

Conductors

By far the largest and most important component of any earthing or structural lightning protection system is the actual conductor.

Furse offer a comprehensive range of copper and aluminium conductors in each of the main world standard formats, i.e. flat tape, solid circular and stranded.

Conductor colour chart

The choice of a lightning protection conductor is usually governed by its aesthetic impact on the structure to be protected. For many people the term lightning conductor conjures up an image of a bright green strip running down the spire of a church. This would clearly be unacceptable to the owner / architect of a modern structure.

In order to reduce the impact of an external system Furse offer a range of UV stabilised PVC covered tapes and solid circular conductors in colours chosen to match common building materials.

Black	18B29*	
Green	BS 6746C	
Grey	00A07*	
Stone	08B23*	
White	10B15*	
Brown	06C39*	

* PVC colours to BS 5252

Copper conductor ratings

For below ground earthing applications Furse produce a large range of bare copper, tape and stranded conductors thus offering the designer of the system the correctly rated conductor without the need to oversize.

The following conductor ratings are based upon the recommendations of BS 7430 with an initial conductor temperature of 30°C and a maximum temperature of 250°C.

Conductor size	C.S.A. (mm ²)	kA for 1 sec	kA for 3 sec	Conductor size	C.S.A. (mm ²)	kA for 1 sec	kA for 3 sec
12.5 x 1.5mm	18.75	3.3	1.9	31 x 6mm	186	32.7	18.9
12.5 x 3mm	37.5	6.6	3.8	38 x 3mm	114	20.1	11.6
20 x 1.5mm	30	5.3	3.0	38 x 5mm	190	33.4	19.3
20 x 3mm	60	10.6	6.1	38 x 6mm	228	40.1	23.2
25 x 1.5mm	37.5	6.6	3.8	40 x 3mm	120	21.1	12.2
25 x 3mm	75	13.2	7.6	40 x 4mm	160	28.2	16.3
25 x 4mm	100	17.6	10.2	40 x 5mm	200	35.2	20.3
25 x 6mm	150	26.4	15.2	40 x 6mm	240	42.2	24.4
30 x 2mm	60	10.6	6.1	40 x 6.3mm	252	44.4	25.6
30 x 3mm	90	15.8	9.1	50 x 3mm	150	26.4	15.2
30 x 4mm	120	21.1	12.2	50 x 4mm	200	35.2	20.3
30 x 5mm	150	26.4	15.2	50 x 5mm	250	44.0	25.4
31 x 3mm	93	16.4	9.5	50 x 6mm	300	52.8	30.5
31.5 x 4mm	126	22.2	12.8	50 x 6.3mm	315	55.4	32.0

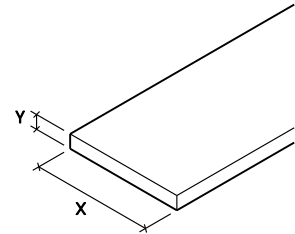
Bare copper tape

Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.	Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.
12.5 x 1.5mm	0.17kg	100m	TC005	31 x 6mm	1.65kg	30m	TC050
12.5 x 3mm	0.33kg	100m	TC010	38 x 3mm	1.01kg	50m	TC055
20 x 1.5mm	0.27kg	100m	TC015	38 x 5mm	1.69kg	30m	TC060-FU
20 x 3mm	0.53kg	50m*	TC020	38 x 6mm	2.02kg	25m	TC065
25 x 1.5mm	0.33kg	100m	TC025	40 x 3mm	1.06kg	40m	TC067
25 x 3mm	0.67kg	25m*	TC030	40 x 4mm	1.42kg	30m	TC066
25 x 4mm	0.89kg	50m	TC035	40 x 5mm	1.78kg	25m	TC071
25 x 6mm	1.33kg	40m	TC040	40 x 6mm	2.16kg	25m	TC068
30 x 2mm	0.53kg	50m	TC039	40 x 6.3mm	2.24kg	25m	TC069
30 x 3mm	0.80kg	50m	TC042	50 x 3mm	1.33kg	40m	TC070
30 x 4mm	1.07kg	40m	TC044	50 x 4mm	1.78kg	30m	TC075
30 x 5mm	1.33kg	40m	TC043	50 x 5mm	2.22kg	20m	TC078
31 x 3mm	0.83kg	50m	TC045	50 x 6mm	2.68kg	20m	TC080
31.5 x 4mm	1.13kg	40m	TC048	50 x 6.3mm	2.80kg	20m	TC082

* 20 x 3mm also available in 100m coil size (TC020/100)
25 x 3mm also available in 50m coil size (TC030/50).



High conductivity copper tape to BS EN 13601 (formerly BS 1432).



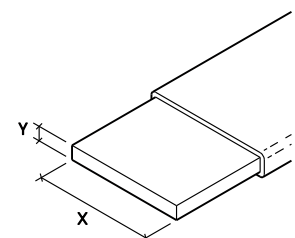
PVC covered copper tape

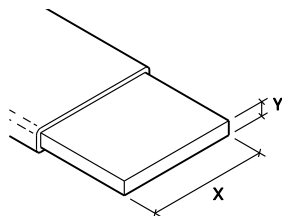
Conductor size (X x Y)	Weight per metre	Standard coil size	Colour range					
			Black 18B29	Green *	Grey 00A07	Stone 08B23	White 10B15	Brown 06C39
12.5 x 1.5mm	0.21kg	100m	TC100	-	-	-	-	-
25 x 3mm	0.77kg	25m	TC105-FU	TC110	TC115-FU	TC120-FU	TC125-FU	TC130
25 x 3mm	0.77kg	50m	TC105/50	TC110/50	TC115/50	TC120/50	TC125/50	TC130/50
25 x 6mm	1.53kg	40m	-	TC140-FU	-	-	-	-
50 x 6mm	2.95kg	20m	-	TC145	-	-	-	-

Other colours are available to order. Contact Furse for details. Furse takes every precaution to ensure the UV stability of its PVC coverings, but as with all plastics, colour variation will occur over time.



High conductivity copper tape to BS EN 13601 (formerly BS 1432).
PVC colours to BS 5252. * Green to BS 6746C.





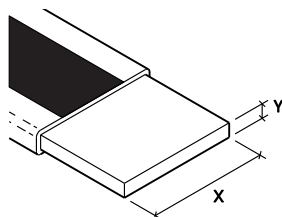
LSOH covered copper tape

Conductor size (X x Y)	Colour	Weight per metre	Standard coil size	Part No.
25 x 3mm	Green	0.77kg	25m*	TC910
25 x 6mm	Green	1.53kg	40m	TC940
50 x 6mm	Green	2.95kg	20m	TC980

* 25 x 3mm also available in 50m coil size (TC910/50).



High conductivity copper tape to BS EN 13601 (formerly BS 1432).
PVC colours to BS 6746C.



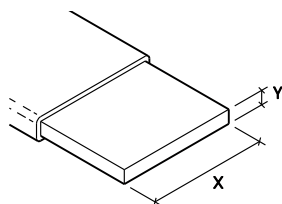
Green & yellow PVC insulated copper tape

Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.
25 x 3mm	0.79kg	25m*	TC111-FU

* Also available in 50m coil size (TC111/50).



High conductivity copper tape to BS EN 13601 (formerly BS 1432).
PVC colours to BS 6746C.



Lead covered copper tape

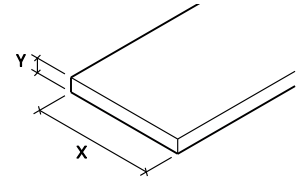
Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.
25 x 3mm	2.56kg	25m	TC330



High conductivity copper tape to BS EN 13601 (formerly BS 1432).

Tinned copper tape

Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.
12.5 x 1.5mm	0.17kg	100m	TC225-FU
25 x 3mm	0.67kg	50m	TC230
30 x 2mm	0.53kg	50m	TC239
25 x 6mm	1.33kg	40m	TC240
31 x 3mm	0.83kg	50m	TC245
38 x 5mm	1.69kg	30m	TC260
50 x 6mm	2.68kg	20m	TC280

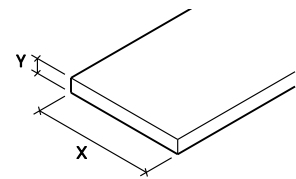


High conductivity copper tape to BS EN 13601 (formerly BS 1432).

Hard drawn copper tape

Bare hard drawn bar

Conductor size (X x Y)	Weight per metre	Part No.
25 x 3mm	0.67kg	BA205*
25 x 6mm	1.33kg	BA210
38 x 6mm	2.03kg	BA225
50 x 6mm	2.67kg	BA230*
50 x 10mm	4.45kg	BA235
75 x 6mm	4.00kg	BA240
100 x 6mm	5.38kg	BA250-FU



Tinned hard drawn bar

Conductor size (X x Y)	Weight per metre	Part No.
50 x 6mm	2.67kg	BA231*

Random lengths of 4 metres except * supplied in random lengths of 3 metres.

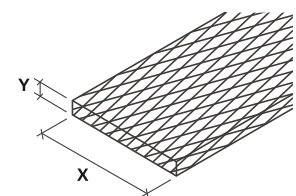


Hard drawn high conductivity copper bar to BS EN 12163.

Flexible copper braid

Bare braid

Overall nominal size (X x Y)	Size	Weight per metre	Part No.
12 x 1mm	6mm ²	0.055kg	BD020
15 x 1.5mm	10mm ²	0.096kg	BD025
19 x 2.5mm	16mm ²	0.16kg	BD026
32 x 6mm	70mm ²	0.63kg	BD027
25 x 3.5mm	35mm ²	0.34kg	BD030



Tinned braid

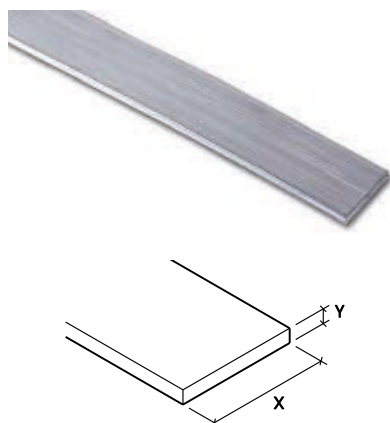
Overall nominal size (X x Y)	Size	Weight per metre	Part No.
25 x 3.5mm	35mm ²	0.34kg	BD035

Suitable for earth bonding. Also supplied as standard pre-cut and drilled bonds (see page 86).

Other sizes and types of braid can be made to order. Please telephone for details.



High conductivity copper wire to BS 4109-C101.



Bare aluminium tape

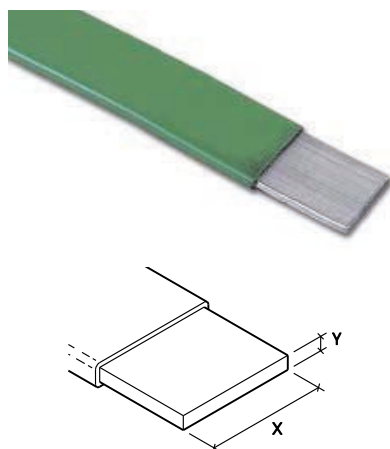
Conductor size (X x Y)	Weight per metre	Standard coil size	Part No.
12.5 x 1.5mm	0.05kg	50m	TA005
20 x 3mm	0.17kg	50m	TA020
25 x 3mm	0.21kg	50m	TA030
30 x 3mm	0.25kg	50m	TA042
25 x 6mm	0.42kg	50m	TA040
40 x 6mm	0.67kg	50m	TA068
50 x 6mm	0.85kg	50m	TA080



Aluminium tape to BS 2898-1350.

PVC covered aluminium tape

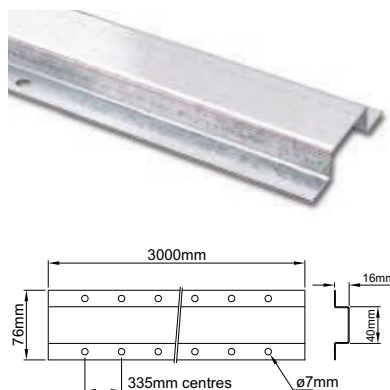
Conductor size (X x Y)	Weight per metre	Standard coil size	Colour range					
			Black 18B29	Green *	Grey 00A07	Stone 08B23	White 10B15	Brown 06C39
12.5 x 1.5mm	0.09kg	50m	TA100	-	-	-	-	-
20 x 3mm	0.25kg	50m	TA104	-	-	-	-	-
25 x 3mm	0.30kg	50m	TA105	TA110	TA115	TA120	TA125	TA130



Other colours are available to order. Contact Furse for details. Furse takes every precaution to ensure the UV stability of its PVC coverings, but as with all plastics, colour variation will occur over time.



Aluminium tape to BS 2898-1350.
PVC colours to BS 5252. * Green to BS 6746C.



Anti-vandal down conductor guard

Length	Weight each	Part No.
3000mm	2.90kg	AV005

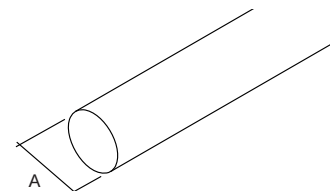


Fix using round head wood screws (Part no. **SW405**) and wall plugs (Part no. **PS305**) – see Accessories, page 63.

Suitable for use with 25 x 3mm tape.

Bare solid circular

Conductor material	Diameter (A)	Cross-sectional area	Weight per metre	Standard coil size	Part No.
Copper	8mm	50.27mm ²	0.44kg	50m	CD035
Aluminium	8mm	50.27mm ²	0.12kg	50m	CD080



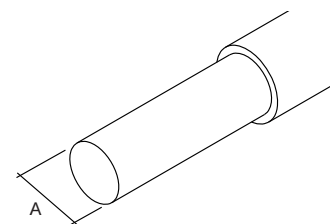
Copper conductor to BS EN 13601 (formerly BS 1433).
Aluminium conductor to BS 2898-1350.

PVC covered solid circular

Conductor material	Diameter (A)	Cross-sectional area	Weight per metre	Standard coil size	Colour range				
					Black 18B29	Grey 00A07	Stone 08B23	White 10B15	Brown 06C39
Copper	8mm	50.27mm ²	0.49kg	50m	CD036	CD038	CD039	CD040	CD041
Aluminium	8mm	50.27mm ²	0.18kg	50m	CD081	CD083	CD084	CD085	CD086

Other colours are available to order.

Contact Furse for details. Furse takes every precaution to ensure the UV stability of its PVC coverings, but as with all plastics, colour variation will occur over time.



Copper conductor to BS EN 13601 (formerly BS 1433).
Aluminium conductor to BS 2898-1350.
PVC colours to BS 5252.



Bare stranded copper cable

Cross-sectional area	Stranding No./mm Ø	Weight per metre	Part No.	Cross-sectional area	Stranding No./mm Ø	Weight per metre	Part No.
6mm ²	7/1.04	0.05kg	CB006	120mm ²	37/2.03	1.09kg	CB120
16mm ²	7/1.70	0.15kg	CB016	150mm ²	37/2.25	1.33kg	CB150-FU
25mm ²	7/2.14	0.23kg	CB025	185mm ²	37/2.52	1.67kg	CB185
35mm ²	7/2.52	0.32kg	CB035	240mm ²	61/2.25	2.20kg	CB240
50mm ²	19/1.78	0.43kg	CB050-FU	300mm ²	61/2.52	2.76kg	CB300-FU
70mm ²	19/2.14	0.62kg	CB070	400mm ²	61/2.85	3.53kg	CB400-FU
95mm ²	19/2.52	0.86kg	CB095				



Soft drawn stranded copper cable to BS EN 60228

Cross-sectional area	Stranding No./mm Ø	Weight per metre	Part No.
70mm ²	7/3.55	0.64kg	CB071



Hard drawn stranded copper cable to BS 7884



Green & yellow PVC insulated stranded copper cable

Cross-sectional area	Stranding No./mm Ø	Weight per metre	Part No.	Cross-sectional area	Stranding No./mm Ø	Weight per metre	Part No.
16mm ²	7/1.70	0.19kg	CC016	120mm ²	37/2.03	1.16kg	CC120-FU
25mm ²	7/2.14	0.29kg	CC025	150mm ²	37/2.25	1.54kg	CC150-FU
35mm ²	7/2.52	0.41kg	CC035	185mm ²	37/2.52	2.01kg	CC185
50mm ²	19/1.78	0.53kg	CC050	240mm ²	61/2.25	2.49kg	CC240
70mm ²	19/2.14	0.73kg	CC070	300mm ²	61/2.52	3.05kg	CC300
95mm ²	19/2.52	1.00kg	CC095	400mm ²	61/2.85	3.90kg	CC400-FU



PVC covered soft drawn stranded copper cable to BS 6004.
PVC colours to BS 6746C.



Bimetallic cable

AWG	Cross-sectional area	Nominal diameter	Stranding No./AWG	Weight per metre	Part No.
1/0	50mm ²	9.96mm	3/5	0.41kg	BC001
1	40mm ²	8.86mm	3/6	0.33kg	BC002
2	35mm ²	7.9mm	3/7	0.26kg	BC003
3	25mm ²	7.04mm	3/8	0.21kg	BC004
4	20mm ²	6.27mm	3/9	0.16kg	BC005
5	16mm ²	5.59mm	3/10	0.13kg	BC006
6	10mm ²	4.42mm	3/12	0.08kg	BC007
300	150mm ²	15.6mm	7/4	1.22kg	BC008
4/0	120mm ²	13.9mm	7/5	0.97kg	BC009
3/0	95mm ²	12.3mm	7/6	0.77kg	BC010
2/0	70mm ²	11mm	7/7	0.61kg	BC011
1/0	50mm ²	9.78mm	7/8	0.48kg	BC012
1	40mm ²	8.71mm	7/9	0.38kg	BC013
2	35mm ²	7.77mm	7/10	0.30kg	BC014



Copper/steel cable to ASTM B228.

40% conductivity supplied as standard. Other sizes also available. Contact Furse for details.