
SCREWDOWN TEST CLAMP

Mtl : Brass / Gunmetal

These are used for fixing 2 Way Copper Tape

Conductor Size (mm)	Product Code
25 x 3	HSDTC - 253

* For Gunmetal add 'G' after product code.



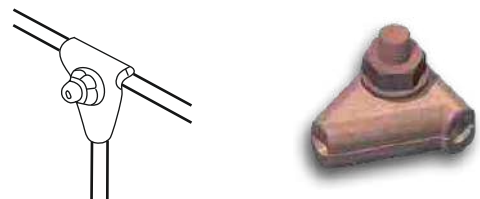
TEE CLAMP

Mtl : Brass / Gunmetal

These are used for forming a Tee joint of round conductors.

Conductor Dia. (mm)	Product Code
8 Cu	HTEC - 8C
8 Al	HTEC - 8A

* For Gunmetal add 'G' after product code.



STRIKE PADS

Strike pad is used where it is not possible to install conductor on the roof or side of a building. Supplied with a 40mm threaded stud and nut.

Material : Aluminum / Gunmetal

Application with	Product Code
Copper Conductor	HSPC - 01
Al. Conductor	HSPA - 01

* For Gunmetal add 'G' after product code.



ELPS ACCESSORIES

JOINTING CLAMP

Mtl : Brass / Gunmetal

These are used for forming straight through joints.

Conductor Dia. (mm)	Product Code
8 Cu	HJC - 8C
8 Al	HJC - 8A

* For Gunmetal add 'G' after product code.

ONE HOLE CABLE CLIP

Mtl : Copper

These are recommended to fix cable conductors

Conductor Dia. (mm)	Product Code
8	HOH - 8
12	HOH - 12
16	HOH - 16
20	HOH - 20

BI-METALLIC CONNECTOR

Mtl : Copper & Aluminium

These are used for joining Aluminium & Copper circular or flat conductors together.

Application	Product Code
8 mm Dia. Al to 8 mm Dia. Cu	HBI - 8
8 mm Dia. Al to 25 x 3 Cu Tape	HBI - 825
20 x 3 Al Tape to 20 x 3 Cu Tape	HBI - 203
25 x 3 Al Tape to 25 x 3 Cu Tape	HBI - 253

COPPER EARTH/LINK

Product Code : Copper Earth/Link

Finish : Copper/Tinned

HEAVY DUTY CAST CABLE SADDLE

Mtl : Brass / Gunmetal

These are used with 8mm conductor or for supporting Air Terminals when used in conjunction with wall mounted Air Terminal base.

Conductor Dia. (mm)	Product Code
8	HDCC - 8
10	HDCC - 10

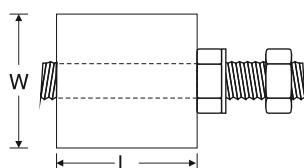
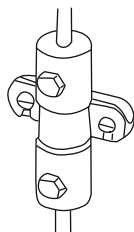
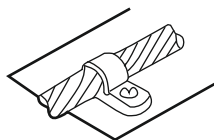
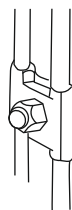
* For Gunmetal add 'G' after product code.

EARTH BOSS

Material : Body - Mild Steel, Fittings - Stainless Steel

The earth boss is designed to provide an earth point on a steel structure
The boss is welded into place.

Hole Thread	L	W	Product Code
10	50	50	HPB - 01



ELPS ACCESSORIES

GROUND CLAMPS



BRASS GROUND CLAMPS
FOR DIRECT BURIAL STAINLESS SCREWS

Fits 8 STR to 4/0 STR AWG

Size	Product Code	
1/2" to 1'	HGC - 625	*
1/2" to 1'	HGC - 626	*

3/8" to 1" Rebar, 1/2" to 1" Water Pipe, Copper Water Pipe and Ground Rod

Size	Product Code	
1/2" to 1"	HGC - 626 A	*
1/2"	HGC - 626 BS	*
1 1/4" to 2"	HGC - 626 B	*
2 1/2" to 4"	HGC - 626 C	*
For Direct Burial - Bronze		
1/2" to 1"	HGC - 620 DB	*

ZINC DIE CAST
Fits 10, 8, 6, 4, & 2 AWG.

For Bare Wire

Size	Product Code	
1/2" to 1"	HGC - 626 Z	*

BRONZE / BRASS
Fits 8, 6 or 4 Bare Armored Ground wire

For Armored Size	Product Code	
1/2" to 1"	HGC - 630 B	*
1 1/4" to 2"	HGC - 630	*
For Direct Burial - Bronze		
1/2" to 2"	HGC - 630 DB	*

WITH THREADED HUBS FOR CONDUIT PIPE

	Size	Product Code	
For 1/2" HUB	1/2" to 1'	HGCH - 621	*
	1 1/4" to 2"	HGCH - 622	*
	2 1/2" to 4"	HGCH - 623	*
	5" to 6"	HGCH - 624	*
For 3/4" HUB	1/2" to 1'	HGCH - 621 A	*
	1 1/4" to 2"	HGCH - 622 A	*
	2 1/2" to 4"	HGCH - 623 A	*
	5" to 6"	HGCH - 624 A	*
For 1" HUB	1/2" to 1'	HGCH - 621 B	*
	1 1/4" to 2"	HGCH - 622 B	*
	2 1/2" to 4"	HGCH - 623 B	*
	5" to 6"	HGCH - 624 B	*

* These are UL Listed Ground Clamps.





ELPS ACCESSORIES

EQUIPOTENTIAL BONDING BARS

Equipotential Bonding Bar with HIP Plastic Cover and Base suitable for connecting.

Specification in mm

1 x flat bands to max. 30 x 5 or 8 to 10

1 x 8 - 12 round conductor

7 x one or multi-wired conductor to max. 25 mm² and 16 mm²

ROOF CONDUCTOR SUPPORT

Used for flat roof made up of black, weather resistant plastic a recyclable filling with one conductor holder.

Size mm	Specification	Product Code
8,0	Plastic Enclosed box and Lid	HURCH - 010

ROOF CONDUCTOR SUPPORT

Size mm	Specification	Product Code
8 / Typ. HFL	Alu. w/Niro Clip	HRCS - 007

ROOF CONDUCTOR HOLDER WITH NIRO-CLIP

Universal Roof Conductor Holder as per DIN 48826 B

Size mm	Specification	Holder	Product Code
8,0	S.S. 304	Plastic	HURCH - 008
8,0	Copper	Plastic	HURCH - 009

WALL & ROOF CONDUCTOR HOLDERS (for attaching wire to wall)

As per DIN 48286 B pit for all the sizes

Size mm	Specification Clips	Holder	Product Code
8.0 / Type HFL	S.S./Galvanized/Varnished	Niro Clip	HNC - 011
8.0 / Type HFL	S.S./Galvanized/Varnished	Niro Clip	HNC - 012
8.0 / Type HFL	S.S./Galvanized/Varnished	Niro Clip	HNC - 013
8.0 / Type HFL	S.S./Galvanized/Varnished	Niro Clip	HNC - 014

WALL & ROOF CONDUCTOR HOLDERS Niro Clip Snap-on-holder

Used for attaching wires to walls.

Material : Snap - on mechanism and base made up of stainless steel grade 304

Conductor Dia. mm	Material	Product Code
8.0 / 10.0	S.S. 304	HNC - 001

ELPS ACCESSORIES

AL. SQUARE EARTH PLATE WITH AL. PIPE

Used for flat roof made up Al. square plate 1 mm thick with 100 mm long Al. Pipe

Size mm	Specification	Product Code
100 x 100 x 100	Aluminium Earth Assembly	HAEA - 010
Max. 3 mm		



LEAD SQUARE EARTH PLATE WITH LEAD PIPE

Used for flat roof made up Lead square plate 1 mm thick with 30 mm long Lead Pipe

Size mm	Specification	Product Code
100 x 100 x 30	Lead Earth Assembly	HLEA - 010
Thick - 1 to 5		



CONNECTION CLAMPS & CROSS CLAMPS NUMBER TAGS

Size mm	Specification	Product Code
8.0 - 10.0	Aluminum	HNT - 019
16.0	Aluminum	HNT - 020



MULTI CLAMP

Available from 8 mm to 16 mm rod connection

Size mm	Specification	Product Code
8.0 - 10.0	S. S. 304 / Galvanized	HMC - 024
8.0 - 16.0	Copper	HMC - 025



ROUND TYPE EARTH-CLAMP HOLDER - PLASTIC (NYLON SIX)

Size mm	Specification	Product Code
8.0	Nylon 6 Clamp	HNSC - 028





ELPS ACCESSORIES

SQUARE TYPE EARTH-CLAMP HOLDER - PLASTIC (NYLON SIX)

Size mm	Specification	Product Code
8.0	Nylon 6 Clamp	HNSC - 028

NON METALLIC SLATE HOLDFAST

Conductor diameter	Colour	Product Code
8mm	Grey	HHF 191

Variations of tail length, clip size and clip colour can be made to order as special items.

ROUND DISC HOLDER WITH PVC POINTED EARTHING ROD ASSEMBLY

Size mm	Specification	Product Code
8.0	Round Clamp Assembly	HRCA - 028

PLASTIC DC TAPE CLIP

Tape Size	Material	Product Code
25 x 3 mm	Nylon with UV additive	HPDT - 021

CABLE / CONDUCTOR HOLDER

Used for clamping 25x3 tape or 8mm/10mm dia round conductor.

Product Code HWHP - 6

Material : Nylon with UV additive

PIPE HOLDER

Nylon - 6 Pipe holder suitable for 25mm dia. pipes or conduits.

Product Code HPHN - 6

ELPS ACCESSORIES

EARTHING PIPE CLAMP

for conductor with a max. diameters of 50 mm.

Size mm	Specification	Product Code
17.2-26.9	Copper / Galvanized / Tin-plated	HEPC - 029
25.0-36.0	Copper / Galvanized / Tin-plated	HEPC - 030



SADDLE CLAMP AND BASE

Specification dia	Distance btw. holes	Material	Product Code
7.0	7 - 10	Aluminum	HSC - 003
7.0	7 - 10	Copper	HSC - 004



END PIECE

Universal Roof Conductor Holder as per DIN 48826 B

Size mm	Specification	Product Code
8.0 - 10.0	Aluminum	HEPA - 022
8.0 - 10.0	Copper	HEPC - 023
8.0 - 10.0	Stainless Steel	HEPS - 024



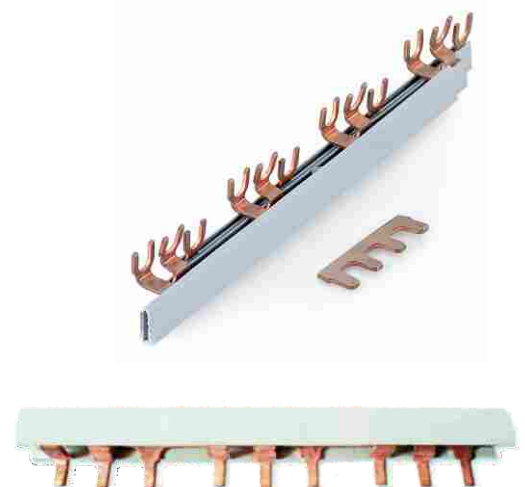
COMB BAR / EARTHING STRAP / INSULATED BUS BAR

- Used for multipole bridging of lightning current and over voltage arresters.
- Used to bridge earthing clamps from 2, 3 or 4 over voltage arresters.

Way	Type	Product Code
56	Single Pin	HIB - SP56
56	Single Fork	HIB - SF56
28	Double Pin	HIB - DP28
28	Double Fork	HIB - DF28
19	Triple Pin	HIB - TP19
19	Triple Fork	HIB - TF19
14	Four Pin	HIB - FP14
14	Four Fork	HIB - FF14

* Add 'T' after Product Code for Tinned Finish

* Std. Length : 1 mtr. Also available other length on request.



ELPS ACCESSORIES

EARTHING CLAMPS

Used to connect the pipes to conductor for earthing.

Special features :-

- Designed & Manufactured under strict and approved quality control procedures, as per BS 951 standards.
- Available in 2 Colours :
Red for Non-corrosive dry atmosphere and Blue for corrosive humid conditions.
- Available in 3 standard Band Lengths to suit
Pipe diameters of 12mm - 32mm, 32mm - 50mm and 50mm - 75mm.
- Available in 2 Terminal Sizes :
A-D for conductors of 2.5mm² - 10mm² and A-E for conductors of 2.5 mm² - 16mm² (A-E being identified by its Blue safety label)

Terminal Size	Features	Material Spec.	Product Code
A-D 2.5mm ² -10mm ²	Colour coded Red suitable for clean dry atmospheric conditions	Brass	HET - 14
A-D 2.5mm ² -10mm ²	Colour coded Blue suitable for all environment	Phosphorous Bronze	HET - 15
A-E 2.5mm ² -16mm ²	Colour coded Blue suitable for all environment	Phosphorous Bronze	HET - 16

- For all above products, larger bands are also available to special order.
- To increase the size of conductor usable with HET 16 Earth Clamp, use one of the HEX range of Cable lugs.
- All Earth Clamps have anodized Aluminium labels indicating terminal size.

RADIATOR EARTHING CLAMPS

These clamps are easy to install and re-instate.

Used in radiators, ceilings, sink units and metal working surface.

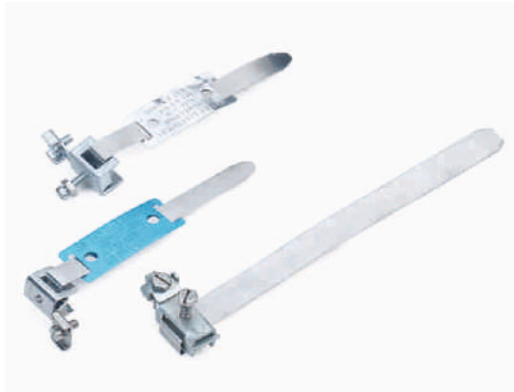
It takes wire size of 4 - 6 mm²

BAND EARTH CLAMP

Used to connect the pipes to conductor for earthing

Used for Steel and Copper pipe range between diameter 17 - 115 mm

Specification	Size	Product Code
All parts are of Stainless Steel	3/8" - 11/2"	HBEC - 031
	17 - 50 mm	
	3/4" - 4"	HBEC - 032
	27 - 115 mm	



EARTH BARS & DISCONNECTING LINKS

Material for Disconnecting Links and Earth Bars :

Bar : 50 mm x 6 mm hard drawn copper bar as per BS EN 13601

Base : Plastic. Also available with Steel Base on request.

Fittings : M10 Hexagon Head Bolts, Nuts & Washers.

Other sizes & combinations of Earth Bars / Disconnecting Links are manufactured as "Special Items" on request.

Description	L mm	W mm	Product Code
Disconnecting Link	125	90	HDL - 11



HDL - 11

EARTH BARS

No. of Terminations	L mm	W mm	Product Code
6	400		HDL 14
8	500		HDL 15
10	600		HDL 16
12	700		HDL 17
14	800		HDL 18
16	900		HDL 19
18	1050	90.0	HDL 20
20	1150		HDL 21
22	1250		HDL 22
24	1400		HDL 23
26	1500		HDL 24
28	1600		HDL 25
30	1700		HDL 26



HDL - 14

EARTH BARS WITH SINGLE DISCONNECTING LINK

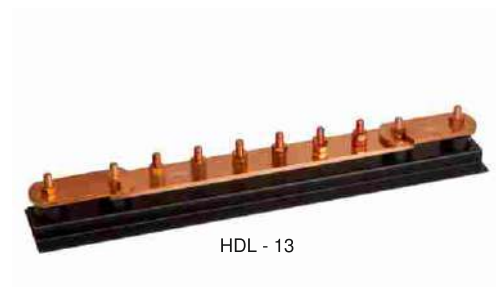
No. of Terminations	L mm	W mm	Product Code
6	475		HDL 12
8	575		HDL 27
10	675		HDL 28
12	775		HDL 29
14	875		HDL 30
16	1025		HDL 31
18	1125	90.0	HDL 32
20	1225		HDL 33
22	1325		HDL 34
24	1425		HDL 35
26	1575		HDL 36
28	1675		HDL 37
30	1775		HDL 38



HDL - 12

EARTH BARS WITH DOUBLE DISCONNECTING LINKS

No. of Terminations	L mm	W mm	Product Code
6	550		HDL 13
8	650		HDL 39
10	750		HDL 40
12	850		HDL 41
14	950		HDL 42
16	1100		HDL 43
18	1200	90.0	HDL 44
20	1300		HDL 45
22	1400		HDL 46
24	1550		HDL 47
26	1650		HDL 48
28	1750		HDL 49
30	1850		HDL 50



HDL - 13

Notes : Dimension L is the overall length. Dimension W is the width of the plastic base.
Tinned Busbar available on request. Add 'T', to Prod Code.

ELPS ACCESSORIES

SOLID COPPER EARTH PLATE

Mtl : Electrolytic Copper

SIZE (A x B x C)	PRODUCT CODE
600 x 600 x 1.5	HSCP - 615
600 x 600 x 3	HSCP - 63
600 x 600 x 5	HSCP - 65
500 x 500 x 3	HSCP - 53
500 x 500 x 5	HSCP - 55
900 x 900 x 3	HSCP - 93
900 x 900 x 5	HSCP - 95
1000 x 1000 x 3	HSCP - 103
1000 x 1000 x 5	HSCP - 105

COPPER BONDED EARTH PLATE

Mtl : Steel

SIZE (A x B x C)	PRODUCT CODE
600 x 600 x 1.5	HBP - 615
600 x 600 x 1.5	HBP - 515
600 x 600 x 3	HBP - 63
900 x 900 x 3	HBP - 93
500 x 500 x 3	HBP - 53

EARTH PLATE - LATICE COPPER

Mtl : Electrolytic Copper

SIZE (A x B x C)	PRODUCT CODE
600 x 600 x 3	HLP - 63
900 x 900 x 3	HLP - 93
500 x 500 x 3	HLP - 53

CONDUCTORS

Hard Drawn Copper Bar

Size (A X B)	Product Code
25 x 3	HDCB - 253
25 x 6	HDCB - 256
38 x 6	HDCB - 386
50 x 6	HDCB - 506
50 x 10	HDCB - 5010
75 x 6	HDCB - 756

High conductivity Copper Bar to BS - 2874 - C101/C103
Supplied in max. lengths of 3 mts.
Tinned on request.

PVC COVERED COPPER TAPE

Conductor size	Standard coil size	Product Code
12.5 x 1.5 mm	50m	HCTI - 125/15
25 x 3 mm	50m	HCTI - 253
25 x 6 mm	25m	HCTI - 256
50 x 6 mm	20m	HCTI - 506

Std. Colour : Black

Other colours are available on request.

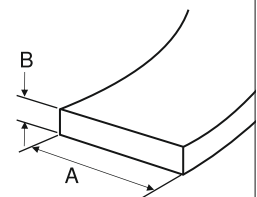
ELPS ACCESSORIES

CONDUCTORS

Bare Copper Tape

High conductivity Cu Tape to BS - 1432 - C101/C103

Size (A x B) mm	Product Code
20 x 1.5	HCT - 2015
25 x 1.5	HCT - 2515
25 x 3	HCT - 253
25 x 4	HCT - 254
25 x 6	HCT - 256
40 x 6	HCT - 406
50 x 3	HCT - 503
50 x 6	HCT - 506



FLEXIBLE COPPER BRAIDS

High conductivity Copper

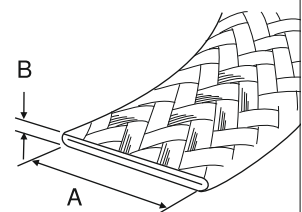
Wire to BS - 4109 - C101

Suitable for Earth Bonding.

Also supplied as Standard Drilled & Pre-Cut Bonds.

Customer specific sizes & types of braid can be manufactured on order.

Size mm ²	Overall Nominal Equivalent Size mm (AxB)	Product Code
8.75	Bare Braid 15 x 1.4	HBB - 151
34.7	Bare Braid 25 x 3.5	HBB - 253
34.7	Tinned Braid 25 x 3.5	HTB - 253



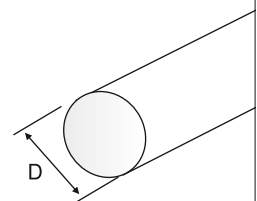
CONDUCTORS - SOLID

Bare Solid Circular Conductor

Cu to BS - 1433 - C101 / 103

Al to BS 2898 - 1350

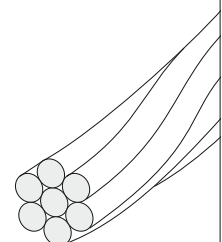
Conductor	Dia. (D) mm	Cross Section area mm ²	Product Code
Copper	8	50.0	HBSC - 8C
Aluminium	8	50.0	HBSC - 8A



Bare Stranded Copper Conductor

Soft Drawn Cu Conductor to BS - 6360

Size mm ²	Standing No. / mm	Product Code
6	7 / 1.04	HBCU - 6
16	7 / 1.70	HBCU - 16
25	7 / 2.14	HBCU - 25
35	7 / 2.52	HBCU - 35
50	19 / 1.75	HBCU - 50
70	19 / 2.14	HBCU - 70
95	19 / 2.52	HBCU - 95



CDEGS FOR POWER SYSTEM STUDIES & ELPS DESIGNING

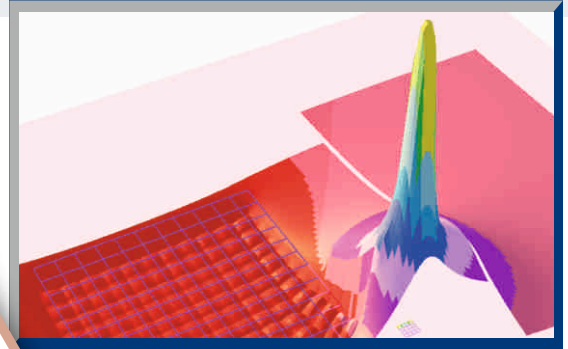
HEX provides a one-stop, cost-effective solution offering you design services with the help of the top-rated international software CDEGS (Current Distribution, Electromagnetic fields, Grounding and Soil Structure Analysis).

The CDEGS Suite includes a complete array of auxiliary software tool modules designed to complement, support, and enhance the methods used to solve various problems, involving Earthing/Grounding, Lightning Protection Systems & Power System studies.

It also recommends the most optimal configuration and design for your electrical systems to ensure safe and reliable operation.

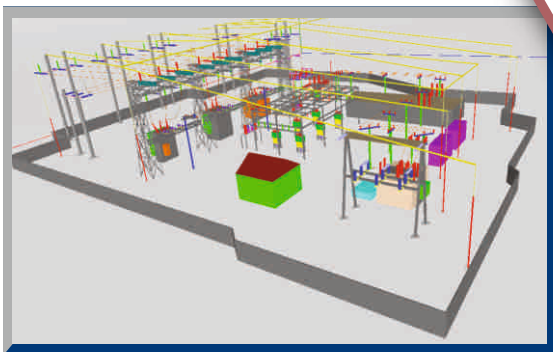


GPR Real time simulation exported to Google Earth Pro

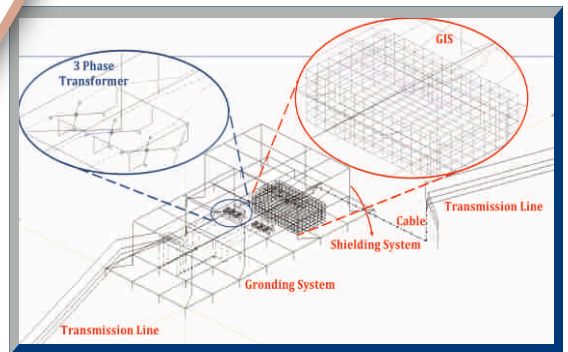


3D Graphics for Step, Touch & GPR

DESIGN SIMULATIONS USING CDEGS



Lightning Protection System for Substation



Design & Power System studies for Substation

Salient Features:-

- Load Flow & Short circuit studies
- Equipment & System Earthing studies
- HVAC & HVDC Substation Earthing studies
- Fault current split calculation
- Bimetallic Conductor current carrying calculation
- Transient Analysis studies for GIS, Transformer energization & switching studies
- Risk Assessment analysis & Designing of Lightning Protection Systems of all structures
- Electromagnetic field analysis of buried & above ground conductors
- Electromagnetic analysis in response to harmonic signals
- Accurate analysis of soil resistivity & soil structure studies
- Determine the degree of corrosion control provided by a system

Application areas :-

Airports, Railways & Metro, AIS, GIS, Oil & Gas, Cement plants, Solar Arrays, Industrial & Commercial Buildings, etc.