



## About Us

Copper Braid Products is the copper braid division of Tranect Ltd. We are an ISO9001:2008 accredited manufacturing and distribution company with a reputation for customer service, quality and price and we are passionate about copper braid in all its forms and applications.

Our highly qualified engineers have many years of experience in the design of electrical equipment and are able to provide technical advice and assistance for your application including temperature rise calculations, voltage drop and vibration withstand.

Our background in the railway industry means that we have many years of experience supplying safety critical products for arduous applications and we are approved to Railway Group Standard GM RT 2450 for the supply of Safety Critical products.

## Product Range Overview

### Round Braid Page 06-03



- Flexible Power Connections
- Earthing Systems
- Alignment Solutions

### Flat Braid Page 06-04



- Lightning Protection
- High Vibration Environments
- LV to HV ranges

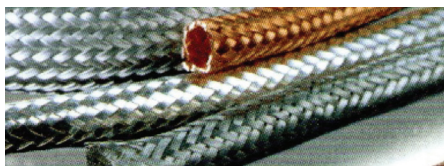
### Rope Braid Page 06-05



All Standard braids  
are compliant to:



### Sleeving Braid Page 06-06



### Mesh Braid Page 06-06



### Assemblies Page 06-07



- Cable Screening from EMC, EMF and RF Interference
- Earth Continuity
- Protection against abrasion in vibration or movement environments
- Cable Jointing
- Cable armour repair
- Flexible Power Connections
- Wide Current range
- Earthing Systems
- Alignment & Vibration Solutions

## A Guide to Copper Braid

Copper braid is an incredibly versatile material which can lend itself to a wide variety of applications. We have a comprehensive package of products and standard items but we can also supply non standard products on a short lead time and competitive price. Please contact us if you have specific requirements or cannot find the product you need in our catalogue or on our website [www.copperbraid.co.uk](http://www.copperbraid.co.uk)

### Commonly used terms in copper braid design and application:

#### Construction

This is the term used to describe how the braid is put together - for more information see below 'Designing Braid'.

#### Flexibility

The flexibility of braids can be influenced by a number of factors but chiefly the diameter of the wire used is a predominant factor - the finer the wires used typically the more flexible a braid will be.

#### Cross sectional area

The material conductive content of the cumulative area of wires used.

### Conductor Current Ratings Guide

To help you choose the right conductor cross-section depending on the current rating, we have prepared a table with some benchmark figures for you. For more specific information please consult our highly qualified engineers who have many years of experience in the design of electrical equipment and are able to provide technical advice on your application including temperature rise calculations, voltage drop calculations and vibration withstand capability.

Nominal Cross Sectional Area	Max. Permitted Current Rating
mm2	Approx. A*
0.1	5
0.14	6
0.2	7
0.25	9
0.35	10
0.5	12.5
0.75	15
1	18
1.5	21
2.5	30
4	45
5.25	59
6	65
8	72
10	86
16	137

Nominal Cross Sectional Area	Max. Permitted Current Rating
mm2	Approx. A*
25	149
35	224
50	287
70	345
100	456
120	504
150	627
185	570
240	670
300	780
400	950
500	1350

\*Based on plain Cu-ETP Measured at 35° room temperature and Max. permitted conductor temperature of 90°

### Designing Braid

The construction of Copper braid is usually written as: **XX / XX / XX** – for example:

**48 / 30 / 0.15**, where:

**48** = the number of carriers

**30** = the number of wires per carrier

**0.15** = the diameter of each wire in mm

The **cross sectional area** (CSA) of a copper braid can be calculated from this information:

$$\text{No of Carriers} \times \text{No of Wires} \times \pi r^2 \text{ (From Wire Dia)}$$

All Standard braids are compliant to:



### Braid Finishes

Our wide range of copper braid products are available in the following copper wire finishes:

- Bare copper / Plain copper / Red Copper
- Electro tin plated copper
- Electro nickel plated copper
- 99.99% pure Silver electro plated copper
- Enamel coated, which insulates each wire

**Contact Us**  
**sales@copperbraid.co.uk**  
**+44 (0) 151 548 7040**

# Round Braid

## Description

Our round, stranded copper braids stand out by being highly twist-free and having a compact cutting surface, which is important for your problem-free further processing.



## Application

Round copper braid is typically used: in welding, power equipment and for electrical components such as switches and thyristors as well as to conduct welding current (welding tools, robots and lines). Round braid is highly suited to applications where vibration absorption and flexibility are fundamental to the operating characteristics of the component.

## Specification

All Standard braids are compliant to:



This braid is produced from Cu-ETP copper wire according to EN 13602 giving it superb electrical characteristics. Standard finishes are both plain/red copper and electro tinned. Silver and Nickel plating options are available but may be subject to minimum order quantities.

## The Range

The table on the right shows our standard range from 2mm<sup>2</sup> through to 150mm<sup>2</sup> however we can supply from 0.5mm<sup>2</sup> to 300mm<sup>2</sup>. The standard wire diameter sizes available are 0.1mm, 0.15mm and 0.2mm - all design requests are welcome.

## How to Order

To order Round braid please specify 'RB' + 'Cross Sectional Area' + wire type and then specify the finish you require an example would be 'RB16-0.2 Tinned'. This enquiry can be completed either through our sales team on 0151 548 7040 or through our dedicated website [www.copperbraid.co.uk](http://www.copperbraid.co.uk)

Standard Round Copper Braid				
Part Code	Nominal area (mm <sup>2</sup> )	Diameter (approx. mm)	Wire Diameter (mm)	Amp Rating as per PO5-02
RB2-0.15	2	2	0.15	25
RB3-0.15	3	3	0.15	40
RB4-0.15	4	3	0.15	40
RB5-0.15	5	3.8	0.15	44
RB6-0.15	6	4	0.15	55
RB8-0.15	8	4.5	0.15	70
RB10-0.2	10	5	0.2	85
RB16-0.2	16	6	0.2	120
RB20-0.2	20	6.5	0.2	127
RB25-0.2	25	8	0.2	150
RB30-0.2	30	9	0.2	170
RB50-0.2	50	11.3	0.2	250
RB75-0.2	75	13	0.2	300
RB95-0.2	95	15.5	0.2	360
RB100-0.2	100	16	0.2	378
RB120-0.2	120	17	0.2	420
RB150-0.2	150	19.5	0.2	480

# Flat Braid

## Description

Our most economical standard flat copper braids are made from 0.20 dia wire and are braided into a tube followed by a rolling process to flatten them. We also supply this format of braid constructed from 0.1mm and 0.05mm wire diameters for increased flexibility to match your applications needs.



## Application

Flat braid is highly suited to applications where vibration absorption and flexibility are fundamental to the operating characteristics of the component.

## Specification

This braid is produced from Cu-ETP copper wire according to EN 13602 giving it superb electrical characteristics. Standard finishes are both plain/red copper and electro tinned. Silver and Nickel plating options are available but may be subject to minimum order quantities.

## The Range

The table on the right shows our standard range from 2mm<sup>2</sup> through to 150mm<sup>2</sup> however we can supply from 0.5mm<sup>2</sup> to 500mm<sup>2</sup>. The standard wire diameter sizes available are 0.1mm, 0.15mm and 0.2mm - all design proposals are welcome.

## How to Order

To order Round braid please specify 'RB' + 'Cross Sectional Area' + wire type and then specify the finish you require an example would be 'RB16-0.2 Tinned'. This enquiry can be completed either through our sales team on 0151 548 7040 or through our dedicated website [www.copperbraid.co.uk](http://www.copperbraid.co.uk)

Standard Flat Copper Braid					
Part Code	Nominal area (mm <sup>2</sup> )	Width (approx. mm)	Thickness (approx. mm)	Wire Diameter	Amp Rating as per PO5-02
FB2-0.15	2	3	1	0.15	27
FB3-0.15	3	5	1.2	0.15	36
FB4-0.15	4	6	1	0.15	45
FB5-0.15	5	8	1	0.15	59
FB6-0.15	6	10	1	0.15	65
FB8-0.15	8	8	1.5	0.15	72
FB10-0.2	10	10	1.5	0.15	86
FB16-0.2	16	16	2	0.2	128
FB20-0.2	20	25	1.6	0.2	166
FB25-0.2	25	16	3	0.2	179
FB30-0.2	30	25	2.4	0.2	206
FB35-0.2	35	25	3	0.2	224
FB50-0.2	50	30	3.3	0.2	287
FB70-0.2	70	30	4.7	0.2	345
FB75-0.2	75	30	5	0.2	371
FB100-0.2	100	40	5	0.2	456
FB120-0.2	120	40	6	0.2	504
FB150-0.2	150	50	6	0.2	627



# Rope Braid

## Description

Our stranded round copper rope braids stand out by being highly twist-free and having a compact cutting surface, which is important for your problem-free further processing. Our round copper rope can be woven with a left or right hand twist.



## Application

Round, stranded copper flexible are used in welding and power equipment for electrical components such as switches and thyristors as well as to conduct welding current (welding tools, robots and lines). Round braid is highly suited to applications where vibration absorption and flexibility are fundamental to the operating characteristics of the component.

## Specification

All Standard braids are compliant to:



This braid is produced from Cu-Etp copper wire according to EN 13602 giving it superb electrical characteristics. Standard finishes are both plain/red copper and electro tinned. Silver and Nickel plating options are available but may be subject to minimum order quantities.

## The Range

The table on the right shows our standard range from 6mm<sup>2</sup> through to 150mm<sup>2</sup> however we can supply from 2mm<sup>2</sup> to 150 mm<sup>2</sup>. The standard wire diameter sizes available are 0.122mm, 0.15mm and 0.2mm - all design proposals are welcome.

Standard Rope Braid				
Part Code	Nominal area (mm <sup>2</sup> )	Diameter (approx. mm)	Wire Diameter (mm)	Amp Rating as per PO5-02
RP6-0.2	6	4.4	0.2	60
RP10-0.2	10	5.4	0.2	80
RP16-0.2	16	6.8	0.2	10
RP25-0.2	25	8.3	0.2	130
RP35-0.2	35	10.1	0.2	180
RP50-0.2	50	11.7	0.2	230
RP70-0.2	70	14	0.2	280
RP95-0.2	95	18	0.2	330
RP120-0.2	120	14	0.2	370
RP150-0.2	150	18	0.2	470

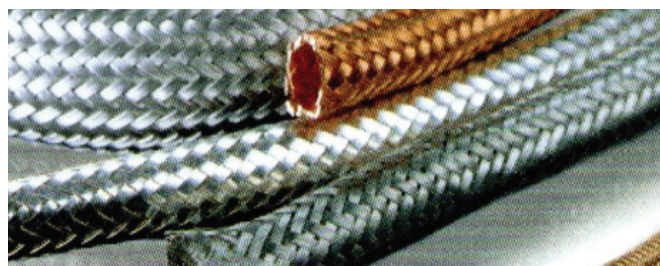
## How to Order

To order Round braid please specify 'RP' + 'Cross Sectional Area' + wire type and then specify the finish you require an example would be 'RB16-0.2 Tinned'. This enquiry can be completed either through our sales team on 0151 548 7040 or through our dedicated website [www.copperbraid.co.uk](http://www.copperbraid.co.uk)

# Shielding Braid

## Description

Supplied on a former our sleeving braid is designed for maximum EMC protection with 90 % optical coverage. Use in applications where RF protection is required from a shielding braid.



## Application

Designed to meet industry standard 90 or 95% optical coverage, copper shielding braid provides protection for sensitive cables from electromagnetic, electrostatic and radio frequency interference whilst providing earth continuity.

## Specification

This braid is produced from Cu-ETP copper wire according to EN 13602 giving it superb electrical characteristics. Standard finishes electro tinned. Nickel plating is available but may be subject to minimum order quantities. For Stainless Steel versions see the Stainless Steel Products section.

## The Range

The table on the right shows our standard range from a former OD of 4mm through to 30mm giving a potential diameter usage range of 3mm through to 36mm. The 90% optical coverage forms part of our standard range however 95% is available with a range capacity up to 40mm providing a usable range up to 60mm.

**NEW!** Shielding braid with polyester weave – This hybrid alternative provides good levels of screening and the abrasive resistance of polyester – for more details please e-mail the team at [sale@copperbraid.co.uk](mailto:sale@copperbraid.co.uk).

Shielding braid to 90% Optical Coverage				
Part Code	Former O/D (mm)	Minimum Diameter (mm)	Maximum Diameter (mm)	Roll Spring Guide
SH4.0	4	3	5	EPPA-034A
SH6.0	6	5	7	
SH10.0	10	7	12	
SH15.0	15	13	18	EPPA-034B
SH20.0	20	17	23	
SH25.0	25	22	28	EPPA-034C
SH30.0	30	27	36	

## Roll Springs

The EPPA-034 range is a standard Raychem part used to attach a shielding braid to the tape shield of a plastic cable when terminating or jointing. Larger sizes are available for attaching earth braids to lead sheathed cables.



Polyester / Copper  
Shielding Braid Hybrid



## Specification

Material: Fatigue Resistant Stainless Steel

**How to Order** - Simply Identify the diameter clearance level required and select the relevant product

Roll Spring - Stainless Steel			
Part Code	Usable Range Min (mm)	Usable Range Max (mm)	Strip Width (mm)
EPPA-034A	2	20	3
EPPA-034B	7	28	3
EPPA-034C	25	40	3

# Stocking Braid

## Description

Supplied in flat form our stocking braid can be pushed back to form a cylinder which will shrink back when pulled taught. Use this braid for maximum flexibility where shielding braid is required.



## Application

Capable of providing a degree of electro shielding stocking braid's primary function is to provide earth continuity over cable jointing. The braid is designed to allow it to be pushed back and expand to a workable diameter as shown in the table below. This allows it to be shaped to the cable system itself.

## Specification

All Standard braids are compliant to:



This braid is produced from Cu-ETP copper wire according to EN 13602 giving it superb electrical characteristics. Standard finish in electro tin plating.

## The Range

The table on the right shows our standard range from 6mm<sup>2</sup> through to 150mm<sup>2</sup>. This will provide a workable diameter range from 6mm through to 120mm in a variety of Amp capacities.

Standing Stocking Braid				
Part Code	Nominal Area (mm <sup>2</sup> )	Current Rating (A)	Minimum diameter (mm)	Maximum diameter (mm)
ST6-40	6	66	6	40
ST10-40	10	90	10	40
ST16-60	16	120	15	60
ST25-120	25	150	20	120
ST35-120	35	200	25	120
ST50-120	50	250	30	120
ST95-120	95	350	30	120
ST150-120	150	500	35	120

## How to Order

To order either braid simply select the appropriate size and then select the relevant part code.

# Knitted Copper

For repair work as cable screens. The screen density and coverage can be determined by the winding.



## The Range

### Flat knitted copper fabrics

- Consisting of 4, 6 or 8 wires 0.10 mm Ø up to a max. Width of 100 mm, mesh spacing approx. 5 mm.
- Standard widths 25 mm and 50 mm and supplied in 10 metre or 25 metre coils.

### Knitted copper fabric tubes, rolled

- Made of wire 0.10 mm and above up to a max. Width of 130 mm, close-mesh.

## How to Order

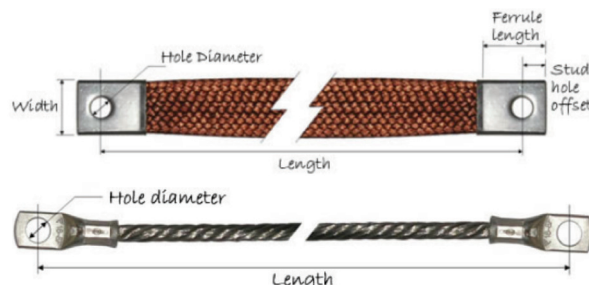
To order please contact our sales team on 0151 548 7040 or place an enquiry through [www.cooperbraid.co.uk](http://www.cooperbraid.co.uk)

# Copper Braid Components

Used in a wide array of applications copper braid components take on an essential role in safe guarding our immediate environment. Copper Braid Products as part of Tranect Ltd has combined its long standing performance in manufacturing with safety critical components with its braid supply capabilities to provide a cost effective range of standard earthing leads whilst set-up to rapidly respond to a customer's specific needs. The following two pages look at our range a capabilities for earthing straps and bonds in more detail.

## Earth Straps and Bonds

The range of highly flexible connectors and leads are commonly used in switch gear, building services, ATEX environments as well as a wide range of other industries. We can build to order and have the supply chain capabilities to deliver large quantities at the most cost effective level. Due to our cross over with the rail industry a wide range of coverings are also available. Ideally suited to dynamic or vibration applications our earth straps and bonds offer an excellent cost effective solution to both electrical and electro mechanical requirements. For Stainless Steel alternatives please see the stainless steel braid section.



## High Voltage copper braids

HV systems are second nature to our technical team and we have proudly been involved in a number of refurbishment projects and new build programmes alike. From Grid to stand alone power units and UPS. Copper braid busbars and Transformer braids provide an ideal solution in refurbishment projects due to their level of flexibility. The variance between new and old fittings can be far more easily accommodated than traditional solid copper bar forms.

## Busbar Braids

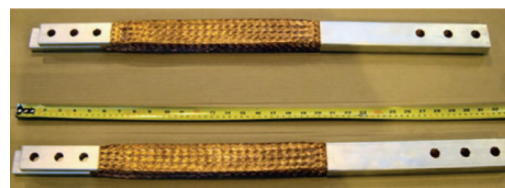
We supply high power copper braid connectors for busbar to transformers, busbars to busducts, busbars to gen sets, busbars to UPS systems, busbars to generators, busbars to isolators, busbars to switches, busbars to circuit breakers, busbars to fuses, busbars to ACBs, busbars to MCCBs and any other electrical connections within a power transmission system.



## Transformer Braids

We supply high current copper braid connectors for busbar to transformer connections and any other electrical connections within a power transmission system.

The picture to the right are part of a project for Enfield power station consisting of 48 copper braids. Each braid comprised 6 x 120 sq mm flat plain braid with silver plated ferrules. At one end the braid was split into 2 pairs of three braids and the lengths were adjusted to suit the angle of connection between the transformer and the busduct.



All Standard braids  
are compliant to:





# Earth Straps



Our highly flexible earthing connectors and earth leads, are commonly used in switchgear, building services and a wide range of industries. We offer competitive pricing and ex-stock or short lead time deliveries. Alternatively if you can't find what you are looking for please call 0151 548 7040 and our team will be happy to help.



## The Standard Range and How to Order



The table below identifies the Tranect standard range of earth straps supplied using our 0.2mm tinned wire braid in each class. To order one of these parts simply state the following 1-2-3-4 eg EST-10-100-M8 and then the pack size required. These parts are also available to buy online at [www.copperbraid.co.uk](http://www.copperbraid.co.uk)

1	2	3	4					
Part Code Prefix	Conductor Size	Length (L)	Stud Hole Size Range	Braid Nominal Width 'W'	Integral Ferrule Nominal dims	Stud Hole Off Set	Max Current Rating	Pack Sizes
EST	(MM <sup>2</sup> )	(MM)	(MM) Clearance	(mm)	(mm)	(mm)	(A)	(Pc's)
EST	10	100	M4,6,8	12.5	W18xL18xD2	Centralised	85	5,10,25
EST	10	150	M4,6,8	12.5	W18xL18xD2	Centralised	85	5,10,25
EST	10	200	M4,6,8	12.5	W18xL18xD2	Centralised	85	5,10,25
EST	16	150	M4,6,8,10,12	20	W23xL25xD2.5	Centralised	120	5,10,25
EST	16	200	M4,6,8,10,12	20	W23xL25xD2.5	Centralised	120	5,10,25
EST	16	250	M4,6,8,10,12	20	W23xL25xD2.5	Centralised	120	5,10,25
EST	25	200	M4,6,8,10,12	23	W23xL25xD2.5	Centralised	150	5,10,25
EST	25	300	M4,6,8,10,12	23	W23xL25xD2.5	Centralised	150	5,10,25
EST	25	400	M4,6,8,10,12	23	W23xL25xD2.5	Centralised	150	5,10,25
EST	35	200	M4,6,8,10,12	25	W23xL25xD2.5	Centralised	195	5,10,25
EST	35	300	M4,6,8,10,12	25	W23xL25xD2.5	Centralised	195	5,10,25
EST	35	400	M4,6,8,10,12	25	W23xL25xD2.5	Centralised	195	5,10,25



## Built For you

We have kept our standard range as small as possible to ensure we offer the most cost effective solution and because we appreciate that one size doesn't fit all by following our easy to use Earth Strap Enquiry form available at [www.copperbraid.co.uk](http://www.copperbraid.co.uk) or simply by calling us on 0151 548 7040 we are happy to talk through your specific requirements and design appropriately. You can be sure of the most competitive prices as most component parts are stock items and our dedicated production unit will ensure a short lead time.



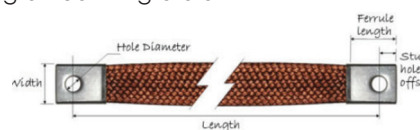
## Fork Lift Trucks

Do you use DSEAR / ATEX regulations? Prevent electrical discharges by fitting an earthing braid underneath your fork lift truck. If so we can build to suit your requirements.



## Sleeving

We stock a range of heat shrink sleeving products be it adhesive lined or zero halogen we can fit your required component to suit. We can also produce straps in a variety of coatings dependent upon your requirements.



Email: [sales@tranect.co.uk](mailto:sales@tranect.co.uk)

0151 548 7040 Web: [www.tranect.co.uk](http://www.tranect.co.uk)

VAT No: 768195383 Company No: 04142556



# Earth Bonds



Our highly flexible earthing connectors and earth leads, are commonly used in building services and a wide range of other industries. We offer competitive pricing and ex-stock or short lead time deliveries. Alternatively if you can't find what you are looking for please call 0151 548 7040 and our team will be happy to help.

## The Standard Range and How to Order

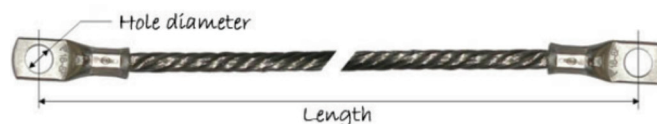
The table below identifies the Tranect standard range of earth bonds supplied using our standard tinned wire braid in each class. To order one of these parts simply state the following 1-2-3-4 eg EBT-10-150-M6 and then the pack size.

1	2	3	4				
Part Code Prefix	Conductor Size	Length (L)	Stud Hole Size Range	Expandable from M6 with Earth tags to:	Braid Nominal Dia	Max Current Rating	Pack Sizes
EBT	(MM <sup>2</sup> )	(MM)	(MM) Clearance	(mm)	(mm)	(A)	(Pc's)
EBT	1	100	M4,6		1.7	18	5,10,25
EBT	1	150	M4,6		1.7	18	5,10,25
EBT	1	200	M4,6		1.7	18	5,10,25
EBT	4	150	M4,6,8,10		3.4	40	5,10,25
EBT	4	200	M4,6,8,10		3.4	40	5,10,25
EBT	6	150	M4,6,8,10	M16,18,20,22,25,32,40	4.2	55	5,10,25
EBT	6	200	M4,6,8,10	M16,18,20,22,25,32,40	4.2	55	5,10,25
EBT	10	150	M6,8,10	M16,18,20,22,25,32,40	5.4	85	5,10,25
EBT	10	200	M6,8,10	M16,18,20,22,25,32,40	5.4	85	5,10,25
EBT	16	150	M6,8,10	M16,18,20,22,25,32,40	6.9	120	5,10,25
EBT	16	200	M6,8,10	M16,18,20,22,25,32,40	6.9	120	5,10,25
EBT	16	400	M6,8,10	M16,18,20,22,25,32,40	6.9	120	5,10,25

## Built for you

We have kept our standard range as small as possible to ensure we offer the most cost effective solution and because we appreciate that one size doesn't fit all by following our easy to use Earth Bond Enquiry form available at [www.copperbraid.co.uk](http://www.copperbraid.co.uk) or simply by calling us on 0151 548 7040 to talk through your specific requirements and design appropriately. You can be sure of the most competitive prices as most component parts are stock items and our dedicated production unit will ensure a short lead time.

## Pipe Bonds



Copper braid, 6 sq mm to 16 sq mm with or without insulation. We can also supply Tri-rated green / yellow cable for the bonds as a pre-insulated alternative to copper braid. We can supply special lugs for attaching to flange bolts. Standard sizes include M16, M20, M26, M32 and M40. Larger diameters are available on request. The tags are made of Brass to EN1652-CW508L-H095. These earth bonds can either be supplied already made up or we can supply a kit including everything you need to make up the bonds on site including, copper braid or tri-rated cable, lugs and crimp tooling.

## Sleeving

We stock a range of heat shrink sleeving products be it adhesive lined or zero halogen we can fit your required component to suit. We can also produce straps in a variety of coatings dependent upon your requirements