

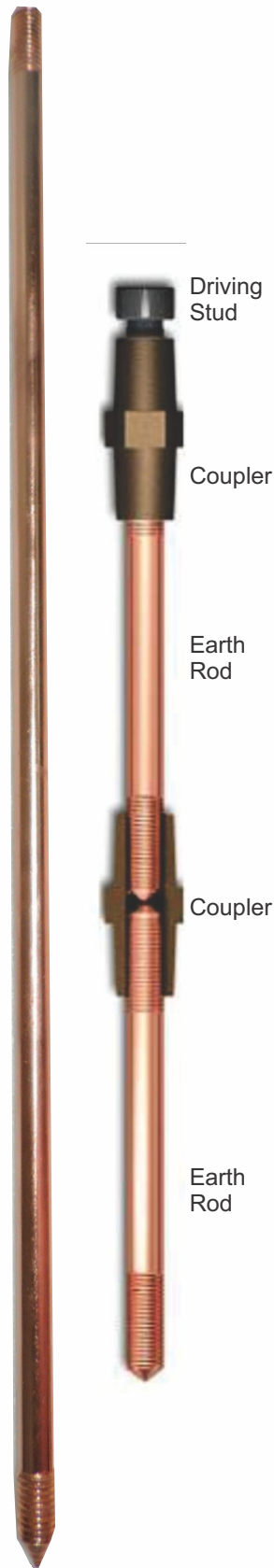
COPPER BONDED EARTH ROD THREADED (254 MICRONS)

Terowell Copper-bonded earth rods offers our client the most cost-effective means of achieving a low-resistance path to zero (earth-ground).

Each rod has a high tensile strength, low-carbon steel core onto which a 99.95% pure electrolytic copper layer is molecularly bonded with a 0.254mm (254microns) typical thickness.

The final product is ideal for extension and deep driving by Power or even Manual Hand hammers. These copper bonded rods provide excellent corrosion resistance and earth path.

Each copper bonded rod features male threads top and bottom and the steel inner core is pointed at one end, allowing the client to make a choice of opting for a Driving Spike or not.



Threaded Type

TEROWELL COPPER BONDED HIGH TENSILE STEEL & LOW CARBON STEEL THREADED ROD COPPER BONDING 254 MICRONS

	Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
Earth Rod	0 100 091	9.5	3/8	9	1200	0.62
	0 100 092	9.5	3/8	9	1500	0.84
	0 100 121	12.7	1/2	12	1200	1.21
	0 100 122	12.7	1/2	12	1500	1.51
	0 100 123	12.7	1/2	12	1800	1.81
	0 100 124	12.7	1/2	12	2400	2.40
	0 100 161	16	5/8	14.2	1200	1.51
	0 100 162	16	5/8	14.2	1500	1.88
	0 100 163	16	5/8	14.2	1800	2.27
	0 100 164	16	5/8	14.2	2400	3.01
	0 100 165	16	5/8	14.2	3000	3.77
Earth Rod	0 100 201	20	3/4	17.2	1200	2.20
	0 100 202	20	3/4	17.2	1500	2.75
	0 100 203	20	3/4	17.2	1800	3.30
	0 100 204	20	3/4	17.2	2400	4.40
	0 100 205	20	3/4	17.2	3000	5.50
	0 100 251	25	1	23.1	1200	3.96
	0 100 252	25	1	23.1	1500	4.95
	0 100 253	25	1	23.1	1800	5.95
	0 100 254	25	1	23.1	2400	7.97
	0 100 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

COPPER BONDED EARTH ROD UNTHREADED (254 MICRONS)

Un-Threaded Type

**TEROWELL COPPER BONDED HIGH TENSILE STEEL &
LOW CARBON STEEL UNTHREADED ROD
COPPER BONDING 254 MICRONS**



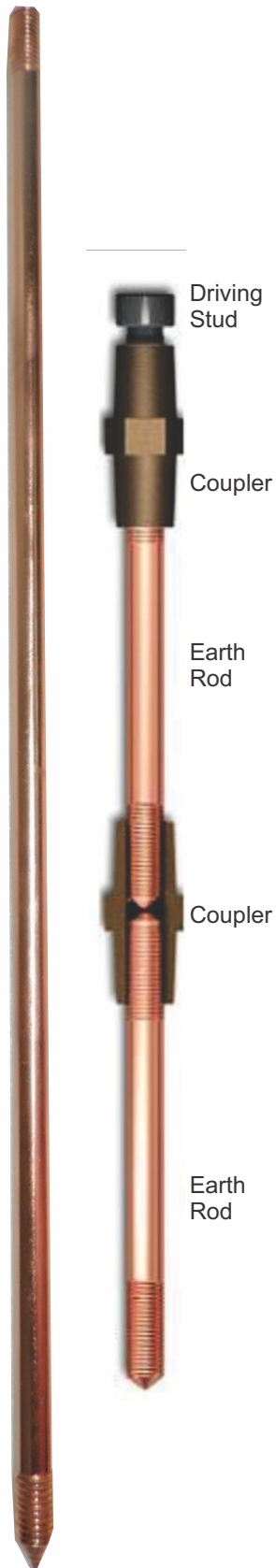
Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
0 101 091	9.5	3/8	9	1200	0.62
0 101 092	9.5	3/8	9	1500	0.84
0 101 121	12.7	1/2	12	1200	1.21
0 101 122	12.7	1/2	12	1500	1.51
0 101 123	12.7	1/2	12	1800	1.81
0 101 124	12.7	1/2	12	2400	2.40
0 101 161	16	5/8	14.2	1200	1.51
0 101 162	16	5/8	14.2	1500	1.88
0 101 163	16	5/8	14.2	1800	2.27
0 101 164	16	5/8	14.2	2400	3.01
0 101 165	16	5/8	14.2	3000	3.77
0 101 201	20	3/4	17.2	1200	2.20
0 101 202	20	3/4	17.2	1500	2.75
0 101 203	20	3/4	17.2	1800	3.30
0 101 204	20	3/4	17.2	2400	4.40
0 101 205	20	3/4	17.2	3000	5.50
0 101 251	25	1	23.1	1200	3.96
0 101 252	25	1	23.1	1500	4.95
0 101 253	25	1	23.1	1800	5.95
0 101 254	25	1	23.1	2400	7.97
0 101 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

COPPER BONDED EARTH ROD THREADED 375 MICRONS

Threaded Type

**TEROWELL COPPER BONDED HIGH TENSILE STEEL & LOW CARBON STEEL THREADED ROD
COPPER BONDING 375 MICRONS**



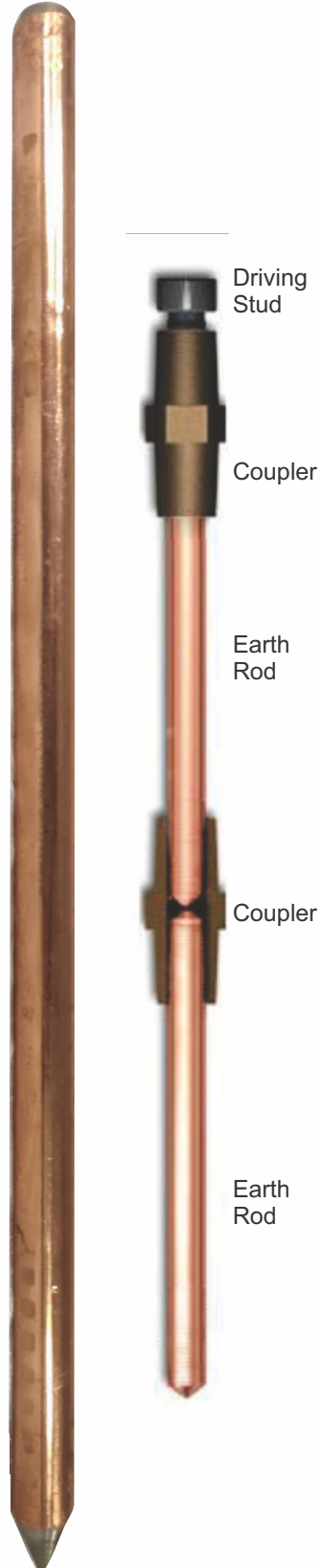
Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
0 110 091	9.5	3/8	9	1200	0.62
0 110 092	9.5	3/8	9	1500	0.84
0 110 121	12.7	1/2	12	1200	1.21
0 110 122	12.7	1/2	12	1500	1.51
0 110 123	12.7	1/2	12	1800	1.81
0 110 124	12.7	1/2	12	2400	2.40
0 110 161	16	5/8	14.2	1200	1.51
0 110 162	16	5/8	14.2	1500	1.88
0 110 163	16	5/8	14.2	1800	2.27
0 110 164	16	5/8	14.2	2400	3.01
0 110 165	16	5/8	14.2	3000	3.77
0 110 201	20	3/4	17.2	1200	2.20
0 110 202	20	3/4	17.2	1500	2.75
0 110 203	20	3/4	17.2	1800	3.30
0 110 204	20	3/4	17.2	2400	4.40
0 110 205	20	3/4	17.2	3000	5.50
0 110 251	25	1	23.1	1200	3.96
0 110 252	25	1	23.1	1500	4.95
0 110 253	25	1	23.1	1800	5.95
0 110 254	25	1	23.1	2400	7.97
0 110 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

COPPER BONDED EARTH ROD UNTHREADED 375 MICRONS

Un-Threaded Type

TEROWELL COPPER BONDED HIGH TENSILE STEEL & LOW CARBON STEEL UNTHREADED ROD
COPPER BONDING 375 MICRONS



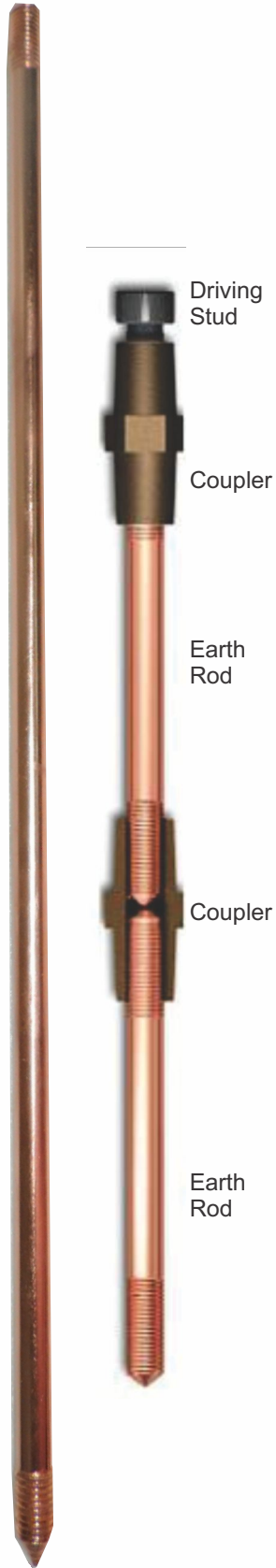
Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
0 111 091	9.5	3/8	9	1200	0.62
0 111 092	9.5	3/8	9	1500	0.84
0 111 121	12.7	1/2	12	1200	1.21
0 111 122	12.7	1/2	12	1500	1.51
0 111 123	12.7	1/2	12	1800	1.81
0 111 124	12.7	1/2	12	2400	2.40
0 111 161	16	5/8	14.2	1200	1.51
0 111 162	16	5/8	14.2	1500	1.88
0 111 163	16	5/8	14.2	1800	2.27
0 111 164	16	5/8	14.2	2400	3.01
0 111 165	16	5/8	14.2	3000	3.77
0 111 201	20	3/4	17.2	1200	2.20
0 111 202	20	3/4	17.2	1500	2.75
0 111 203	20	3/4	17.2	1800	3.30
0 111 204	20	3/4	17.2	2400	4.40
0 111 205	20	3/4	17.2	3000	5.50
0 111 251	25	1	23.1	1200	3.96
0 111 252	25	1	23.1	1500	4.95
0 111 253	25	1	23.1	1800	5.95
0 111 254	25	1	23.1	2400	7.97
0 111 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

COPPER BONDED EARTH ROD THREADED 508 MICRONS

Threaded Type

**TEROWELL COPPER BONDED HIGH TENSILE STEEL & LOW CARBON STEEL THREADED ROD
COPPER BONDING 508 MICRONS**



Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
0 120 091	9.5	3/8	9	1200	0.62
0 120 092	9.5	3/8	9	1500	0.84
0 120 121	12.7	1/2	12	1200	1.21
0 120 122	12.7	1/2	12	1500	1.51
0 120 123	12.7	1/2	12	1800	1.81
0 120 124	12.7	1/2	12	2400	2.40
0 120 161	16	5/8	14.2	1200	1.51
0 120 162	16	5/8	14.2	1500	1.88
0 120 163	16	5/8	14.2	1800	2.27
0 120 164	16	5/8	14.2	2400	3.01
0 120 165	16	5/8	14.2	3000	3.77
0 120 201	20	3/4	17.2	1200	2.20
0 120 202	20	3/4	17.2	1500	2.75
0 120 203	20	3/4	17.2	1800	3.30
0 120 204	20	3/4	17.2	2400	4.40
0 120 205	20	3/4	17.2	3000	5.50
0 120 251	25	1	23.1	1200	3.96
0 120 252	25	1	23.1	1500	4.95
0 120 253	25	1	23.1	1800	5.95
0 120 254	25	1	23.1	2400	7.97
0 120 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

COPPER BONDED EARTH ROD UNTHREADED 508 MICRONS

Un-Threaded Type

TEROWELL COPPER BONDED HIGH TENSILE STEEL & LOW CARBON STEEL UNTHREADED ROD
COPPER BONDING 508 MICRONS



Code No.	Nominal Diameter (@) (mm)	Actual Diameter (@) (mm)	Shank Dia	Length (mm)	Weight (kg)
0 121 091	9.5	3/8	9	1200	0.62
0 121 092	9.5	3/8	9	1500	0.84
0 121 121	12.7	1/2	12	1200	1.21
0 121 122	12.7	1/2	12	1500	1.51
0 121 123	12.7	1/2	12	1800	1.81
0 121 124	12.7	1/2	12	2400	2.40
0 121 161	16	5/8	14.2	1200	1.51
0 121 162	16	5/8	14.2	1500	1.88
0 121 163	16	5/8	14.2	1800	2.27
0 121 164	16	5/8	14.2	2400	3.01
0 121 165	16	5/8	14.2	3000	3.77
0 121 201	20	3/4	17.2	1200	2.20
0 121 202	20	3/4	17.2	1500	2.75
0 121 203	20	3/4	17.2	1800	3.30
0 121 204	20	3/4	17.2	2400	4.40
0 121 205	20	3/4	17.2	3000	5.50
0 121 251	25	1	23.1	1200	3.96
0 121 252	25	1	23.1	1500	4.95
0 121 253	25	1	23.1	1800	5.95
0 121 254	25	1	23.1	2400	7.97
0 121 255	25	1	23.1	3000	9.96

Note : Special Size, Diameter, Length, Copper thickness can be requested.

EARTHING EARTH ROD ACCESSORIES

COUPLER THREADED



Terowell Couplers, available in both threaded & unthreaded versions are used to make continuous connections between copper bonded earth rods.

The material used in these couplers is gun metal, whereas clients can opt for bronze or brass as well.

These couplers are available in two shapes, hex and round.

Code No.	Rod Diameter (mm)	Length	Weight (kg)
2 200 091	3/8 : 9	40	0.032
2 200 092	3/8 : 9	70	0.055
2 200 121	1/2 : 12.7	40	0.046
2 200 122	1/2 : 12.7	70	0.082
2 200 161	5/8 : 16	40	0.046
2 200 162	5/8 : 16	70	0.08
2 200 200	3/4 : 20	40	0.075
2 200 202	3/4 : 20	70	0.13
2 200 251	01:25	40	0.111
2 200 252	01:25	70	0.194

MATERIAL: GUNMETAL **FOR BRASS, Use Code : 3 200**
FOR BRONZE, Use Code : 4 200

COUPLER UN-THREADED



Code No.	Rod Diameter (mm)	Length	Weight (kg)
2 201 091	3/8 : 9	40	0.032
2 201 092	3/8 : 9	70	0.055
2 201 121	1/2 : 12.7	40	0.046
2 201 122	1/2 : 12.7	70	0.082
2 201 161	5/8 : 16	40	0.046
2 201 162	5/8 : 16	70	0.08
2 201 200	3/4 : 20	40	0.075
2 201 202	3/4 : 20	70	0.13
2 201 251	01:25	40	0.111
2 201 252	01:25	70	0.194

MATERIAL: GUNMETAL **FOR BRASS, Use Code : 3 201**
FOR BRONZE, Use Code : 4 201

EARTHING EARTH ROD ACCESSORIES

DRIVING HEAD THREADED



As the name suggests, Terowell Driving Heads are used for driving copper bonded earth rods into the ground with the use of hand hammer or power hammer. These head allow deep driving of the rods into the ground without damaging the rods.

The driving heads are made up of high tensile steel and are reuseable.

Terowell Driving Heads are used with the above terowell couplers.

Code No.	Rod Diameter (mm)	Length	Weight (kg)
6 210 091	3/8"	46	0.06
6 210 121	1/2"	50	0.07
6 210 161	5/8"	54	0.08
6 210 201	3/4"	62	0.10
6 210 251	1"	68	0.15

MATERIAL: HIGH TENSILE STEEL

Can be made as per Special Request & Drawings

DRIVING HEAD UNTHREADED



Code No.	Rod Diameter (mm)	Length	Weight (kg)
6 211 091	3/8"	46	0.06
6 211 121	1/2"	50	0.07
6 211 161	5/8"	54	0.08
6 211 201	3/4"	62	0.10
6 211 251	1"	68	0.15

MATERIAL: HIGH TENSILE STEEL

Can be made as per Special Request & Drawings

DRIVING TIP FOR THREADED TYPE



Terowell Driving Tip available for copper bonded rod threaded type help make way for the rod to follow. Available in all sizes as threaded bonded rod. Made up of high tensile steel, even this product protects the rod from damage.

Code No.	Rod Diameter (mm)	Weight (kg)
6 220 091	3/8"	0.018
6 220 121	1/2"	0.025
6 220 161	5/8"	0.03
6 220 201	3/4"	0.07
6 220 251	1"	0.1

MATERIAL: HIGH TENSILE STEEL

Can be made as per Special Request & Drawings

SOLID COPPER EARTH ROD



With very high conductivity Terowell Pure Solid Copper Earth Rod with 99.9% copper purity and above 97% conductivity are driven into the grounds. Unlike the bonded rods these are of pure copper and internally threaded. Use terowell low resistance backfill compound for best results.



Code No.	Internal Thread Size (mm)	Dia	Length (mm)	Weight (kg)
1 130 161	M10	5/8 : 16	1000	1.75
1 130 162	M10	5/8 : 16	1200	2.15
1 130 163	M10	5/8 : 16	1500	2.63
1 130 164	M10	5/8 : 16	1800	3.15
1 130 165	M10	5/8 : 16	2400	4.20
1 130 166	M10	5/8 : 16	3000	5.25
1 130 201	M10	3/4 : 20	1000	2.75
1 130 202	M10	3/4 : 20	1200	3.30
1 130 203	M10	3/4 : 20	1500	4.13
1 130 204	M10	3/4 : 20	1800	4.95
1 130 205	M10	3/4 : 20	2400	6.60
1 130 206	M10	3/4 : 20	3000	8.25
1 130 251	M10	01:25	1000	4.16
1 130 252	M10	01:25	1200	4.99
1 130 253	M10	01:25	1500	6.24
1 130 254	M10	01:25	1800	7.49
1 130 255	M10	01:25	2400	9.98
1 130 256	M10	01:25	3000	12.50

Material : Pure Copper 99.9%
Material Conductivity: min. 97%

For Internal Thread M12, Use Code: 1 131
For Internal Thread M16, Use Code: 1 132

STAINLESS STEEL EARTH RODS



Terowell Stainless Steel Earth Rods in similar sizes and threading as solid copper earth rod are very highly used for ground earthing. stainless steel earthing rod are usually made in grade 316. stainless steel earth rod are very effective to overcome conditions of galvanic corrosion. being more resistant to corrosions these can also be used in rocky soil as terowell ss earth rods are strong and unlikely to bend. also adding to the advantages these are very much cost effective than solid copper earth rod.



Code No.	Internal Thread Size (mm)	Dia	Length (mm)	Weight (kg)
5 140 161	M10	5/8 : 16	1000	1.75
5 140 162	M10	5/8 : 16	1200	2.15
5 140 163	M10	5/8 : 16	1500	2.63
5 140 164	M10	5/8 : 16	1800	3.15
5 140 165	M10	5/8 : 16	2400	4.20
5 140 166	M10	5/8 : 16	3000	5.25
5 140 201	M10	3/4 : 20	1000	2.75
5 140 202	M10	3/4 : 20	1200	3.30
5 140 203	M10	3/4 : 20	1500	4.13
5 140 204	M10	3/4 : 20	1800	4.95
5 140 205	M10	3/4 : 20	2400	6.60
5 140 206	M10	3/4 : 20	3000	8.25
5 140 251	M10	01:25	1000	4.16
5 140 252	M10	01:25	1200	4.99
5 140 253	M10	01:25	1500	6.24
5 140 254	M10	01:25	1800	7.49
5 140 255	M10	01:25	2400	9.98
5 140 256	M10	01:25	3000	12.50

Material Stainless Steel: 316

For Internal Thread M12, Use Code: 5 141
For Internal Thread M14, Use Code: 5 142
Can Also Be Made In Stainless Steel Grade 304

COUPLING DOWEL

Terowell Coupling Dowel, outer threading connectors are just like couplers used to make continuous connections between solid earth rods. The material used in these couplers is stainless steel or brass. These couplers are round in shape with outer threading.



Code No.	Material	Thread Dia (mm)	Length (mm)	Weight (kg)
5 230 100	Stainless Steel	10	40	0.02
5 230 101	Stainless Steel	12	40	0.035
5 230 102	Stainless Steel	14	40	0.49
3 230 100	Brass	10	40	0.022
3 230 101	Brass	12	40	0.04
3 230 102	Brass	14	40	0.054

Can also be made in other material upon request

For Bronze, Use Code : 4 230

DRIVING HEAD

Made of Stainless Steel, Terowell Driving Head for solid earth rods are used to drive rods into ground with hand hammer or power hammers and also for protecting the internal thread of the rods.



Code No.	Material	Thread Dia (mm)	Length (mm)	Weight (kg)
5 212 161	Stainless Steel	16	M10	0.02
5 212 201	Stainless Steel	20	M10	0.05
5 212 251	Stainless Steel	25	M10	0.09

For Internal Thread M12, Use Code: 5 213

For Internal Thread M14, Use Code: 5 214

DRIVING TIP

Terowell Driving Tips are similar to the driving tip used for bonded rod. Just it has outer threading of M10, M12 or M14 as per the rod requirement and helps easily drive the rod inside the ground making sure there is no hard to the threads of solid ground rod.



Code No.	Material	Thread Dia (mm)	Length (mm)	Weight (kg)
5 221 161	Stainless Steel	16	M10	0.02
5 221 201	Stainless Steel	20	M10	0.05
5 221 251	Stainless Steel	25	M10	0.09

For Internal Thread M12, Use Code: 5 222

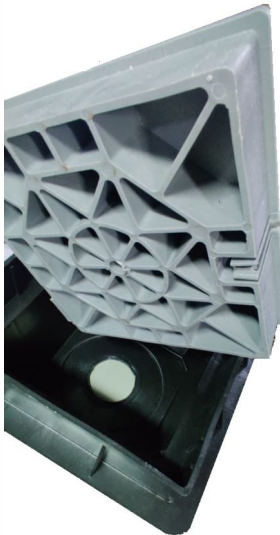
For Internal Thread M14, Use Code: 5 223

EARTH CHAMBERS



Terowell Earth housing pit is manufactured from heavy high-grade polypropylene for high strength & stress levels to absorb a maximum load of 5000 kg. Stabilised against degradation by non-brittle and by sunlight to prevent cold weather damage. The light weight feature allows easy handling, storage and transportation, thus increasing installation efficiency. Termination area is increased by 100% due to simple locking of two units together, allowing deeper earth electrode connections to be made and reducing the effects from harmful voltage gradients.

Code No.	Product	Size	Weight (Kg.)
7 300 332	Plastic Earth Pit	315 X 315 X 230	2.00
7 301 332	Plastic Earth Pit with Metal Cover	315 X 315 X 230	5.00



Terowell Light Weight, Heavy Duty Inspection Pits with its unique design has resulted in performance capabilities superior to the traditional concrete pit. In addition, the features incorporated within its design ensure ease of storage, reduced transportation costs, ease of installation and ease of subsequent inspection and testing of the earth electrode system, therefore providing significant practical benefits to both installers and specifiers alike. The lip of the pit makes a flush fit with standard sized bricks making them blend in with no requirement for a cement surround to the lid.

Code No.	Product	Size	Weight (Kg.)
7302 221	POLYMER / FRP	245 X 245 X 195	1.00
7302 332	POLYMER / FRP	308 X 308 X 214	2.00
7302 551	POLYMER / FRP	500 X 500 X 195	5.00



Terowell Concrete Earth Pit is suitable for load rating to 5000 kgs. and can have an internal Earth Bar (5 hole OR 7 hole) fitted diagonally across in slots provided for multiple connections. It is made with a propitiatory mortar formulation with advanced polymer fibers & glass fibers for light weight, it also offers water resistance (low porosity) & high insulation properties, long life, stability under all weather conditions.

Code No.	Product	Size	Weight (Kg.)
8 310 331	Concrete Earth Pit	310 x 310 x 170	25.00
8 311 331	Concrete Earth Pit With Cast Iron Lid	310 x 310 x 170	35.00
8 312 331	Concrete Earth Pit	320 x 320 x 195	30.00
6 313 332	Cast Iron Earth Pit	308 x 308 x 214	2.50



EARTHING EARTH ROD CHAMBERS

BUSBARS FOR EARTH PIT



The Terowell Inspection Earth Bars for pit are used where there is multiple connections required the ground rod. These fit into the slots provided in the light weight earth pits or concrete earth pits.

Code No.	Length (mm)	Size (mm)	Hole Dia (mm)	No. of Holes	Weight (kg)
1 500 255	250	25 X 6	M10	5	0.31
1 500 305	285	30 X 6	M10	5	0.44
1 500 257	280	25 X 6	M10	7	0.36
1 500 307	320	30 X 6	M10	7	0.48

ROD SEALS



Terowell Earth Seals are particularly intended to suit earth rods of different distances across from 1/2" to 3/4". These seals are utilized along with Terowell Earth Pits. With the growing modernization, any structural construction often demands an installation of located within the structure itself. The complete sense is an underground car park, which requires the earth rod to the waterproof membrane. This prevent mechanism around each earth rod. The earth rod seal is fitted when the earth rod connection is below the water level and where there is a possibility of water entering the inspection housing from below ground. The seal is particularly useful where internal earths are required such as in a basement building. Both single and double flange seals can be adapted to suit our full range of earth rod diameters by use of special compression rings and seals. The seals are used in conjunction with the Wallis heavy duty earth inspection housings. A waterproof earth electrode Single Flange Earth Rod Seal for use in constructions where internal earths are specified.

Code No.	Product	Weight (Kg.)
7 320 120	1/2" Single Flange Seal With PVC Pipe	2.5
7 321 120	1/2" Double Flange Seal With PVC Pipe	3.5
7 320 160	5/8" Single Flange Seal With PVC Pipe	2.5
7 321 160	5/8" Double Flange Seal With PVC Pipe	3.5
7 320 200	3/4" Single Flange Seal With PVC Pipe	2.5
7 321 200	3/4" Double Flange Seal With PVC Pipe	3.5
7 320 250	1" Single Flange Seal With PVC Pipe	2.5
7 321 251	1" Double Flange Seal With PVC Pipe	3.5

EYE BOLT FOR PIT

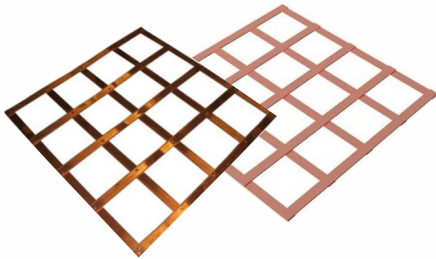
Terowell Eye Bolts are used inside the earth pit, attached to ground rods with thread



Code No.	Rod Dia	Weight (Kg.)
3 470 090	3/8:9	0.30
3 470 120	1/2:12.7	0.35
3 470 160	5/8:16	0.40
3 470 200	3/4:20	0.50
3 470 250	01:25	0.60

MATERIAL: GUNMETAL For Brass, Use Code: 3 470

LATTICE COPPER



Terowell Copper Lattice Earth Plates can be installed in the ground to achieve an effective earth in shallow soils with underlying rocks or in underground locations with multiple buried cable and pipe services – used also to provide protection at medium/high voltage (MV-HV) switching locations where high resistivity soil or ground rock conditions prohibit the driving of copper earth rods.

Code No.	Length x Width (mm)	Thickness (mm)	Weight (Kg.)
1 620 553	500 X 500	3.00	3.60
1 620 663	600 X 600	3.00	4.02
1 620 993	900 X 900	3.00	6.03

SOLID COPPER PLATE



Code No.	Length x Width (mm)	Thickness (mm)	Weight (Kg.)
1 600 661	600 X 600	1.50	4.84
1 600 663	600 X 600	3.00	9.68
1 600 666	600 X 600	6.00	19.40
1 600 991	900 X 900	1.50	10.89
1 600 993	900 X 900	3.00	21.78
1 600 996	900 X 900	6.00	43.55

Material Pure Copper : 99.9% Pure
Material Conductivity : 97% Min.

BONDED COPPER PLATE



Code No.	Length x Width (mm)	Thickness (mm)	Bonding	Weight (Kg.)
0 610 661	600 X 600	1.50	254 MICRONS	4.32
0 610 663	600 X 600	3.00	254 MICRONS	8.64
0 610 666	600 X 600	6.00	254 MICRONS	17.28
0 610 991	900 X 900	1.50	254 MICRONS	9.72
0 610 993	900 X 900	3.00	254 MICRONS	19.44
0 610 996	900 X 900	6.00	254 MICRONS	38.88

Material: High Tensile Steel
Bonding: 99.9% Pure Electrolytic Copper

EARTHING EARTH ROD CLAMPS

ROD TO CABLE STANDARD

Terowell Rod To Cable Clamps are manufactured of high strength copper alloy. ensures a long lasting connection of stranded conductors to ground rods. these clamps do not only have a long life span but have a high resistance to corrosion.



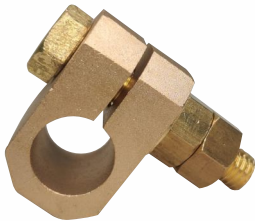
Code No.	Rod Dia	Cable Size	Weight (Kg.)
2 401 095	3/8" : 9.5	6 35	0.05
2 401 127	1/2" : 12.7	16-50	0.08
2 401 160	5/8" : 16	16-70	0.09
2 401 200	3/4" : 20	35-95	0.12
2 401 250	1" : 25	70-120	0.14

MATERIAL: GUNMETAL

For Brass, Use Code: 3 401

ROD TO CABLE LUGS

Terowell Rod To Cable type clamps also known as "D" type lugs are made from copper alloy. used for connection between ground rods and cable connected with lugs. the clamps have a high imperviousness to corrosion and are mechanically solid to guarantee an enduring association.



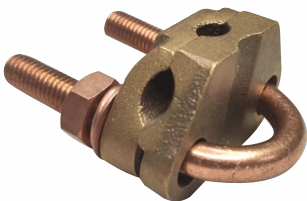
Code No.	Rod Dia	Weight (Kg.)
2 402 095	3/8" : 9.5	0.08
2 402 127	1/2" : 12.7	0.15
2 402 160	5/8" : 16	0.20
2 402 200	3/4" : 20	0.35
2 402 250	1" : 25	0.41

MATERIAL: GUNMETAL

For Brass, Use Code: 3 402

U BOLT ROD TO CABLE - GUV

Terowell U Bolt Rod to Cable Clamp GUV are made from high copper content alloy for the connection of the earthing rod to cable. Corrosion resistance, conductivity and mechanical strength in clamp design is used to ensure the earthing system remains operative for many years.



Code No.	Rod Dia	Cable Size	Weight (Kg.)
2 403 140	5/8" : 16	16-70	0.38
2 403 141	5/8" : 16	70-185	0.45
2 403 142	5/8" : 16	185-240	0.62
2 403 200	3/4" : 20	16-70	0.38
2 403 201	3/4" : 20	70-185	0.45
2 403 202	3/4" : 20	185-240	0.62
2 403 250	1" : 25	16-70	0.40
2 403 251	1" : 25	70-185	0.50
2 403 252	1" : 25	185-240	0.66

MATERIAL: GUNMETAL

For Brass, Use Code: 3 403

EARTHING EARTH ROD CLAMPS

U BOLT ROD TO DUAL CABLES - GUV TYPE



Rod To Dual Cables Clamps are offered by Terowell for connecting two cables with ground rods. highly effective. corrosion resistance and very high life span provides clients most cost effective product. can be made in different copper alloy material.

Code No.	Rod Dia	Cable Size	Weight (Kg.)
2 404 120	1/2" : 12.7	16 - 35	0.38
2 404 121	1/2" : 12.7	50 - 70	0.38
2 404 160	5/8" : 16	16 - 70	0.38
2 404 161	5/8" : 16	95 - 120	0.45
2 404 162	5/8" : 16	150 - 240	0.62
2 404 200	3/4" : 20	16 - 70	0.45
2 404 201	3/4" : 20	95 - 120	0.62
2 404 202	3/4" : 20	150 - 240	0.86

MATERIAL: GUNMETAL

For Brass, Use Code: 3 404

U BOLT ROD TO TRIO CABLES - GUV TYPE



Terowell U Bolt to Trio Cable Connector Clamps are similar to dual cable clamps. But these provide a single rod to triple cable connection.

Code No.	Rod Dia	Cable Size	Weight (Kg.)
2 405 120	1/2" : 12.7	16 - 35	0.36
2 405 121	1/2" : 12.7	50 - 70	0.4
2 405 160	5/8" : 16	16 - 70	0.36
2 405 161	5/8" : 16	95 - 120	0.42
2 405 162	5/8" : 16	150 - 240	0.65
2 405 200	3/4" : 20	16 - 70	0.42
2 405 201	3/4" : 20	95 - 120	0.59
2 405 202	3/4" : 20	150 - 240	0.77

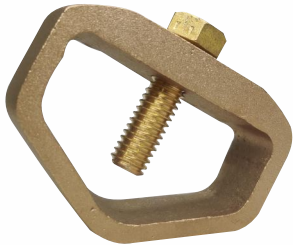
MATERIAL: GUNMETAL

For Brass, Use Code: 3 405

EARTHING EARTH ROD CLAMPS

ROD TO TAPE CLAMP

Terowell Rod to Tape Clamps are used to join various type of tape to ground electrodes.



ROD TO TAPE CLAMP B TYPE

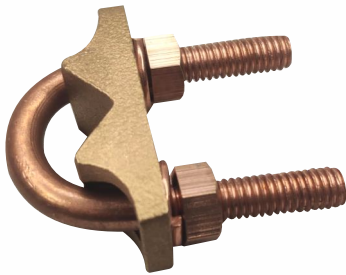
Code No.	Rod Dia (mm)	Max Conductor Size	Weight (Kg.)
2 410 161	5/8 : 16	29 X 16	0.15
2 410 201	3/4 : 20	29 X 13	0.15
2 410 162	5/8 : 16	54 X 16	0.3
2 410 202	3/4 : 20	54 X 13	0.3

MATERIAL: GUNMETAL

For Brass, Use Code: 3 410

U BOLT SINGLE PLATE

U Bolt Single Plate Clamps are used to connect horizontal tapes of different sizes/standed cables with lugs to the earth ground rod. These Terowell Clamps have a high resistance to corrosion and are mechanically strong to ensure a lasting connection.



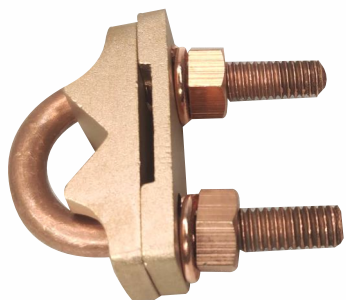
Code No.	Max Rod Dia (mm)	Hole Center	Weight (Kg.)
2 411 090	9 TO 12.5	30	0.16
2 411 160	16	30	0.17
2 411 200	20	37	0.18
2 411 250	25	37	0.19
2 411 310	31	41	0.25

MATERIAL: GUNMETAL

For Brass, Use Code: 3 411

U BOLT DOUBLE PLATE

Terowell U Bolt Double Plate Rod to tape clamps provide an extra support to the tapes and also no drilling is required which in the case of single plate is required.



Code No.	Max Rod Dia (mm)	Tap Width	Weight (Kg.)
2 412 090	9 TO 12.5	25	0.24
2 412 160	16	25	0.26
2 412 200	20	25	0.27
2 412 250	25	25	0.28
2 412 050	31	50	0.4

MATERIAL: GUNMETAL

For Brass, Use Code: 3 412

U BOLT PIPE TO DUAL CABLES

Terowell Pipe to Cable Clamps help provide a connection between cables and copper pipe. These clamps are made from highly effective, corrosion resistance material and have a very high life span.



Code No.	Pipe Dia (mm)	Cable Size	Weight (Kg.)
2 4013 257	25	16-70	0.56
2 4013 259	25	90-150	0.56
2 4013 387	31-38	16-70	0.79
2 4013 389	31-38	90-150	0.79
2 4013 507	50	16-70	0.77
2 4013 509	50	90-150	0.77
2 4013 647	64	16-70	0.84
2 4013 649	64	90-150	0.84
2 4013 757	75	16-70	0.85
2 4013 759	75	90-150	0.85

MATERIAL: GUNMETAL

For Brass, Use Code: 3 4013

U BOLT PIPE TO TRIPLE CABLES



Code No.	Pipe Dia (mm)	Cable Size	Weight (Kg.)
2 4014 257	25	16-70	0.55
2 4014 259	25	90-150	0.55
2 4014 387	31-38	16-70	0.77
2 4014 389	31-38	90-150	0.77
2 4014 507	50	16-70	0.79
2 4014 509	50	90-150	0.79
2 4014 647	64	16-70	0.82
2 4014 649	64	90-150	0.82
2 4014 757	75	16-70	0.83
2 4014 759	75	90-150	0.83

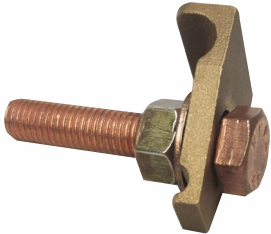
MATERIAL: GUNMETAL

For Brass, Use Code: 3 4014

CONDUCTOR CLAMPS & CLIPS

FLAT TO CABLE CONNECTOR SINGLE PLATE

More like a tower bond clamp, Terowell Flat to Cable Clamps provide a connection between flat surfaces to cable or conductor connection.

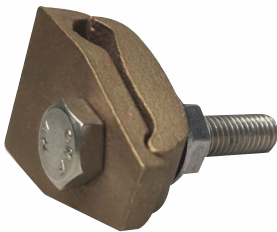


Code No.	Cable Size	Bolt Size	Bolt Material	Weight (Kg.)
2 406 050	16-50	M10 X 1.5"	COPPER	0.11
2 406 120	70-120	M12 X 2"	COPPER	0.14
2 406 240	120-240	M12 X 2.5"	COPPER	0.15

MATERIAL: GUNMETAL

For Brass, Use Code: 3 406

FLAT TO CABLE CONNECTOR DOUBLE PLATE



Code No.	Cable Size	Bolt Size	Bolt Material	Weight (Kg.)
2 407 050	16-50	M10 X 1.5"	COPPER	0.16
2 407 120	70-120	M12 X 2"	COPPER	0.20
2 407 240	120-240	M12 X 2.5"	COPPER	0.22

MATERIAL: GUNMETAL

For Brass, Use Code: 3 407

FLAT TO TWO CABLES SINGLE PLATE



Code No.	Cable Size	Bolt Size	Bolt Material	Weight (Kg.)
2 408 050	16-50	M10 X 1.5"	COPPER	0.12
2 408 120	70-120	M12 X 2"	COPPER	0.15
2 408 240	120-240	M12 X 2.5"	COPPER	0.16

MATERIAL: GUNMETAL

For Brass, Use Code: 3 408

FLAT TO 2 CABLES DOUBLE PLATE



Code No.	Cable Size	Bolt Size	Bolt Material	Weight (Kg.)
2 409 050	16-50	M10 X 1.5"	COPPER	0.17
2 409 120	70-120	M12 X 2"	COPPER	0.21
2 409 240	120-240	M12 X 2.5"	COPPER	0.23

MATERIAL: GUNMETAL

For Brass, Use Code: 3 409

TEE CABLE CLAMP



Terowell Tee Clamps are used for forming or bonding a t type connection to cables and conductors.

Code No.	Cable Size	Weight (Kg.)
1 4010 070	35-70	0.14
1 4010 120	70-120	0.26

MATERIAL: COPPER

HEAVY DUTY CABLE SADDLE CLAMP



Terowell Heavy Duty Cable Saddles are used for wall mounting cables.

Code No.	Cable Size	Weight (Kg.)
2 4011 050	25-50	0.10
2 4011 070	50-70	0.12
2 4011 095	70-95	0.13
2 4011 080	8MM	0.15

MATERIAL: GUNMETAL For Brass, Use Code: 3 4011

CROSS CABLE CLAMP



Cross Cable Clamps or square cable clamps are suitable for crossing two cables. these clamps are used to make straight through and t joints in a continuous network.

Code No.	Cable Size	Weight (Kg.)
2 4012 050	50	0.30
2 4012 070	70	0.25
2 4012 095	95	0.32
2 4012 008	8MM	0.25

MATERIAL: GUNMETAL For Brass, Use Code: 3 4012

CONDUCTOR CLAMPS & CLIPS

FLAT TAPE CLAMP



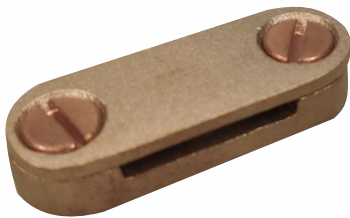
Terowell Flat Tape Clamp or tower clamp is used to fix copper tape.

Code No.	Tape Size	Bolt Size	Weight (Kg.)
2 413 253	25 X 3	M10	0.12

MATERIAL: GUNMETAL

For Brass, Use Code: 3 413

DC TAPE CLAMP



Terowell DC Tape Clips provides support to the down conductor tape and is rigid enough to with stand mechanical stresses, lightning stresses, and thermal expansion and contraction of the conductor tapes. These can be used for all tape conductors like bare copper, aluminium or PVC covered tapes.

Code No.	Tape Size	Weight (Kg.)
2 414 203	20 X 3	0.06
2 414 252	25 X 2	0.07
2 414 253	25 X 3	0.07
2 414 254	25 X 4	0.07
2 414 256	25 X 6	0.08
2 414 304	30 X 4	0.09
2 414 305	30 X 5	0.09
2 414 383	38 X 3	0.12
2 414 385	38 X 5	0.12
2 414 386	38 X 6	0.13
2 414 404	40 X 4	0.14
2 414 406	40 X 6	0.14
2 414 503	50 X 3	0.15
2 414 504	50 X 4	0.15
2 414 506	50 X 6	0.16

MATERIAL: GUNMETAL For Brass, Use Code: 3 414

For Aluminium Use Code: 10 414

TAPE CLIP



Terowell Tape Clips are made from pur copper and are used to fix copper tapes.

Code No.	Tape Size	Conductor	Weight (Kg.)
1 425 203	20 X 3	BARE COPPER	0.02
1 425 253	25 X 3	BARE COPPER	0.02
1 425 250	25 X 3	PVC COPPER	0.025
1 425 503	50 X 3	BARE COPPER	0.05

MATERIAL: COPPER

SQUARE TAPE CLAMP



Cross Tape Clamps or Terowell Square Tape Clamps are suitable for crossing two tapes. These clamps are used to make straight through and T joints in a continuous network. The base of these clamps have a hole countersunk for fixing the clamp. The lid of the top plate is also secured by 4 screws

Code No.	Tape Size	Weight (Kg.)
2 415 203	20 X 3	0.15
2 415 252	25 X 2	0.16
2 415 253	25 X 3	0.17
2 415 254	25 X 4	0.18
2 415 256	25 X 6	0.22
2 415 304	30 X 4	0.26
2 415 305	30 X 5	0.3
2 415 404	40 X 4	0.39
2 415 406	40 X 6	0.43
2 415 503	50 X 3	0.43
2 415 504	50 X 4	0.46
2 415 506	50 X 6	0.57

MATERIAL: GUNMETAL For Brass, Use Code: 3 415

SCREWDOWN TEST CLAMP



These clamps are used in fixing copper tapes in two way to each other.

Code No.	Conductor Size	Weight (Kg.)
2 416 253	25 X 3	0.84

MATERIAL: GUNMETAL For Brass, Use Code: 3 416

RWP BOND



These clamps are use to bond copper or other material conductor tapes to water pipes, hand rails, etc.

Code No.	Tape Width	Bolt Size	Weight (Kg.)
2 4110 026	26	M10	0.22

MATERIAL: GUNMETAL For Brass, Use Code: 3 4110

TEST BOND CLAMP



Test Bond Test Clamp is used to form a disconnecting joint between the down conductor and earthing system.

Code No.	Rod Dia	Weight (Kg.)
2 4130 253	25 X 3	0.95

MATERIAL: GUNMETAL For Brass, Use Code: 3 4130

ONE HOLE CABLE CLIP



Code No.	Conductor Dia	Weight (Kg.)
1 420 008	8	0.015
1 420 012	12	0.015
1 420 016	16	0.025
1 420 020	20	0.025

MATERIAL: COPPER

OBLONG TEST CLAMP

Oblong test clamps are designed in the manner connecting two tapes in a straight line/overlapping each other, and two bolts that provide security and tightness of the tapes. Can also be used for disconnection of earth system for testing purpose.

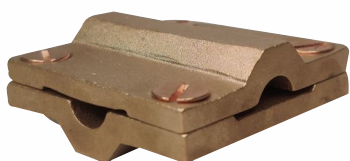
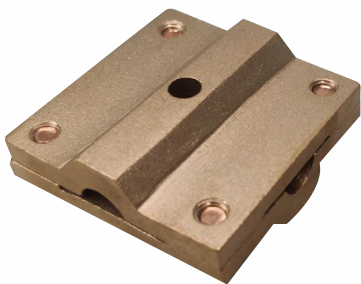


Code No.	Rod Dia	Weight (Kg.)
2 4120 203	20 X 3	0.35
2 4120 253	25 X 3	0.40
2 4120 256	25 X 6	0.42
2 4120 316	31 X 6	0.42
2 4120 406	40 X 6	0.45
2 4120 504	50 X 4	0.48
2 4120 506	50 X 6	0.50

MATERIAL: GUNMETAL For Brass, Use Code: 3 4120

SQUARE TAPE TO CABLE CLAMP

Terowell Square Tape to Cable clamps are suitable for crossing to cable. These clamps are used to make straight through and T joints in a continuous network. The base of these clamps have a hole countersunk for fixing the clamp. The lid of the top plate is also secured by 4 screws.

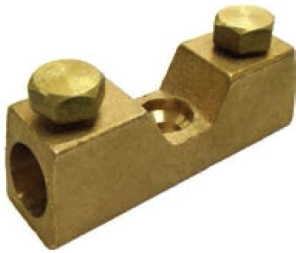


Code No.	Tape Size	Cable Size	Weight (Kg.)
2 430 080	25 X 3	8 MM	0.24
2 430 500	26 X 3	50	0.27
2 430 700	27 X 3	70	0.3
2 430 950	28 X 3	95	0.32
2 430 120	29 X 3	120	0.33

MATERIAL: GUNMETAL

For Brass, Use Code: 3 430

CABLE TEST CLAMP



Code No.	Cable Size (mm ²)	Material	Weight (Kg.)
2 4016 120	35-120	Copper Alloy	0.192
2 4017 120	35-120	Tinned Copper Alloy	0.192
10 4016 120	35-120	Aluminium Alloy	0.058

ROD TO TAPE COUPLING



Terowell rod to tape couplings are used to connect tape conductors to rod conductors. These are made of high copper alloy or aluminium as per client requirement. They are used with the side mounted rod brackets.

Code No.	Length (mm)	Weidth	Conductor Size	Weight (Kg.)
2 431 160	80	40	M16 & 25X3	0.23
2 431 200	80	40	M20 & 25X3	0.23

MATERIAL: GUNMETAL

**For Brass, Use Code: 3 431
For Aluminium, Use Code : 10 431**

SIDE MOUNTED ROD BRACKET



Terowell side mounted rod brackets used in conjunction with the rod to tape coupling are used to fix air rods with tape conductors. These clamps are used where roof saddle cannot be fitted.

Code No.	Rod Dia (mm)	Length (mm)	Weidth	Weight (Kg.)
2 4140 160	16	97	120	0.7
2 4140 200	20	97	120	0.5

MATERIAL: GUNMETAL

**For Brass, Use Code: 3 4140
For Aluminium, Use Code : 10 4140**

STRIKE PADS



Strike pads are used where it is not possible to install a conductor on the roof or side of the building. These are Manufactured from high quality copper alloy or aluminium alloy. Supplied with setscrew for attachment of lightning conductors

Code No.	Dia (mm)	Height	Weight (Kg.)
2 4150 122	122	40	0.45

MATERIAL: GUNMETAL

**For Brass, Use Code: 3 4150
For Aluminium, Use Code 10 4150**

CONDUCTOR CONNECTOR CLAMPS

EARTH BOSS

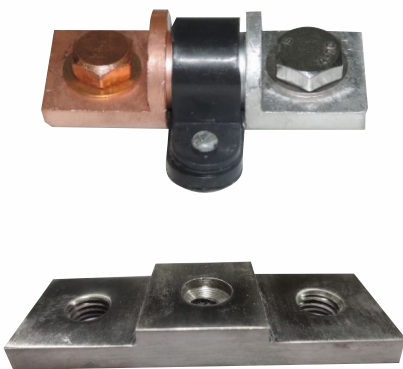


Terowell Earth Bosses can be made in mild steel, high tensile steel, galvanizes steel and stainless steel. These are available in almost all sizes. Generally provided with accessories like stud, nut, washers and with complete assembly. These are designed to provide an earth connection point on a steel structure – the boss is welded onto steel vessels, tanks and other structures.

Code No.	Diameter (mm)	Length (mm)	Thread (mm)	Weight (Kg.)
5 440 238	20	30	M08	0.045
5 440 231	20	30	M10	0.043
5 440 338	30	30	M08	0.150
5 440 331	30	30	M10	0.140
5 440 341	30	40	M10	0.200
5 440 441	40	40	M10	0.340
5 440 551	50	50	M10	0.740

MATERIAL: STAINLESS STEEL For High Tensile Steel, Use Code : 6 440

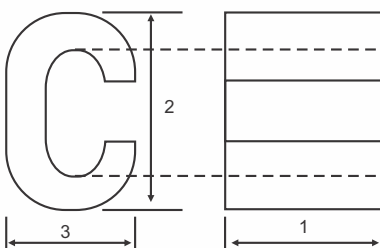
BI-METALIC CONNECTOR



These Connectors are used to join Aluminium and Copper Conductors to Each Other.

Code No.	Conductor Size	Material	Weight (Kg.)
9 450 253	25X3	Aluminium & Copper	0.22
5 450 253	25X3	Stainless Steel	0.17
9 450 506	50X6	Aluminium & Copper	0.5
9 450 008	8MM	Aluminium & Copper	0.22
5 450 008	8MM	Stainless Steel	0.22
9 450 825	8MM : 25 X 3	Aluminium & Copper	0.22
5 450 825	8MM : 25 X 3	Stainless Steel	0.22

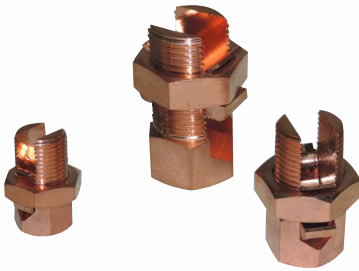
C CLAMPS



Code No.	Cable Size mm ²	DIMENSIONS			Weight
		1	2	3	
1 490 006	C6 - C6	9	9,8	6,4	
1 490 010	C10 - C10	12	12,6	8,4	
1 490 016	C16 - C16	17	19,4	12,0	
1 490 025	C25 - C25	17	21,4	13,0	
1 490 035	C35 - C35	21	26,6	15,6	
1 490 050	C50 - C50	26	38,0	21,0	
1 490 070	C70 - C70	28	34,0	21,0	
1 490 095	C95 - C95	29	41,0	26,0	
1 490 120	C120 - C120	30	45,0	28,0	
1 490 150	C150 - C150	30	48,0	28,0	
1 490 185	C185 - C185	32	52,0	32,0	
1 490 240	C240 - C240	32	55,0	38,0	

CONDUCTOR CONNECTOR CLAMPS

SPLIT BOLT CONNECTORS



Code No.	Cable Size mm ²	I	H a/f	N a/f	F	L	Weight (Kg.)
3 460 006	6	4.00	12.70	13.35	4.80	19.85	0.017
3 460 010	10	4.70	12.70	19.00	5.60	26.75	0.02
3 460 016	16	5.70	12.70	19.00	5.60	26.00	0.03
3 460 025	25	7.30	16.00	19.00	5.60	28.00	0.04
3 460 035	35	7.80	18.50	24.00	6.35	35.00	0.05
3 460 050	50	9.70	24.10	27.20	8.65	42.00	0.08
3 460 070	70	11.50	24.10	27.20	8.65	44.50	0.12
3 465 095	95	14.40	26.50	35.40	9.40	50.00	0.15
3 460 120	120	16.20	30.00	35.40	12.00	57.50	0.18
3 460 150	150	16.20	30.00	35.40	12.00	57.50	0.23
3 460 185	185	18.20	31.75	38.00	12.00	57.50	0.35
3 460 240	240	22.00	40.00	48.20	14.25	72.50	0.46
3 460 300	300	24.00	42.00	50.00	14.25	72.50	0.58
3 460 400	400	26.00	48.00	56.00	16.00	76.50	0.77
3 460 500	500	30.00	55.00	65.00	16.00	80.00	0.96

EARTH POINT



Earth Point

Code No.	No. of Hole	Stud LxWxH (In)	Weight (Kg.)
2 480 501	1	55 x 50	0.30
2 480 762	2	76 x 82.5 x 41	0.30
2 480 764	4	76 x 85.5 x 82.5	0.60

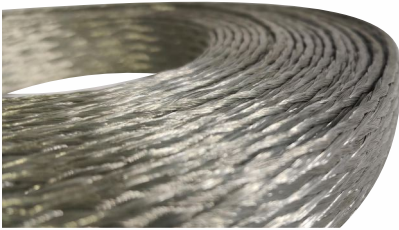


Earth Point with Prewelding

Code No.	No. of Hole	Cable Size (mm ²)	Length (mm)	Weight (Kg.)
2 481 051	1	70	500	0.77
2 481 052	2	70	500	0.72
2 481 102	2	70	1000	1.10
2 481 302	2	70	3000	2.50
2 481 054	4	70	500	0.90
2 481 104	4	70	1000	1.30
2 481 304	4	70	3000	2.20

CONDUCTOR FLEXIBLE BRAIDS

COPPER FLEXIBLE BRAIDS



Code No.	Overall Nominal	C.S.A. (mm ²)	Weight (Kg.)
1 600 006	12 x 1.0	6	0.055
1 600 010	15 x 1.5	10	0.096
1 600 016	19 x 2.5	16	0.16
1 600 025	25 x 3.0	25	0.25
1 600 035	25 x 3.5	35	0.34
1 600 050	30 x 5.0	50	0.49
1 600 070	32 x 6.0	70	0.63
1 600 095	37 x 6.0	95	0.93
1 600 120	45 x 6.0	120	1.15
1 600 150	50 x 8.0	150	1.45

MATERIAL: PURE COPPER

ALSO AVAILABLE: FULLY TINNED

COPPER FLAT BRAIDED CONNECTORS



Code No.	Length (mm)	Overall Dimensions (mm)	Holl Dia (mm)	Cross-Sex Area (mm ²)	Weight (Kg.)
1 601 006	200	12 x 1	7.0	6.0	0.01
1 601 006a	400	12 x 1	7.0	6.0	0.02
1 601 010	200	15 x 1.5	7.0	10	0.02
1 601 010a	400	15 x 1.5	7.0	10	0.04
1 601 016	200	19 x 2.5	9.0	16	0.03
1 601 016a	400	19 x 2.5	9.0	16	0.06
1 601 025	200	25 x 3	11	25	0.05
1 601 025a	400	25 x 3	11	25	0.10
1 601 035	200	25 x 3.5	11	35	0.09
1 601 035a	400	25 x 3.5	11	35	0.15
1 601 050	200	30 x 5	11	50	0.10
1 601 050a	400	30 x 5	11	50	0.20
1 601 070	200	32 x 6	13	70	0.13
1 601 070a	400	32 x 6	13	70	0.25
1 601 095	200	37 x 6	13	95	0.19
1 601 095a	400	37 x 6	13	95	0.37
1 601 120	200	45 x 6	17	120	0.23
1 601 120a	400	45 x 6	17	120	0.46
1 601 150	200	50 x 8	17	150	0.30
1 601 150a	400	50 x 8	17	150	0.60

MATERIAL: PURE COPPER

ALSO AVAILABLE: FULLY TINNED

CONDUCTOR FLEXIBLE BRAIDS

COPPER FLEXIBLE CIRCULAR BRAID



Code No.	Length (mm)	Overall Dimensions (mm)	Holl Dia (mm)	Cross-Sex Area (mm ²)	Weight (Kg.)
1 602 006	200	4.2	7.0	6.0	0.01
1 602 006a	400	4.2	7.0	6.0	0.02
1 602 010	200	5.4	7.0	10	0.02
1 602 010a	400	5.4	7.0	10	0.04
1 602 016	200	7.0	9.0	16	0.03
1 602 016a	400	7.0	9.0	16	0.06
1 602 025	200	8.5	11	25	0.05
1 602 025a	400	8.5	11	25	0.10
1 602 050	200	11.5	11	50	0.10
1 602 050a	400	11.5	11	50	0.20
1 602 070	200	14.5	13	70	0.13
1 602 070a	400	14.5	13	70	0.25
1 602 095	200	16.0	13	95	0.19
1 602 095a	400	16.0	13	95	0.37

MATERIAL: PURE COPPER

ALSO AVAILABLE: FULLY TINNED

COPPER FLEXIBLE 2 HOLE BRAIDED CONNECTOR



Code No.	Amp Rating (A)	No. of Layer	Length (mm)	Cross Section (mm ²)	Weight (Kg.)
1 603 035	150	1	350	35	0.15
1 603 050	200	1	350	50	0.18
1 603 070	250	1	350	70	0.25
1 603 095	300	1	350	95	0.35
1 603 120	350	1	350	120	0.42
1 603 150	700	3	380	150	0.60

MATERIAL: PURE COPPER

ALSO AVAILABLE: FULLY TINNED

EARTH BARS AND DISCONNECTING LINKS

Terowell earth bars provide an easy and common earth point for electrical installations.

These earth bars are manufactured from 50mm x 6mm hard drawn copper bars. Assembled with stainless steel fittings such as nut, bolt washer, studs.

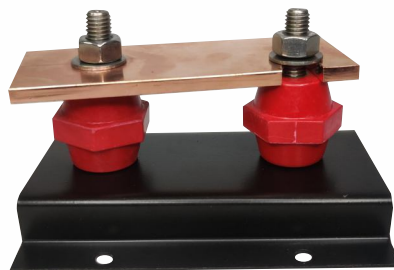
The base of these bars are made of mild steel and are powder coated to provide a perfect finish to the base. The base is provided with pre drilled fixing holes for ease of installation.

Earth bars are also supplied with single or double disconnecting links, these links provide a temporary break from the connection to the earth thus allowing inspection and testing of multiple earth systems with the earth bar is disconnected from the other lightning and earth system.

Special earth bars manufactured to customer requirements are also available.

Earth bars with tin plating also available.

The tinned finish protect the copper from oxidisation



DISCONNECTING LINK

Code No.	DESCRIPTION	DIMENSIONS	Weight (Kg.)
9 501 130	Single Disconnecting Link	130 X 95 X 90	0.84

PRODUCT	DESCRIPTION	QUANTITY
CONDUCTOR	COPPER 50MM X 6MM	1 Piece
BASE	MILD STEEL POWDER COATED	1 Piece
INSULATOR	35MM HEXAGONAL	2 Pieces
Nut, Bolt, Washer & Stud	Stainless Steel 316L M10	as per the No. of connections

Earth bars available in various size upon request, 50mm x 4 mm, 40mm x 5mm, 100mm x 6mm etc.

Round edged Earth Bars also available.

Other Grade accessories available upon request.

EARTH BARS STANDARD EARTH BAR

STANDARD EARTH BAR



Code No.	DESCRIPTION	DIMESIONS	Weight (Kg.)
9 502 300	6 Way Earth Bar	305 X 95 X 90	1.98
9 502 370	8 Way Earth Bar	375 X 95 X 90	2.41
9 502 430	10 Way Earth Bar	445 X 95 X 90	2.84
9 502 500	12 Way Earth Bar	515 X 95 X 90	3.27
9 502 570	14 Way Earth Bar	585 X 95 X 90	3.7
9 502 640	16 Way Earth Bar	655 X 95 X 90	4.13
9 502 710	18 Way Earth Bar	725 X 95 X 90	4.56
9 502 780	20 Way Earth Bar	795 X 95 X 90	4.99
9 502 850	22 Way Earth Bar	865 X 95 X 90	5.42
9 502 920	24 Way Earth Bar	935 X 95 X 90	5.85
9 502 990	26 Way Earth Bar	1005 X 95 X 90	3.28
9 502 1060	28 Way Earth Bar	1075 X 95 X 90	6.71
9 502 1130	30 Way Earth Bar	1145 X 95 X 90	7.14

PRODUCT	DESCRIPTION	QUANTITY
CONDUCTOR	COPPER 50MM X 6MM	1 Piece
BASE	MILD STEEL POWDER COATED	1 Piece
INSULATOR	35MM HEXAGONAL	2 Pieces
Nut, Bolt, Washer & Stud	Stainless Steel 316L M10	as per the No. of connections

Earth bars available in various size upon request, 50mm x 4 mm, 40mm x 5mm, 100mm x 6mm etc.

Round edged Earth Bars also available.

Other Grade accessories available upon request.

EARTH BAR SINGLE DISCONNECTING LINK

EARTH BAR WITH SINGLE DISCONNECTING LINK



Code No.	DESCRIPTION	DIMESIONS	Weight (Kg.)
9 503 375	6 Way Earth Bar	380 X 95 X 90	2.58
9 503 445	8 Way Earth Bar	450 X 95 X 90	3.01
9 503 505	10 Way Earth Bar	520 X 95 X 90	3.44
9 503 575	12 Way Earth Bar	590 X 95 X 90	3.87
9 503 645	14 Way Earth Bar	660 X 95 X 90	4.30
9 503 715	16 Way Earth Bar	730 X 95 X 90	4.73
9503 785	18 Way Earth Bar	800 X 95 X 90	5.16
9 503 855	20 Way Earth Bar	870 X 95 X 90	5.59
9 503 925	22 Way Earth Bar	940 X 95 X 90	6.02
9 503 995	24 Way Earth Bar	1010 X 95 X 90	6.45
9 503 1065	26 Way Earth Bar	1080 X 95 X 90	6.88
9 503 1135	28 Way Earth Bar	1150 X 95 X 90	7.31
9 503 1205	30 Way Earth Bar	1220 X 95 X 90	7.74

PRODUCT	DESCRIPTION	QUANTITY
CONDUCTOR	COPPER 50MM X 6MM	1 Piece
BASE	MILD STEEL POWDER COATED	1 Piece
INSULATOR	35MM HEXAGONAL	3 Pieces
Nut, Bolt, Washer & Stud	Stainless Steel 316L M10	as per the No. of connections

Earth bars available in various size upon request, 50mm x 4 mm, 40mm x 5mm, 100mm x 6mm etc.

Round edged Earth Bars also available.

Other Grade accessories available upon request.

EARTH BAR TWIN DISCONNECTING LINK

EARTH BAR WITH TWIN DISCONNECTING LINK



Code No.	DESCRIPTION	DIMESIONS	Weight (Kg.)
9 503 375	6 Way Earth Bar	455 X 95 X 90	3.18
9 503 445	8 Way Earth Bar	525 X 95 X 90	3.61
9 503 505	10 Way Earth Bar	595 X 95 X 90	4.04
9 503 575	12 Way Earth Bar	665 X 95 X 90	4.47
9 503 645	14 Way Earth Bar	735 X 95 X 90	4.9
9 503 715	16 Way Earth Bar	805 X 95 X 90	5.33
9 503 785	18 Way Earth Bar	875 X 95 X 90	5.76
9 503 855	20 Way Earth Bar	945 X 95 X 90	6.19
9 503 925	22 Way Earth Bar	1015 X 95 X 90	6.62
9 503 995	24 Way Earth Bar	1085 X 95 X 90	7.05
9 503 1065	26 Way Earth Bar	1155 X 95 X 90	7.48
9 503 1135	28 Way Earth Bar	1225 X 95 X 90	7.91
9 503 1205	30 Way Earth Bar	1295 X 95 X 90	8.34

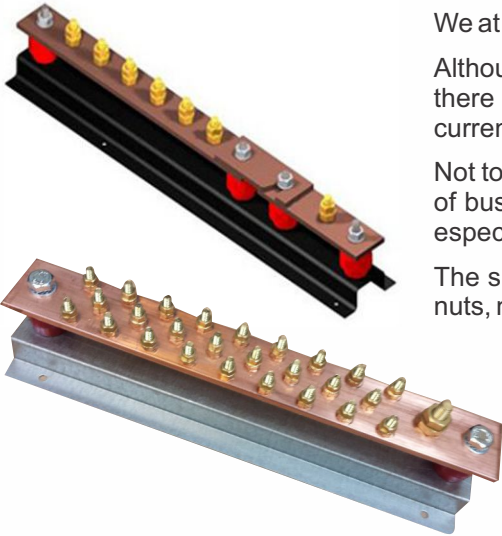
PRODUCT	DESCRIPTION	QUANTITY
CONDUCTOR	COPPER 50MM X 6MM	3 Piece
BASE	MILD STEEL POWDER COATED	1 Piece
INSULATOR	35MM HEXAGONAL	4 Pieces
Nut, Bolt, Washer & Stud	Stainless Steel 316L M10	as per the No. of connections

Earth bars available in various size upon request, 50mm x 4 mm, 40mm x 5mm, 100mm x 6mm etc.

Round edged Earth Bars also available.

Other Grade accessories available upon request.

SPECIAL EARTH BARS



We at Terowell have many years of experience manufacturing bus bars for our clients. Although our standard and other bus bars cover all the size and details needs but still there are projects where special bus bars are required as per the project needs and current rating.

Not to worry still Terowell got you covered. With our expertise we can provide all kinds of busbars as per specifications needed also we provide a sample pre-manufacture especially for client review, approval and alterations.

The special bars can include change in bar size, size and type of bolts washers and nuts, number of disconnecting links, number of insulators

ACCESSORIES

Terowell insulators are also provided separately with or without studs.

The insulators are available in hex or conical shape. Also in different colours, but standard used colours are red and black.

INSULATORS



Code No.	Thread	Width	Weight (Kg.)
9 710 300	M8	30	0.054
9 710 350	M8	35	0.056
9 710 351	M10	35	0.057
9 710 400	M10	40	0.067
9 710 450	M10	45	0.08
9 710 500	M10	50	0.08
9 710 501	M12	50	0.08

BOLT



Code No.	Thread	Length	Weight (Kg.)
5 231 061	M06	12	0.005
5 231 062	M06	16	0.006
5 231 081	M08	16	0.014
5 231 082	M08	20	0.016
5 231 083	M08	25	0.018
5 231 100	M10	16	0.018
5 231 101	M10	30	0.027
5 231 102	M10	35	0.031
5 231 103	M10	40	0.0364

MATERIAL: STAINLESS STEEL

**For Copper Use Code : 1 231
For Brass Use Code : 3 231**

EARTH BAR ACCESSORIES

HEX NUT



All nut bolt and washers are manufactured from stainless steel non magnetic grade 316.

These are highly corrosion resistant.

Code No.	Thread	Weight (Kg.)
5 240 080	M08	0.01
5 240 100	M10	0.01
5 240 120	M12	0.015
5 240 140	M14	0.02

MATERIAL: STAINLESS STEEL For Copper Use Code : 1 240
For Brass Use Code : 3 240

WASHER



Code No.	Thread	Weight (Kg.)
5 250 080	M08	0.002
5 250 100	M10	0.004
5 250 120	M12	0.006
5 250 140	M14	0.008

MATERIAL: STAINLESS STEEL For Copper Use Code : 1 250
For Brass Use Code : 3 250

SPRING WASHER



Code No.	Thread	Weight (Kg.)
5 251 080	M08	0.002
5 251 100	M10	0.003
5 251 120	M12	0.004
5 251 140	M14	0.006

MATERIAL: STAINLESS STEEL For Copper Use Code : 1 251
For Brass Use Code : 3 251

BASE SUPPORT



The Terowell ms base support for earth bars are made from mild steel and powder coated thus protects the metal from corrosion. These can also be used to safeguard copper tapes from accidental damage, theft or vandalism. Can be provided in any shape and size as per customer needs.

Code No.	Length	Tape Size	Height	Weight (Kg.)
6 720 506	1000	25 X 3	17MM	1
6 720 253	1000	50 X 6	19MM	1.5

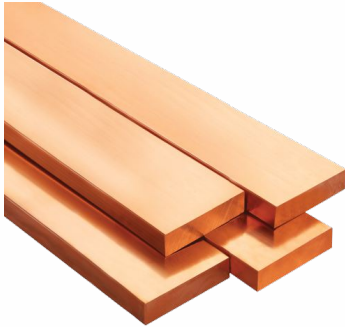
MATERIAL: MILD STEEL For SS, Use Code : 5 720

CONDUCTOR TAPE CONDUCTORS

CONDUCTORS

Conductors form an important part of the earthing & lightning protection system. They are made of pure form of material to provide highly efficient results. Conductors are supplied with Terowell marking for identification purpose.

COPPER STANDARD CONDUCTOR

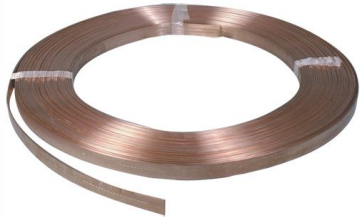


Code No.	Size (L X W)	Cross - Section Area	Weight For 2 Meters (kgs)
1 520 105	10 X 5	50	0.896
1 520 155	15 X 5	75	1.344
1 520 166	16 X 6	96	1.72
1 520 203	20 X 3	60	1.075
1 520 204	20 X 4	80	1.434
1 520 205	20 X 5	100	1.79
1 520 2010	20 X 10	200	3.58
1 520 253	25 X 3	75	1.344
1 520 254	25 X 4	100	1.79
1 520 255	25 X 5	125	2.24
1 520 256	25 X 6	150	2.689
1 520 305	30 X 5	150	2.689
1 520 306	30 X 6	180	3.23
1 520 3010	30 X 10	300	5.38
1 520 326	32 X 6	192	3.44
1 520 386	38 X 6	228	4.09
1 520 403	40 X 3	120	2.15
1 520 405	40 X 5	200	3.59
1 520 406	40 X 6	240	4.3
1 520 4010	40 X 10	400	7.17
1 520 504	50 X 4	200	3.59
1 520 505	50 X 5	250	4.48
1 520 506	50 X 6	300	5.38
1 520 508	50 X 8	400	7.17
1 520 5010	50 X 10	500	8.96
1 520 605	60 X 5	300	5.38
1 520 6010	60 X 10	600	10.75
1 520 755	75 X 5	375	6.72
1 520 756	75 X 6	450	8.07
1 520 805	80 X 5	400	7.17
1 520 806	80 X 6	480	8.6
1 520 808	80 X 8	640	11.47
1 520 8010	80 X 10	800	14.336
1 520 1004	100 X 4	400	7.17
1 520 1005	100 X 5	500	8.96
1 520 1006	100 X 6	600	10.75
1 520 1010	100 X 10	1000	17.92
1 520 1012	100 X 12	1200	21.504

**MATERIAL: PURE COPPER AS PER BS EN 13601
FOR TINNED, USE CODE: 1 521**

CONDUCTOR TAPE CONDUCTORS

BARE EARTHING COPPER TAPE



Code No.	Conductor Size (mm)	Cross - Section Area (sqmm)	Coil Size (Mtr)	Weight (Kg.)
1 510 1215	12.5*1.5	18.75	100	16.8
1 510 123	12.5 * 3	37.5	100	33.6
1 510 2015	20 * 1.5	30	100	26.88
1 510 203	20 * 3	60	100	53.76
1 510 2515	25 * 1.5	37.5	100	33.6
1 510 253	25 * 3	75	50	33.6
1 510 254	25 * 4	100	50	44.8
1 510 256	25 * 6	150	40	53.76
1 510 302	30 * 2	60	50	26.88
1 510 303	30 * 3	90	50	40.32
1 510 304	30 * 4	120	40	43
1 510 305	30 * 5	150	40	53.76
1 510 313	31 * 3	93	50	41.66
1 510 316	31 * 6	186	30	50
1 510 383	38 * 3	114	50	51.07
1 510 385	38 * 5	190	30	51.07
1 510 386	38 * 6	228	25	51.07
1 510 403	40 * 3	120	40	43
1 510 404	40 * 4	160	30	43
1 510 405	40 * 5	200	25	44.8
1 510 406	40 * 6	240	25	53.76
1 510 503	50 * 3	150	40	53.76
1 510 504	50 * 4	200	30	53.76
1 510 505	50 * 5	250	20	44.8
1 510 506	50 * 6	300	20	53.76
1 510 508	50 * 8	400	15	53.76

**MATERIAL: PURE COPPER C11000 TO BS EN 13601
FOR TINNED COPPER, USE CODE 1 511**

BARE SS TAPE



Code No.	Conductor Size (mm)	Cross - Section Area (sqmm)	Coil Size (Mtr)	Weight (Kg.)
5 510 203	20 X 3	60	100	48
5 510 253	25 X 3	75	50	30
5 510 256	25 X 6	150	40	48
5 510 302	30 X 2	60	50	24
5 510 303	30 X 3	90	50	35.5
5 510 503	50 X 3	150	40	48
5 510 506	50 X 6	300	20	48

**MATERIAL: STAINLESS STEEL 316L
FOR GALVANIZED STEEL, USE CODE: 6 510**

CONDUCTOR TAPE CONDUCTORS

BARE EARTHING ALUMINIUM TAPE

Made from High Conductivity Aluminium Grade 6063. Annealed Material is used to provide ease of Installation.



Code No.	Conductor Size (mm)	Cross - Section Area (sqmm)	Coil Size (Mtr)	Weight (Kg.)
10 510 1215	12.5 x 1.5	18.75	50	2.50
10 510 192	19 X 2	38	50	5.00
10 510 201	20 X 1	20	50	2.50
10 510 203	20 X 3	60	50	8.50
10 510 253	25 X 3	75	50	10.50
10 510 254	25 X 4	100	50	14.00
10 510 256	25 X 6	150	50	21.00
10 510 303	30 X 3	90	50	12.50
10 510 403	40 X 3	120	50	17.00
10 510 406	40 X 6	240	50	34.00
10 510 503	50 X 3	150	50	21.00
10 510 504	50 X 4	200	50	28.00
10 510 506	50 X 6	300	50	42.50
10 510 508	50 X 8	400	50	56.50
10 510 603	60 X 3	180	50	25.50
10 510 604	60 X 4	240	50	34.00
10 510 606	60 X 6	360	50	51.00
10 510 806	80 X 6	480	50	68.00

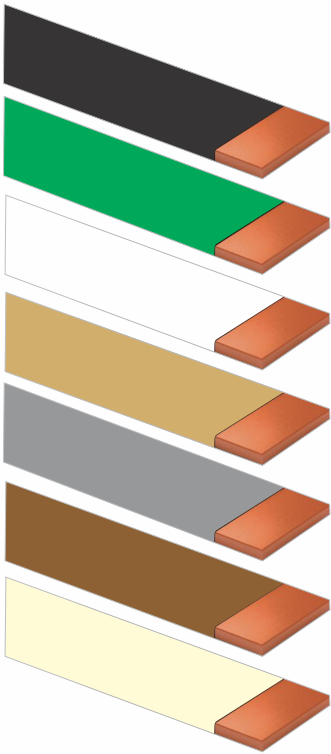
MATERIAL: ALUMINIUM

ALUMINIUM STANDARD CONDUCTOR


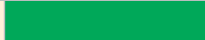


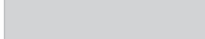

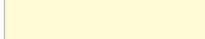





Code No.	Size	Length In Meters	Weight / Length (kgs)
10 520 253	25 X 3	4	0.84
10 520 303	30 X 3	4	1.00
10 520 256	25 X 6	4	1.68
10 520 406	40 X 6	4	2.68
10 520 506	50 X 6	4	3.4

PVC COVERED EARTHING COPPER TAPE

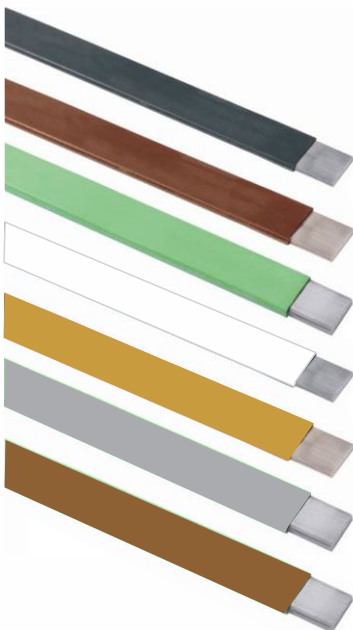


Terowell pvc covered tapes are highly used wherein the reduction of a the visual impact of lightning conductor is necessary. These conductors are available in many colours that majorly match all structural materials. The pvc used are uv-stabilized and used in both flat as well as round conductors. Terowell pvc tapes provide a uniform thickness of the pvc all over the conductor of 1mm.


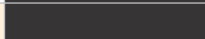


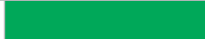

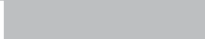

Code No.	Colour	Representation	Size (mm)	Coil Size (mm)	Weight / Coil (kgs)
9 512 253 BL	BLACK		25 X 3	25	19.5
9 512 253 GR	GREEN		25 X 3	25	19.5
9 512 253 WH	WHITE		25 X 3	25	19.5
9 512 253 ST	STONE		25 X 3	25	19.5
9 512 253 GY	GREY		25 X 3	25	19.5
9 512 253 BR	BROWN		25 X 3	25	19.5
9 512 253 CR	CREAM		25 X 3	25	19.5
9 512 256 GR	GREEN		25 X 6	20	30.6
9 512 503 GR	GREEN		50 X 3	20	30.6
9 512 506 GR	GREEN		50 X 6	20	59.2

**MATERIAL: PURE COPPER C11000 TO BS EN 13601
FOR TINNED PVC, USE CODE 9 513**

PVC COVERED ALUMINIUM TAPE



Terowell pvc covered tapes are highly used wherein the reduction of a the visual impact of lightning conductor is necessary. These conductors are available in many colours that majorly match all structural materials. The pvc used are uv-stabilized and used in both flat as well as round conductors. Terowell pvc tapes provide a uniform thickness of the pvc all over the conductor of 1mm.

Code No.	Colour	Representation	Size (mm)	Coil Size (mm)	Weight / Coil (kgs)
9 514 1215 BL	BLACK		12 X 1.5	50	4.5
9 514 203 BL	BLACK		20 X 3	50	12.5
9 514 253 WH	WHITE		25 X 3	50	15
9 514 253 BL	BLACK		25 X 3	50	15
9 514 253 GR	GREEN		25 X 3	50	15
9 514 253 ST	STONE		25 X 3	50	15
9 514 253 GY	GREY		25 X 3	50	15
9 514 253 BR	BROWN		25 X 3	50	15

MATERIAL: ALUMINIUM 19501

CONDUCTOR CIRCULAR CONDUCTORS

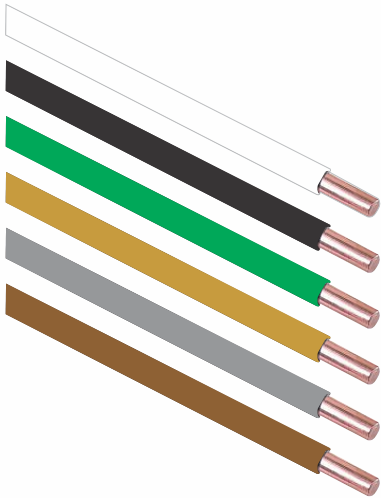
BARE COPPER CIRCULAR CONDUCTOR



Code No.	Conductor Size (mm)	Cross - Section Area (sqmm)	Coil Size (Mtr)	Weight (Kg.)
1 150 008	8	50	50	22
1 150 095	9.5	70	50	32.5
1 150 010	10	78	50	35
1 150 011	11	95	50	42.5
1 150 125	12.5	120	50	54
1 150 014	14	150	30	40.8
1 150 155	15.5	185	20	33.4
1 150 175	17.5	240	20	43.2

**MATERIAL: PURE COPPER C11000 TO BSEN 13601
FOR TINNED , USE CODE 1 151**

PVC COVERED COPPER CIRCULAR CONDUCTOR



Code No.	Colour	Representation	Conductor Dia (mm)	Cross Section Area (mm ²)	Coil Size (Mtr)	Weight / Coil (kgs)
9 150 008 WH	WHITE		8	50	50	6
9 150 008 BL	BLACK		8	50	50	6
9 150 008 GR	GREEN		8	50	50	6
9 150 008 ST	STONE		8	50	50	6
9 150 008 GR	GREY		8	50	50	6
9 150 008 BR	BROWN		8	50	50	6

**MATERIAL: PURE COPPER C11000 TO BSEN 13601
FOR TINNED , USE CODE 9 151**

BARE ALUMINIUM CIRCULAR CONDUCTOR

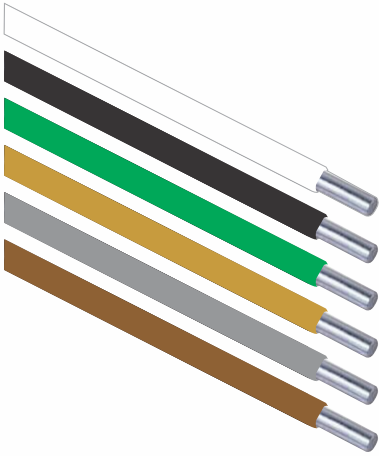


Code No.	Conductor Dia (mm)	Cross Section Area (mm ²)	Coil Size (Mtr)	Weight / Coil (kgs)
10 152 008	8	50	50	6
10 152 010	10	78	50	9

MATERIAL: ALUMINIUM

CONDUCTOR CIRCULAR CONDUCTORS

PVC COVERED ALUMINIUM CIRCULAR CONDUCTOR



Code No.	Colour	Representation	Conductor Dia (mm)	Cross Section Area (mm ²)	Coil Size (Mtr)	Weight / Coil (kgs)
10 152 008 WH	WHITE		8	50	50	6
10 152 008 BL	BLACK		8	50	50	6
10 152 008 GR	GREEN		8	50	50	6
10 152 008 ST	STONE		8	50	50	6
10 152 008 GR	GREY		8	50	50	6
10 152 008 BR	BROWN		8	50	50	6

MATERIAL: ALUMINIUM

STRANDED COPPER CONDUCTOR



Code No.	Conductor Size (mm)	Cross - Section Area (sqmm)	Coil Size (Mtr)	Weight (Kg.)
1 605 006	3.12	6	7 X 1.04	0.05
1 605 010	4.05	10	7 X 1.35	0.09
1 605 016	5.1	16	7 X 1.7	0.15
1 605 025	6.42	25	7X2.14	0.23
1 605 035	7.56	35	7X2.52	0.32
1 605 050	8.9	50	19X1.78	0.43
1 605 070	10.7	70	19X2.14	0.62
1 605 095	12.6	95	19X2.52	0.86
1 605 120	14.21	120	37X2.03	1.09
1 605 150	15.75	150	37X2.25	1.33
1 605 185	17.64	185	37X2.52	1.67
1 605 240	20.25	240	61X2.25	2.20
1 605 300	22.68	300	61X2.52	2.76
1 605 400	22.65	400	61X2.85	3.53

**MATERIAL: PURE COPPER SOFT DRAWN
FOR TINNED, USE CODE: 1 606
FOR STAINLESS STEEL, USE CODE: 5 605**

LIGHTNING AIR ROD



Air terminal rods are made of either pure copper material or pure aluminium. Also available with tinned finish with copper rod for protecting the rod from oxidising. These are used along with TEROWELL base Multipoints and rod to tape coupling and side mounted brackets for better results. The air rods are an important part of air termination network of a lightning protection system. The rods come with threading on both sides for connection and also pointed on one end. Locknuts are also provided with the rods to enable a strong hold with the conductors

Code No.	Thread Size	Length	Thread Length	Weight (Kg.)
1 160 160	M16 : 5/8"	300	40	0.54
1 160 161	M16 : 5/8"	500	40	0.89
1 160 162	M16 : 5/8"	1000	40	1.79
1 160 163	M16 : 5/8"	1200	40	2.14
1 160 164	M16 : 5/8"	1500	40	2.68
1 160 165	M16 : 5/8"	2000	40	3.6
1 160 166	M16 : 5/8"	3000	40	5.4
1 160 200	M20 : 3/4"	300	40	0.84
1 160 201	M20 : 3/4"	500	40	1.4
1 160 202	M20 : 3/4"	1000	40	2.8
1 160 203	M20 : 3/4"	1200	40	3.35
1 160 204	M20 : 3/4"	1500	40	4.2
1 160 205	M20 : 3/4"	2000	40	5.6
1 160 206	M20 : 3/4"	3000	40	8.4

MATERIAL: COPPER

**FOR TINNED COPPER, USE CODE: 1 161
FOR ALUMINIUM, USE CODE: 10 160**

MULTIPLE POINT

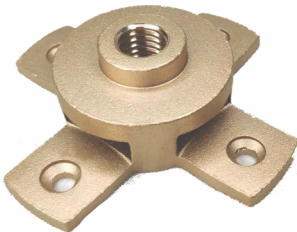


Used in Connection with Air Copper Rods

Code No.	Rod Dia	Number Of Multipoints	Weight / Length (kgs)
1 162 160	M16 : 5/8"	3	0.3
1 162 161	M16 : 5/8"	5	0.45
1 162 200	M20 : 3/4"	3	0.32
1 162 201	M20 : 3/4"	5	0.45

MATERIAL: PURE COPPER FOR GUNMETAL BASE, USE CODE: 2 162

AIR ROD SUPPORT



These are used to support the air rods on flat roof surfaces

Code No.	Conductor Size	Rod Thread Size	Weight / Length (kgs)
2417 160	25 X 3	M16	0.32
2417 200	25 X 3	M20	0.4

MATERIAL: GUNMETAL FOR BRASS, USE PRODUCT CODE: 3 417
FOR ALUMINIUM USE PRODUCT CODE 10 417

BRASS NUT



Code No.	Rod Dia
3 240 160	M16
3 240 200	M20

MATERIAL: BRASS