## CANDOUR INTERNATIONAL

## EARTHING & LIGHTNING PROTECTION SYSTEM

# ELPS CATALOGUE

WE ARE ONE OF THE LEADING MANUFACTURER & EXPORTER OF ALL TYPES OF EARTHING & LIGHTNING PROTECTION SYSTEM.

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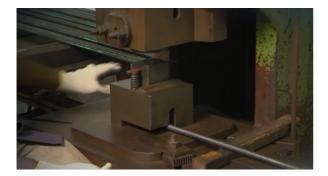
Candour International was incorporated in 2008 in the Capital of India i.e. New Delhi. Since then, Candour has grown to be one of the leading manufacturer of LED Luminaires, Poles & High Mast, Cable Management Accessories & Earthing & Lightning Protection Material. Candour has 4 manufacturing units spread across North & West India with head office in New Delhi, India.

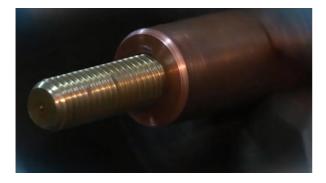
Candour is exclusively an export oriented unit, delivering to more than 40+ countries, we have executed more than 2500+ Project with 1000+ satisfied clients with our products and service.

From the request of quotation to the final execution, we have a team of 70+ professionals assisting and guiding our customers at every step. We comply to all basic International Standards and follow rigorous Quality Control Standards which ensures High Quality, Sustainability of our products. With the latest technology In-house, we aim to serve our clients with the highest standard products that ensures durability and consistency.

## MANUFACTURING FACILITIES

Our Well-Equipped Manufacturing Unit specializes in the production of high-quality materials and components designed to ensure the safety and protection of electrical systems from the damaging effects of lightning strikes and electrical faults. We have all the Essential Machinery & Equipments In-House for the Complete Manufacturing Process for all the Earth Rods, Lightning Arrestors, Clamps, Couplers, Conductors & Other such Accessories.

















## EARTHING PROTECTION

COMPLETE RANGE OF EARTHING MATERIALS USED TO ENSURE THE EFFECTIVE GROUNDING AND PROTECTION OF ELECTRICAL SYSTEMS, EQUIPMENT, AND PERSONNEL FROM ELECTRICAL FAULTS AND LIGHTNING STRIKES.

## **COPPER BONDED EARTH RODS**

250 Microns Copper Bonded Earth Rods made from Low carbon steel which is molecularly bonded with 99.9% pure electrolytic copper.

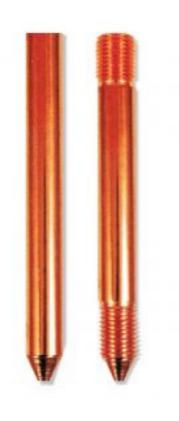
Candour copper bonded earth rods are made from low carbon steel as per IS 2062 standard with high tensile strength material.

Low carbon steel rods are molecularly bonded with 99.9% pure electrolytic copper. Our 250 microns copper bonded earth rods of 14.2 mm dia. & 17.2 mm dia. are compliant as per IEC 62561-2.

#### FEATURES

- Perfectly bonded rod will last longer, drive easier and will not crack.
- Corrosion resistance while providing the lowest resistance to ground.
- Threads are rolled by roll threading process, which ensures that an even copper coating is maintained, even at the root of the thread. Roll thread gives greater strength than cut thread.
- Thread rolling process raises the surface of the rod, so that Thread dia. (T) is greater than Shank dia. (S).

Duaduat Cada		Shank	Ler	ngth	Сорр	er Thk.	<b>T</b> I: 11:	N - 1 //
Product Code		Diameter	ft	mm	mil.	μm	Thds.	Net kg/l
CI-ER-CBR - 183 D		12.7 mm	6	1830	10	250	/	1.8
CI-ER-CBR - 244	*	12.7 mm	8	2440	10	254	/	2.4
CI-ER-CBR - 305 E	*	12.7 mm	10	3050	10	254	/	3
CI-ER-CBR - 244 D	*	12.7 mm	8	2440	10	254	1/2"	2.4
CI-ER-CBR - 305 D	*	12.7 mm	10	3050	10	254	1/2"	3
CI-ER-CBR - 122		14.2 mm	4	1220	10	250	/	1.5
CI-ER-CBR - 153		14.2 mm	5	1530	10	250	/	1.8
CI-ER-CBR - 183		14.2 mm	6	1830	10	250	/	2.2
CI-ER-CBR - 244 A	*	14.2 mm	8	2440	10	254	5/8"	3
CI-ER-CBR - 305	*	14.2 mm	10	3050	10	254	5/8"	3.7
CI-ER-CBR - 122 A		14.2 mm	4	1220	10	250	5/8"	1.5
CI-ER-CBR - 153 A		14.2 mm	5	1530	10	250	5/8"	1.8
CI-ER-CBR - 183 A		14.2 mm	6	1830	10	250	5/8"	2.2
CI-ER-CBR - 244 E	*	14.2 mm	8	2440	10	254	/	3
CI-ER-CBR - 305 A	*	14.2 mm	10	3050	10	254	/	3.7
CI-ER-CBR - 153 B		17.2 mm	5	1530	10	250	/	2.7
CI-ER-CBR - 183 B		17.2 mm	6	1830	10	250	/	3.3
CI-ER-CBR - 244 B	*	17.2 mm	8	2440	10	254	/	4.4
CI-ER-CBR - 305 B	*	17.2 mm	10	3050	10	254	/	5.5
CI-ER-CBR - 153 C		17.2 mm	5	1530	10	250	3/4"	2.7
CI-ER-CBR - 183 C		17.2 mm	6	1830	10	250	3/4"	3.3
CI-ER-CBR - 244 C	*	17.2 mm	8	2440	10	254	3/4"	4.4



**RoHS** 

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.



INTERNALLY THREADED

Candour 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.

DIMENSION	ROD DIA.	Length	PROD. CODE
16x 1200 or 4'	15 mm	1200 mm or 4'	CI-ER-SC 512
16x1500 or 5'	15 mm	1500 mm or 5'	CI-ER-SC 515
20x 1200 or 6'	20 mm	1200 mm or 4'	CI-ER-SC 520
16x1500 or 5'	20 mm	1500 mm or 5'	CI-ER-SC 521
16x2540 or 10'	20 mm	2540 mm or 10'	CI-ER-SC 1021

#### Driving $\longrightarrow$ Head Rod $\longrightarrow$ Driving Head Dowel Driving $\longrightarrow$ Tip Driving $\longrightarrow$ Driving To

RoHS compliant

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#### SOLID COPPER EARTH RODS EXTERNALLY THREADED

Our solid copper earth rods are made from 99.9% pure electrolytic copper.

Solid copper rods offers greater resistance to corrosion.

— Thread Size 'T' They are ideally used in applications where soil conditions are very aggressive, for eg. soil with high salt content.

Thread Size 'T' in mm	Length in mm	Product Code
14	1200	CI-ER-SCET - 1412
14	1500	CI-ER-SCET - 1415
5/8"	1200	CI-ER-SCET- 112
5/8"	1500	CI-ER-SCET- 115
3/4"	1200	CI-ER-SCET- 212
3/4"	1500	CI-ER-SCET- 215

\* These are UL listed Grounding / Earthing Rods as per UL 467 Standard.





Mechanically claded copper coated grounding rod is made when electrolytic grade 99.9% copper tube with wall thickness of 0. 25(250 microns) is claded to allow carbon steel rod.

ROD SIZE "S"	LENGTH MM	PRODUCT CODE
12	1200 (4 ft) 1800 (6 ft) 2400 (8 ft)	CI-ER-CR 1412 CI-ER-CR 1418 CI-ER-CR 1424
14	1200 (4 ft) 1800 (6 ft) 2400 (8 ft)	CI-ER-CR 112 CI-ER-CR 118 CI-ER-CR 124
16	1200 (4 ft) 1800 (6 ft) 2400 (8 ft) 3000 (10 ft)	CI-ER-CR 312 CI-ER-CR 318 CI-ER-CR 324 CI-ER-CR 330
19	1200 (4 ft) 1800 (6 ft) 2400 (8 ft) 3000 (0 ft)	CI-ER-CR 412 CI-ER-CR 418 CI-ER-CR 424 CI-ER-CR 430

#### STAINLESS STEEL EARTH RODS SS GROUNDING RODS

RoHS compliant

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Candour Stainless Steel Earth 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 are much more anodic than copper.

DIAMETER		LENGTH		WEIGHT UNIT PROD CODE		UL
INCHES	ММ	FEET	М	(KG)	PRODCODE	ΟĽ
5/8"	14.2	5'	1.5	2.05	CI-ER-SS 145	
5/8"	14.2	8'	2.44	3.28	CI-ER-SS 148	*
5/8"	14.2	10'	3.05	4.10	CI-ER-SS 1410	*
3/4"	17.2	5'	1.5	2.75	CI-ER-SS 175	
3/4"	17.2	10'	3.05	5.50	CI-ER-SS 1710	*
1.0"	23.1	10'	3.05	10.23	CI-ER-SS 2410	*

\* These are UL listed Grounding / Earthing Rods as per UL 467 Standard.



FOR SOLID COPPER EARTH RODS

Solid Copper Earth Rod – Accessories include Driving Head, Coupling Dowel, Driving Tip

SIZE	ITEM	PROD. CODE
15 mm	Driving Head	CI-ERA-DH 15
20 mm	Driving Head	CI-ERA-DH 20
15 mm	Coupling Dowel	CI-ERA-CD 15
20 mm	Coupling Dowel	CI-ERA-CD 20
15 mm	Driving Tip	CI-ERA-DT 15
20 mm	Driving Tip	CI-ERA-DT 20





RoHS compliant



Driving Head **Coupling Dowel**  **Driving Tip** 



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

SIZE MM	PROD. CODE			
SIZE MM	BRASS	AL. BRONZE	GUNMETAL	
14	CI-ERA-EC 14	CI-ERA-EC 15	CI-ERA-EC 15G	
16 or 5/8"	CI-ERA-EC 16	CI-ERA-EC 17	CI-ERA-EC 17G	
19 or 3/4"	CI-ERA-EC 19	CI-ERA-EC 20	CI-ERA-EC 20G	





## **GROUNDING ROD CLAMPS**

FOR DIRECT BURIAL WITH SS SCREW



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



#### **DRIVING STUD** EXTERNALLY THREADED



Thread Size 'T' in mm	Length in mm	Product Code
14	1200	CI-ER-SCET - 1412
14	1500	CI-ER-SCET - 1415
5/8"	1200	CI-ER-SCET- 112
5/8"	1500	CI-ER-SCET- 115
3/4"	1200	CI-ER-SCET- 212
3/4"	1500	CI-ER-SCET- 215

\* These are UL listed Grounding / Earthing Rods as per UL 467 Standard.



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CLAMPS A TYPE



Suitable for Rod dia. 12 mm Material : Brass with MS fastener

Size mm		Prod. Code			
5120 mm	Brass	Al. Bronze	Gunmetal		
14	CI-ERA-EC 14	CI-ERA-EC 15	CI-ERA-EC 15G		
16 or 5/8"	CI-ERA-EC 16	CI-ERA-EC 17	CI-ERA-EC 17G		
19 or 3/4"	CI-ERA-EC 19	CI-ERA-EC 20	CI-ERA-EC 20G		



#### ROD TO TAPE CLAMPS B TYPE



Rod Size	Tape Size	Product Code
5/8"	26 x 12	CI-ERA-BC - 1
5/8"	40 x 12	CI-ERA-BC - 2
5/8"	51 x 12	CI-ERA-BC - 3

ROD TO CABLE CLAMPS C TYPE

Rod Size	Cable Size	Product Code
3/8" or 9.5mm	35mm2	CI-ERA-CC - 1
5/8' or 16mm	50mm2	CI-ERA-CC - 2
5/8" or 16mm	70mm2	CI-ERA-CC - 3
3/4" or 20mm	95mm2	CI-ERA-CC - 4





RoHS (U) (O) C E

These are used for connecting Rods to Cables. Available with different Rod & Cable size.

Material : Gunmetal Plates with 'U' Bolt

NOMINAL RO	NOMINAL ROD DIAMETER		PRODUCT CODE
5/8"	16 mm	16 - 95	CI-ERA-URC - 1
3/4"	20 mm	16 - 70	CI-ERA-URC - 2
5/8"	16 mm	70 - 185	CI-ERA-URC - 3
3/4"	20 mm	70 - 150	CI-ERA-URC - 4
5/8"	16 mm	150 - 300	CI-ERA-URC - 5
3/4"	20 mm	150 - 300	CI-ERA-URC - 6



## 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	CI-ERA-UDP 216
25		CI-ERA-UDP 225
31		CI-ERA-UDP 231
38		CI-ERA-UDP 238
50		CI-ERA-UDP 250





These are made from Copper with Gunmetal plate. They can be supplied for all rods from 5/8" to 1" and Copper Tape

NOM. ROD	HOLE CENTRES	PRODUCT CODE
5/8"	37 mm	CI-ERA-UU - 16
3/4"	37 mm	CI-ERA-UU - 20
ייך	37 mm	CI-ERA-UU - 25



RoHS compliant

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## **COMB CLAMPS**







Max Cond.	Product Code	
6 - 8	CI-ERA-CP - 1	1 bolt brass comb clamp for round conductors with
9 - 12	CI-ERA-CP - 2	galvanised steel screws in accordance with IEC Standards
Max Cond.	Product Code	
<b>Max Cond.</b> 6 - 8	Product Code CI-ERA-CP - 3	2 bolt brass comb clamp for round conductors with galvanised steel screws in



## **POLYMER EARTH PIT CHAMBER**

SQUARE

Our 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.

PRODUCT	PRODUCT		SIDE DIMS. IN	NET	LOAD BEARING	
DESCRIPTI ON	CODE	LENGTH	WIDTH	HEIGHT	KGS/PC.	CAPACITY IN TONS
POLYMER	CI-EP	308.00	308.00	214.00	2.50	5.00
BASE WITH	CI-EP-S	245.00	245.00	195.00	1.00	3.00
POLYMER	CI-EP-A	500.00	500.00	200.00	4.00	3.00
COVER	CI-EP-B	500.00	500.00	315.00	5.00	3.00
POLYMER BASE WITH METAL COVER	CI-EP-M	308.00	308.00	214.00	5.00	5.00

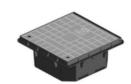












#### POLYMER EARTH PIT CHAMBER ROUND

PRODUCT	PRODUCT	OUTSI	OUTSIDE DIMS. IN MM		NET	LOAD BEARING
DESCRIPTION	CODE	LENGTH	WIDTH	HEIGHT	KGS/PC.	CAPACITY IN TONS
POLYMER BASE WITH POLYMER	CI-EPR	154.00	213.00	230.00	0.75	5.00
COVER	CI-EPR-A	260.00	355.00	260.00	2.00	5.00





## **CONCRETE EARTH PIT CHAMBER**

SQUARE

Candour 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 lightweight 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.

		OUTS	IDE DIMS. I		LOAD	
PRODUCT DESCRIPTION	PRODUCT CODE	LENGTH	WIDTH	HEIGHT	NET KGS/PC.	BEARING CAPACITY IN TONS
	CI-CEP	310.00	310.00	170.00	25.00	5.00
CONCRETE BASE	CI-CEP-A	320.00	320.00	195.00	30.00	5.00
WITH CONCRETE	CI-CEP-B	500.00	500.00	400.00	120.00	5.00
COVER	CI-CEP-C	510.00	510.00	400.00	130.00	5.00
	CI-CEP-D	500.00	500.00	250.00	100.00	5.00
CONCRETE BASE WITH METAL COVER	CI-CEP-M	310.00	310.00	170.00	25.00	5.00













## CONCRETE EARTH PIT CHAMBER



PRODUCT			OUTSIDE DIMS. IN MM			LOAD BEARING
DESCRIPTION	CODE	LENCTH	WIDTH	HEIGHT	NET KGS/PC.	CAPACITY IN TONS
POLYMER BASE WITH POLYMER	CI-EPR	154.00	213.00	230.00	0.75	5.00
COVER	CI-EPR-A	260.00	355.00	260.00	2.00	5.00





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.

No. of Terminations	Lmm	W mm	Product Code
6	400		CI-ERA-DL 14
8	500		CI-ERA-DL 15
10	600		CI-ERA-DL 16
12	750		CI-ERA-DL 17
14	850		CI-ERA-DL 18
16	950		CI-ERA-DL 19
18	1050	90	CI-ERA-DL 20
20	1150		CI-ERA-DL 21
22	1250		CI-ERA-DL 22
24	1400		CI-ERA-DL 23
26	1500		CI-ERA-DL 24
28	1600		CI-ERA-DL 25
30	1700		CI-ERA-DL 26



Description	Lmm	W mm	Product Code
Disconnecting Link	125	90	CI-ERA-DL - 11





#### **EARTH BARS**

#### WITH SINGLE DISCONNECTING LINK

No. of Terminations	L mm	Wmm	Product Code
6	475		CI-ERA-DL 12
8	575		CI-ERA-DL 27
10	675		CI-ERA-DL 28
12	825		CI-ERA-DL 29
14	925		CI-ERA-DL 30
16	1025		CI-ERA-DL 31
18	1125	90	CI-ERA-DL 32
20	1225		CI-ERA-DL 33
22	1325		CI-ERA-DL 34
24	1475		CI-ERA-DL 35
26	1575	•	CI-ERA-DL 36
28	1675		CI-ERA-DL 37
30	1775		CI-ERA-DL 38

#### **EARTH BARS**

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RoHS compliant

#### WITH DOUBLE DISCONNECTING LINKS

No. of Terminations	L mm	W mm	Product Code
6	550		CI-ERA-DL 13
8	650		CI-ERA-DL 39
10	750		CI-ERA-DL 40
12	900		CI-ERA-DL 41
14	1000		CI-ERA-DL 42
16	1100		CI-ERA-DL 43
18	1200	90	CI-ERA-DL 44
20	1300		CI-ERA-DL 45
22	1400		CI-ERA-DL 46
24	1550		CI-ERA-DL 47
26	1650		CI-ERA-DL 48
28	1750		CI-ERA-DL 49
30	1850		CI-ERA-DL 50







Candour offers a vast range of Ground Enhancing Chemical Compounds. 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				
P			EARTHCON	TERRAPRO	TERRAHEX	TERRANITE
	CARBON	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	X
	BENTONITE	X	$\checkmark$	X	$\checkmark$	$\checkmark$
	DISPERSION	$\checkmark$	$\checkmark$	$\checkmark$	X	$\checkmark$
CHEMICAL	DIFFUSSION	$\checkmark$	$\checkmark$	$\checkmark$	×	$\checkmark$
COMPOSITION	IONISATION	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	EXPANSION	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	HYGROSCOPIC	$\checkmark$	$\checkmark$	X	$\checkmark$	$\checkmark$
	OTHER PATENTED	$\checkmark$	$\checkmark$	X	×	×
OTHER DETAILS	BAG PACKING (KGS)	5.00	12.50	25.00	25.00	25.00
	pH VALUE	7 TO 8	7.5 TO 8.5	9 TO 10	7.5 TO 8.5	8.5 TO 9.5
	SELF RESISTIVITY (OHM- MTR)	0.2	0.098	0.18	0.8	0.91
	APPROX. REDUCTION IN SOIL RESISTIVITY / BAG / METER (%)	75	65	60	55	50
	TYPE OF SOIL SUITABLE FOR	ALL	MOST	MOST	MOST	NORMAL





Used to connect the pipes to conductor for earthing Used for Steel and Copper pipe range between diameter 17 – 115 mm

SPECIFICATION	PRODUCT CODE	SIZE	
	CI-ERA-BEC - 031	3/8" - 11/2"	
All parts are of Stainless	CI-LRA-BLC - USI	17 - 50 mm	
Steel	CI-ERA-BEC - 032	3/4" - 4"	
	CI-LRA-BEC - 032	27 - 115 mm	



## **EARTHING CLAMPS**

High quality earthing clamps specially designed 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 2.5 mm2 – 10 mm2 and A-E for conductors of 2.5 mm2 - 16 mm2 (A-E being identified by its Blue safety label)

TERMINAL SIZE	FEATURES	MATERIAL SPEC.	PRODUCT CODE
A-D 2.5 mm2- 10 mm2	Colour coded Red suitable for clean dry atmospheric conditions	Brass	CI-ERA-ET 14
A-D 2.5 mm2- 10 mm2	Colour coded Blue suitable for all environment	Phosphorus Bronze	CI-ERA-ET 15
A-D 2.5 mm2- 10 mm2	Colour coded Blue suitable for all environment	Phosphorus Bronze	CI-ERA-ET 16



## EARTHING STRAP / COMB 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	ТҮРЕ	PRODUCT CODE
56	Single Pin	CI-ERA-IB - SP56
56	Single Fork	CI-ERA-IB - SF56
28	Double Pin	CI-ERA-IB - DP28
28	Double Fork	CI-ERA-IB - DF28
19	Triple Pin	CI-ERA-IB - TP19
19	Triple Fork	CI-ERA-IB - TF19
14	Four Pin	CI-ERA-IB - FP14
14	Four Fork	CI-ERA-IB - FF14



## EARTH BLOCKS

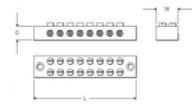
Candour Earth Blocks are used for Termination of earth Conductors or live conductors.

Material : Brass Finish : Nickel Plated

Tin Plated available on request

ТҮРЕ	L MM	W MM	D MM	PRODUCT CODE
4 -Way Single	54	18	12	CI-ERA-EBB 004/1
4 -Way Double	51	19	12	CI-ERA-EBB 004
8 -Way Double	88	19	12	CI-ERA-EBB 008









Fits 8 STR to 4/0 STR AWG

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

SIZE	PRODUCT CODE
1/2" to 1'	CI-ERA-GC - 625
1/2" to 1'	CI-ERA-GC - 626



SIZE	PRODUCT CODE	
1/2" to 1'	CI-ERA-GC - 626 A	
1/2"	CI-ERA-GC - 626 BS	
1 1/4" to 2"	CI-ERA-GC - 626 B	
2 1/2" to 4"	CI-ERA-GC - 626 C	
FOR DIRECT BU	JRIAL - BRONZE	
1/2" to 1"	CI-ERA-GC - 620 DB	



#### GROUND CLAMPS ZINC DIE CAST



#### Fits 10, 8, 6, 4, & 2 AWG.

SIZE	PRODUCT CODE
1/2" to 1'	CI-ERA-GC - 626 Z



## **BRONZE GROUND CLAMPS**

FOR DIRECT BURIAL WITH SS SCREWS

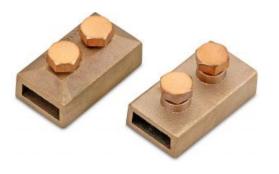
#### RoHS compliant CE

#### Fits 8, 6 or 4 Bare Armored Ground wire

SIZE	PRODUCT CODE			
1/2" to 1'	CI-ERA-GC - 630 B			
1 1/4" to 2"	CI-ERA-GC - 630			
FOR DIRECT BURIAL - BRONZE				
1/2" to 2"	CI-ERA-GC - 630 DB			



#### **OBLONG TEST CLAMP** ZINC DIE CAST



Material : Brass / Gunmetal These are used with Bare Copper Tape Conductor

CONDUCTOR SIZE (MM)	PRODUCT CODE
25 x 3	CI-LT-OT - 253
40 x 6	CI-LT-OT - 406
50 x 6	CI-LT-OT - 506

## **BI-METALLIC CONNECTOR**

#### Material: 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	CI-LT-BI - 8
8 mm Dia. Al to 25 x 3 Cu Tape HBI -	CI-LT-BI - 825
20 x 3 Al Tape to 20 x 3 Cu Tape	CI-LT-BI - 203
25 x 3 Al Tape to 25 x 3 Cu Tape	CI-LT-BI - 253









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

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

NO. OF HOLES	HOLES DIA. MM	L MM	W MM	ТММ	PRODUCT CODE
5	12	290	30	6	CI-ERA-EBC 05
7	12	290 30 6		CI-ERA-EBC 07	



## EARTH ROD SEALS

Candour 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, these seal kits are highly suitable for use in areas where the water

table is very high & when earth pits have to be installed during construction through concrete foundations/basements. The single or double flanges serve to reduce the water pressure exerted on the Earth Pit Chamber.

In concrete foundation/basement earthing the bottom flange is fitted on the damp proof membrane. The copper bonded earth rod is passed through a PVC pipe which is fitted in between the top & bottom 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.

Candour Earth Rod Seal Kits have been tested successfully for compliance as per the IEC 62561-5 standard.

P.S.: Please specify Earth Rod diameter to be used with.

21

Product Code : CI-ERA-ESS (Single Flange) (Weight : 2kgs) CI-ERA-ESD (Double Flange) (Weight : 3kgs)



## LIGHTNING PROTECTION

OUR EXTENSIVE RANGE OF LIGHTNING PROTECTION MATERIAL TO SAFEGUARD YOUR BUILDINGS & APPLIANCES FROM LIGHTING STRIKES & ELECTRICAL SURGES.



#### Material : Electrolytic Copper

Air Rod can be installed with or without Multiple Point.

Rod Diameter	Thread Diameter	Length of Rod	Product Code	Rod Diameter	Thread Diameter	Length of Rod
15	5/8"	500	CI-LT-AE - 15	15	5/8"	500
15	5/8"	1000	CI-LT-AE - 40	15	5/8"	1000
15	5/8"	2000	CI-LT-AE - 120	15	5/8"	2000



## MULTIPOINT

Material : Copper / Copper Alloy Multiple Point is used with Elevation rod.

Rod Diameter	Product Code
16 - 5/8"	CI-LT-MP - 16
20 - 3/4"	CI-LT-MP - 20

#### **TERMINAL BASE**

**Thread Size** 

M16 or 5/8"

M20 or 3/4"

Material: Brass (Copper Plated) Used for fixing Aerial Rod and Down Conductor. Four fixing holes are provided on it.

9-0	3
 8	8



**Product Code** 

CI-LT-HTB - LP - 16

CI-LT-TB - LP - 20

## **SATELIT 3**

The Early Streamer Emission Lightning Conductor Including Teletesting supervision This third generation of the Duval Messien "Satelit" range uses this technology to force the lighting 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 TELETESTER-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.
- CITEL France.
- CPRI India.
- TUV Rheinland India.

Weight : 2.4 kg



**RoHS** 









#### TARAN / SATELIT 3 RADIUS OF PROTECTION





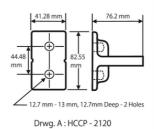
LA MODEL			т	IP HEIGHT OF I	ESEAT (IN MET	TERS)			LA MODEL
	2	4	5	7	10	15	20	30	
LEVEL 1 RADIUS OF PROTECTION (IN METERS)									
SATELIT 3 - 25	17	34	42	43	44	45	45	45	-
SATELIT 3 - 45	25	51	63	64	64	65	65	65	-
SATELIT 3 - 60	32	64	79	79	79	80	80	80	TARAN-60
			LEVEL 2	2 RADIUS OF P	ROTECTION (I	N 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	S RADIUS OF P	ROTECTION (I	N 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





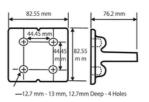
#### **CAST GROUND PLATE**

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
А	120	2 Hole	CI-LT-CCP - 2120
В	120	4 Hole	CI-LT-CCP - 4120
В	240	4 Hole	CI-LT-CCP - 4240
С	240	4 Hole	CI-LT-CCPL - 4240



rg. B : HCCP - 4120 / HCCP - 4240





LIGHT DUTY SADDLE

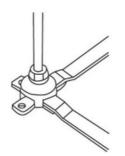
#### Mtl: Brass / Gunmetal

Used for supporting lightning conductor Air Terminals.

THREAD DIA. MM	MAX COND. WIDTH MM	PRODUCT CODE
10	25	CI-LT-LD - 1025
16	25	CI-LT-LD - 1625
20	25	CI-LT-LD - 2025

Also available for Aluminium conductor, please specify your requirement.









#### FLAT SADDLE - A



#### Material : Brass / Gunmetal

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

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

ROD LENGTH	ROD DIA.	THREAD DIA.	PRODUCT CODE
50 mm	15 mm	5/8"	CI-LT-SD - 155
70 mm	15 mm	5/8"	CI-LT-SD - 160
95 mm	15 mm	5/8"	CI-LT-SD - 165

\* For Gunmetal add 'G' after product code.



#### **FLAT SADDLE**



Material : Brass / Gunmetal

Used for supporting lightning conductor Air Terminals.

THREAD DIA. MM	MAX COND. WIDTH MM	PRODUCT CODE
10	25	CI-LT-FLD - 1025
16	25	CI-LT-FLD - 1625
20	25	CI-LT-FLD - 2025

## **TAPE CLIP**

Material : Brass / Gunmetal These are used with Bare Copper Tape.

CONDUCTOR SIZE (MM)	PRODUCT CODE
20 x 3	CI-LT-TC - 203
25 x 3	CI-LT-TC - 253
50 x 6	CI-LT-TC - 506







## DC TAPE CLIP



#### Material : Brass / Gunmetal

These are used with Bare Copper Tape Conductor.

CONDUCTOR SIZE (MM)	PRODUCT CODE
25 x 3	CI-LT-DTC - 253
25 x 6	CI-LT-DTC - 256
40 x 6	CI-LT-DTC - 406
50 x 6	CI-LT-DTC - 506



\*Also available for Aluminium conductor on request

## **SQUARE TAPE CLIP**

Material: Brass / Gunmetal

These are suitable for Four Way Connections of Copper Tape.



CONDUCTOR SIZE (MM)	PRODUCT CODE
25 x 3	CI-LT-STC - 253
25 x 4	CI-LT-STC - 254
25 x 6	CI-LT-STC - 256
50 x 6	CI-LT-STC - 506

#### **GLAZING BAR HOLDFAST**

Material : 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	CI-LT-GBH - 12C
12	Aluminum Tape	CI-LT-GBH - 12A







## CABLE TO TAPE JUNCTION CLAMP



#### Material : Brass / Gunmetal

These are used for connecting Copper Tape to Cable

TAPE SIZE MM	CABLE SIZE MM2	PRODUCT CODE
25 x 3	50	CI-LT-CTJ - 253

\* For Gunmetal add 'G' after product code.





#### HEAVY DUTY CAST CABLE SADDLE

Material : 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	CI-LT-DCC - 8	
10	CI-LT-DCC - 10	

\* For Gunmetal add 'G' after product code.

## **MULTI-PURPOSE AIR ROD SADDLE**

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	CI-LT-UAG - 253
Aluminium Air Rods	CI-LT-UAA - 253







## **ALUMINIUM EARTH PLATE**

High quality earth plate made of aluminium plate. The plate is 1mm thick with

PRODUCT CODE

CI-LT-AEA 010

SIZE MM

100 x 100 x 100 Max. 3 mm

SQUARE PLATE WITH ALUMINIUM PIPE

#### LEAD EARTH PLATE SQUARE PLATE WITH LEAD PIPE

SPECIFICATION	SIZE MM	PRODUCT CODE
Lead Earth Assembly	100 x 100 x30 Thick – 1 to 5	CI-LT-LEA 010

#### **EARTH CLAMP HOLDER ROUND TYPE - PLASTIC**

Round type earth clamp with six nylon clamps for multiple connections.

1/2" TO 1'	HCC - 625	PRODUCT CODE
1/2" to 1'	HGC - 626	CI-LT-NSC 028













Material: Aluminium

SPECIFICATION

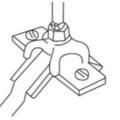
Aluminum Earth

Assembly

100mm long Aluminum pipe.

#### **RIDGE SADDLE**

PROD. CODE : CI-LT-RDS – 1 MATERIAL : Gunmetal / Brass Used for supporting Lightning Conductor Air Terminals on Ridges.





RoHS compliant

## **EARTH LINKS**



- Product Code : CI-ERA-CEL 01
- Finish: Copper/Tinned

## **ROD TO TAPE COUPLING**

#### Material : 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	CI-ERA-RT - 16C
15	16	Aluminium	CI-ERA-RT - 16A









#### **BARE COPPER TAPE**

Our range of Bare Copper Tapes is widely applicable for switch terminals, electrical conductors, etc.

Available in different sizes as per the client's requirement.

High conductivity Cu tapes to BS – 1432 – C101 / C103

CONDUCTOR (A X B) MM	PRODUCT CODE
20 x 1.5	CI-ERA-CT 2015
25 x 1.5	CI-ERA-CT 2515
25 x 3	CI-ERA-CT 253
25 x 4	CI-ERA-CT 254
25 x 6	CI-ERA-CT 256
40 x 6	CI-ERA-CT 406
50 x 3	CI-ERA-CT 503
50 x 6	CI-ERA-CT 506



#### **FLEXIBLE COPPER BRAIDS**

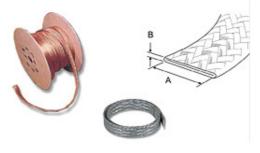
Flexible Copper Braids are suitable for Earth Bonding. Can be supplied as Standard Drilled & Pre-Cut Bonds.

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.

OVERALL NOMINAL EQUIVALENT SIZE MM (A X B)	SIZE MM2	PRODUCT CODE
Bare Brain 15 x 1.4	8.75	CI-ERA-BB 151
Bare Brain 25 x 3.5	34.7	CI-ERA-BB 253
Tinned Brain 25 x 3.5	34.7	CI-ERA-BB 253







#### **CANDOUR INTERNATIONAL**

- Invento, 2nd Floor,
  Permanand Colony, Sector-12B
  Dwarka, New Delhi-110078, India.
- (e) +91 993 044 1885
- Info@candourinternational.in
- www.candourinternational.in

