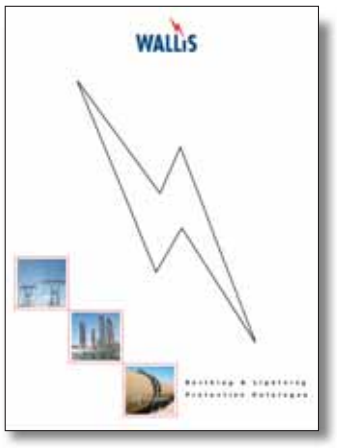
A.N. WALLIS - Earthing & Lightning Protection Product Catalogue

Earthing & Lightning Protection

Product Catalogue

Welcome to our latest Earthing & Lightning Protection catalogue



We hope you will find your catalogue both informative and easy to use. We have included much more information within the tables and drawings to help you select the products you require.

There are both new products and a wider selection of existing ranges included within this new catalogue.

Many existing Wallis products have undergone design changes which have improved their mechanical performance and resistance to corrosion.

Wallis Earthing & Lightning Protection materials supplied from our manufacturing facilities in Nottingham, UK are used on projects throughout the world.

Hospitals in Kuwait, telecoms towers in Thailand, schools in Oman, railways in Hong Kong, residential towers in the UAE, petro chemical facilities in Malaysia and substations in Saudi Arabia all use Wallis Earthing & Lightning Protection.

We are constantly working to improve our literature, so if you have any suggestions for us to improve this catalogue in the future, we would be pleased to hear from you.

A. N. WALLIS & Co. Ltd • **Tel** +44 (0)115 927 1721 • **Fax** +44 (0)115 875 6630 • **E-mail** info@an-wallis.com • **Website** www.an-wallis.com

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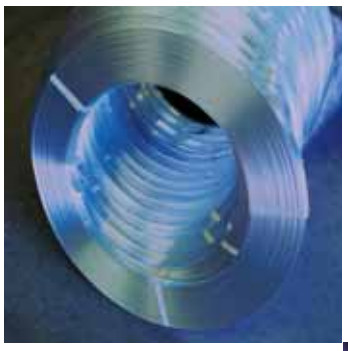
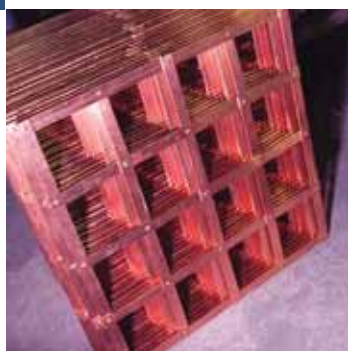
Welcome to Wallis

Founded over 60 years ago, we have a long tradition of providing first class earthing and lightning protection products. What's more, we believe we have as wide a range of products as can be found in the industry.

We also deliver reassuring levels of quality. All of our equipment is designed, manufactured and tested to meet British, European and International standards at our own facilities in Nottingham, UK, which include a non-ferrous foundry and machine shops. We are quality approved and accredited to BS EN ISO 9001:2000.

A commitment to excellent customer service also drives what we do. Part of this is ensuring that we maintain good stock levels so you can rely on same-day despatch for many of our products.

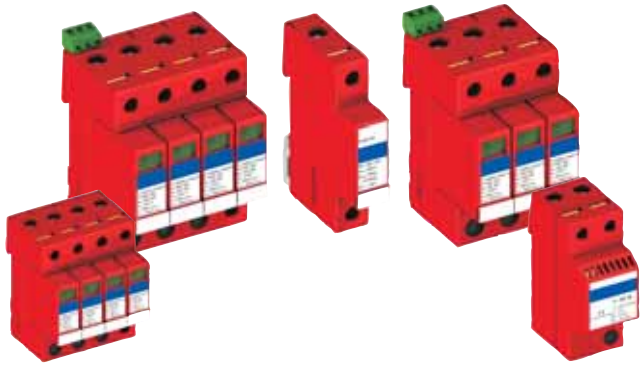




With extensive experience and technical expertise, we can also design and advise on earthing and structural lightning protection schemes to suit individual requirements. We have designed and supplied materials for projects including high-rise commercial and residential buildings, bridges, telecommunication installations, transmission lines and substations.

Such is our reputation for high standards that Wallis equipment is used around the world, including the Middle East and Far East, with stocking distributors in key areas.

If you've selected Wallis for structural lightning protection products, why not make us your choice for exothermic welding and surge protection equipment too.



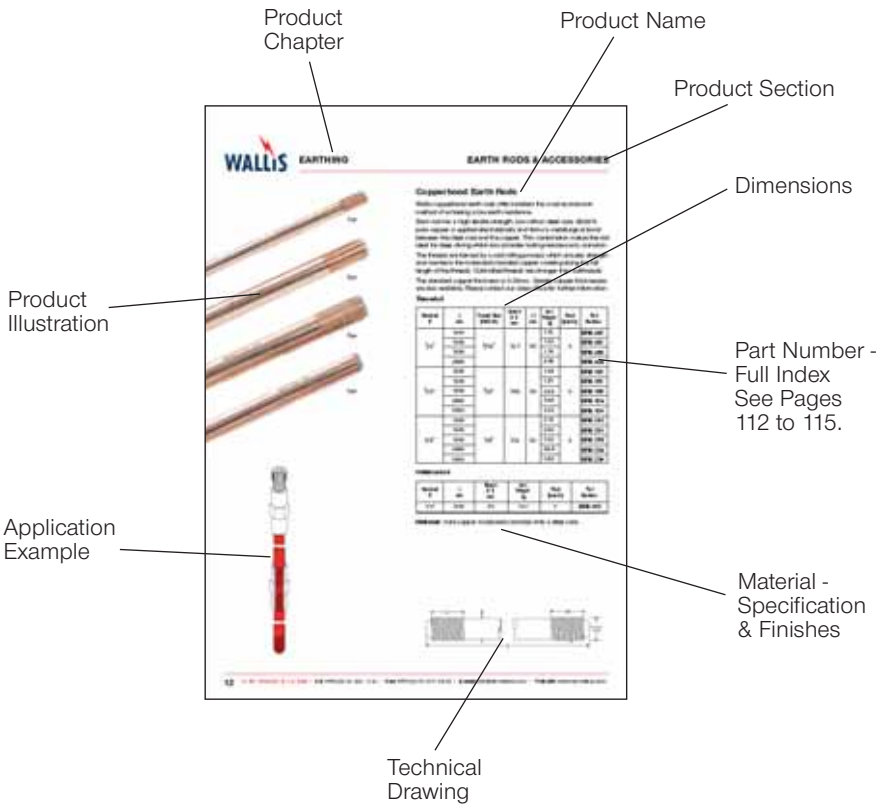
The Wallis Cu-nnect exothermic welding system is a simple, economical method of making permanent, very high quality electrical connections mainly between copper to copper or copper to steel. The system is completely portable and requires no outside source of power or heat.

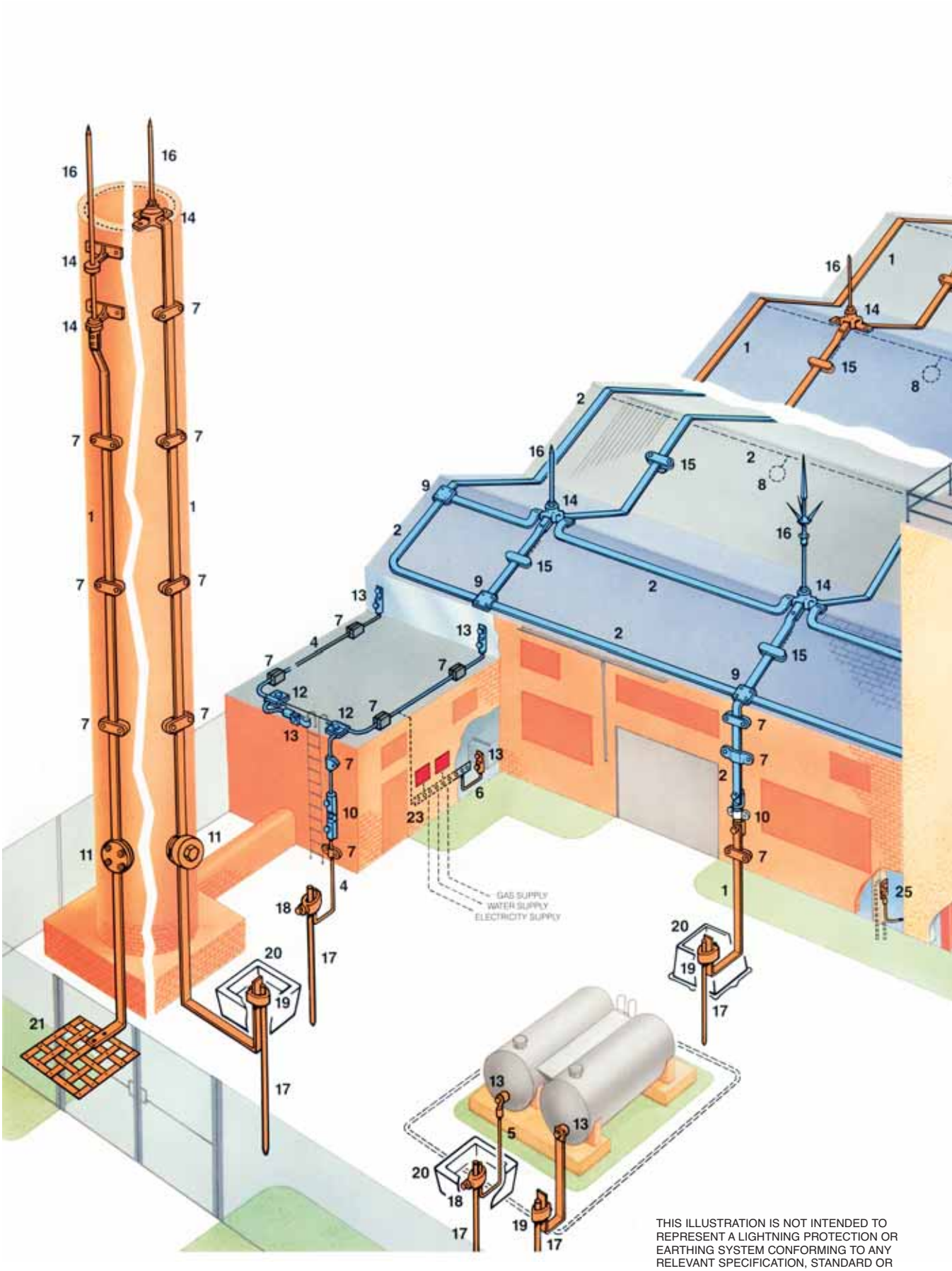
We also offer a comprehensive range of surge protection devices for mains power, data, signal and telephone lines, to protect sensitive electronic equipment from damage caused by transient over-voltages.

Please contact our sales office for further details.

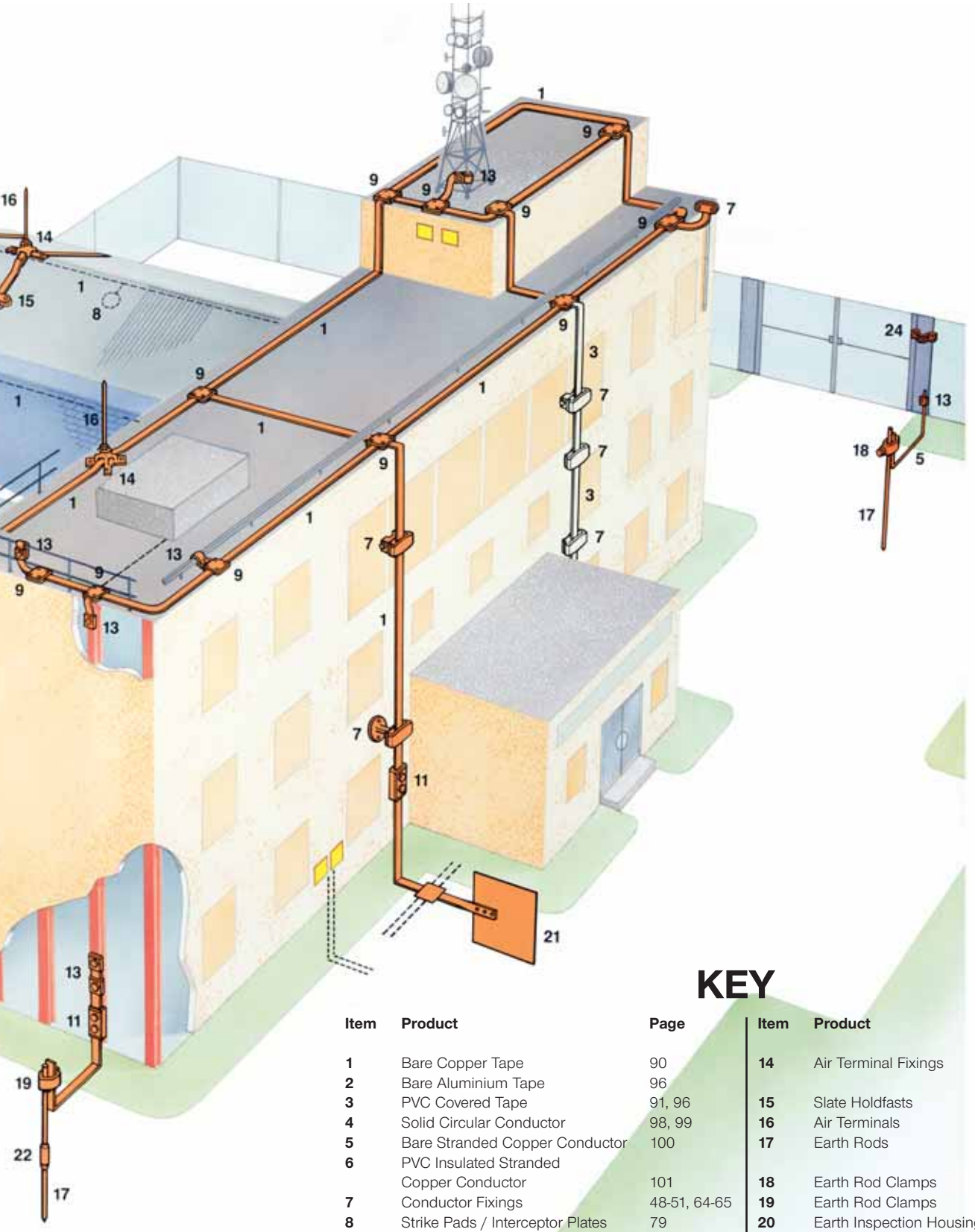
Using This Catalogue

This catalogue is designed to be as easy to use as possible. To help find the product you need, there is an alphabetical product index, a part number index and a product locator. Every product featured has its own technical and application drawings and a detailed product table. Materials specifications are also included.





THIS ILLUSTRATION IS NOT INTENDED TO REPRESENT A LIGHTNING PROTECTION OR EARTHING SYSTEM CONFORMING TO ANY RELEVANT SPECIFICATION, STANDARD OR CODE OF PRACTICE



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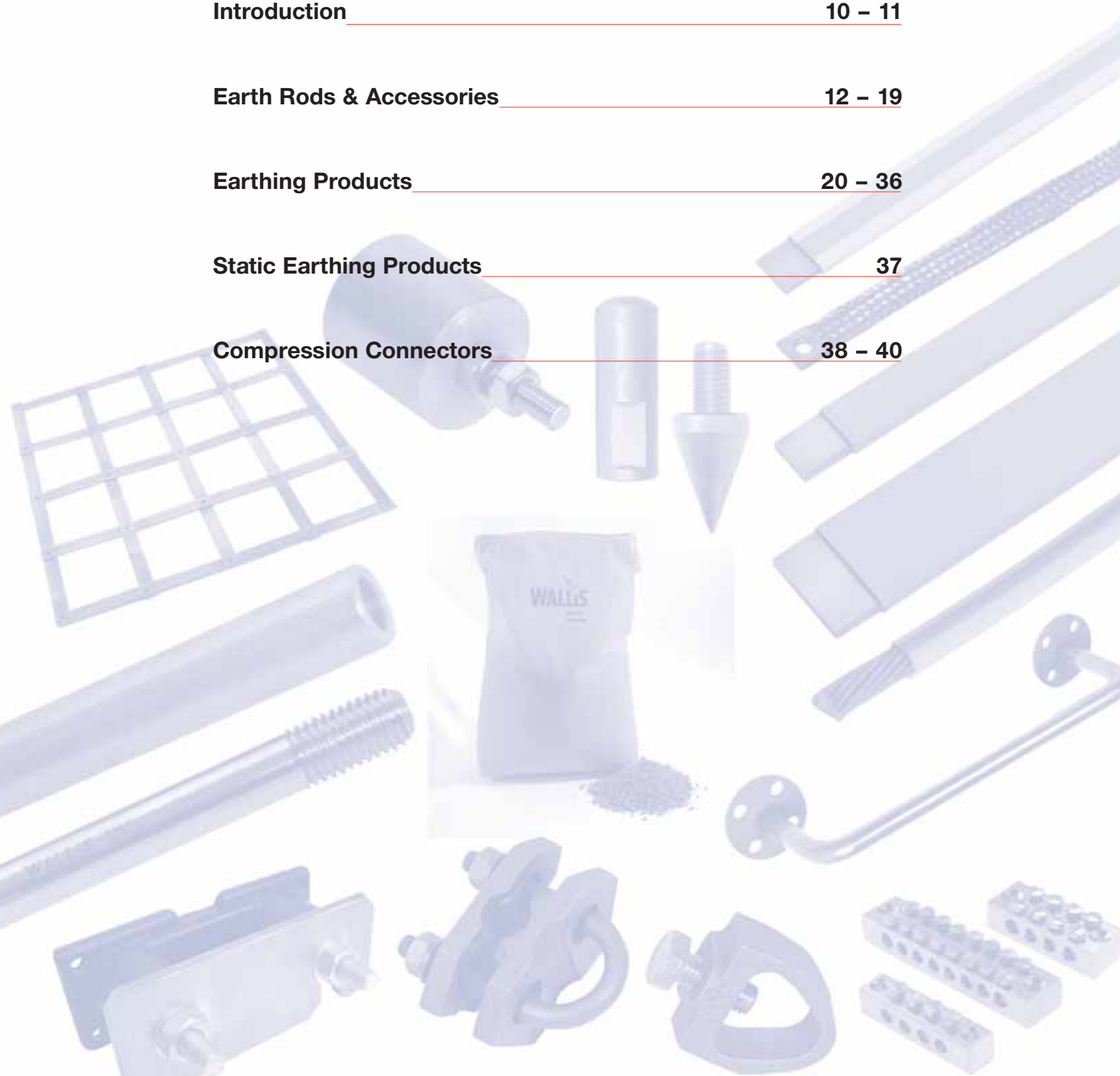
EARTHING



A well designed earthing system is essential to ensure protection of personnel and equipment from danger associated with fault currents.

Earthing System Design Considerations

To achieve an efficient earthing system it is essential that a low electrical resistance to earth is achieved, using good quality conductors with sufficient cross sectional area to carry the expected current flow. The conductors must also have a high corrosion resistance and must meet internationally recognised European and British earthing standards.

The information contained in this section primarily refers to Lightning Protection Earthing Systems (LPS) and does not detail all earthing requirements for electrical wiring, although there are some similarities. Please refer to the IEE 16th edition wiring regulations for more details.

Other factors to consider when designing an earthing system are:

A survey is required to determine ground resistivity.

Soil moisture content: more moisture always reduces soil resistance.

Chemical composition of soil: certain salts and minerals affect soil resistivity.

Temperature: if the ground is frozen its resistance becomes much higher.

The extent of any buried services which could affect the earth termination networks.

Details of metallic service pipes, rails, tanks etc. which may need bonding into the earth system to prevent the danger of side flashing.

The area available to place earth electrodes, this may be limited.

Earth Terminations & Networks

An earth electrode should be connected to each down conductor of a lightning protection system (LPS). Earth rods need an earth inspection housing for periodic testing of earth resistance.

Earth rods are used in most applications and are driven into the ground as close as is practicable to the structure and the down conductor. They are normally spaced at specified intervals corresponding to the spacing on the down conductors.

Resistance to Earth

For an LPS the earth termination network as a whole should have a combined resistance of not more than ten ohms, before bonding to building metalwork. However, the maximum resistance value for earthing systems is application specific.

A single earth rod may not achieve the required resistance figure and several may be need to be fitted to achieve this; their combined resistance is proportional to the reciprocal of the individual rod resistances to earth. This rule holds true as long as each rod is situated outside the resistance area of any other. To ensure this is the case, it is generally accepted that the minimum spacing between rods should not be less than their driven length.

The expected number of rods required to obtain a particular resistance value, e.g. ten ohms, can be roughly calculated. To do this the soil resistivity needs to be taken into consideration. A soil resistivity test will need to be performed.

There are several methods used to obtain a lower resistance value:

More rods can be driven.

Rods can be driven deeper.

Ring conductors connecting rods together underground can be used.

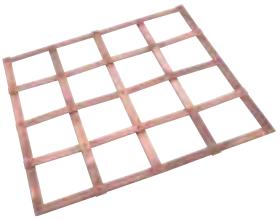
Rods of a larger diameter can be used.

Where deep driving is not possible shorter rods with a larger diameter can be used; copper earth mats and earth plates can be used in place of earth rods.

A “crow’s foot” configuration can be used where parallel connection is not possible.

Where high resistance soil conditions are a problem soil conditioning agents can be used to backfill rod holes. Conductive concrete can be used to backfill an earth mat. Both effectively increase an electrodes cross sectional area and therefore reduce its resistance to earth.

The international standards also specify the recommended materials used for all earthing conductors and their dimensions.



The information contained in this section is intended as a guide and should not be used to perform designs. A.N.Wallis does not accept responsibility for errors or omissions. Detailed information on earthing design is contained in internationally recognised European and British earthing standards.

Equipotential Bonding

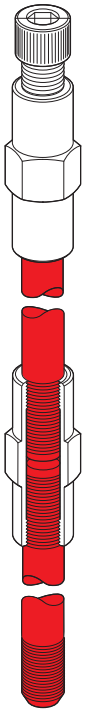
It is common practice to use the buildings natural structural steelwork and bonding it to the LPS to further improve its ability to conduct lightning and fault currents to earth; prior permission may be required.

Joints

Joints should be mechanically effective, all joints other than welded ones are a potential discontinuity, and care should be taken to ensure contact surfaces are clean and that fixing clamps are tight and well protected from corrosion, which can occur if dissimilar metals are joined. Ideally there should be as few joints as possible in an earthing design.

Maintenance & Life of an Earth System

It is important to properly maintain an earth circuit to ensure it retains its ability to conduct the same current carrying capacity as it did when it was originally installed. Earth rod resistances should be regularly checked. Corrosion and fault currents can cause high resistance joints leading to overheating. However, if an earth system is correctly installed and maintained it should last for many years.



Copperbond Earth Rods

Wallis copperbond earth rods offer installers the most economical method of achieving a low earth resistance.

Each rod has a high tensile strength, low carbon steel core. 99.95% pure copper is applied electrolytically and forms a metallurgical bond between the steel core and the copper. This combination makes the rod ideal for deep driving whilst also provides lasting resistance to corrosion.

The threads are formed by a cold rolling process which ensures strength and maintains the molecularly bonded copper covering along the full length of the threads. Cold-rolled threads are stronger than cut-threads.

The standard copper thickness is 0.25mm. Greater copper thicknesses are also available. Please contact our sales office for further information.

Threaded

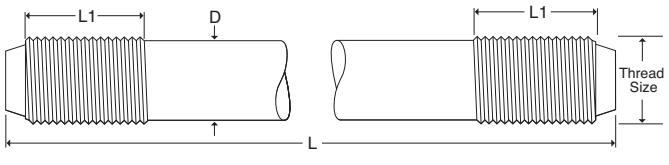
Nominal Size	L mm	Thread Size (UNC-2A)	Shank D mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
1/2"	1200	9/16"	12.7	30	1.18	5	ERB 412
	1500				1.55		ERB 415
	1800				1.76		ERB 418
	2400				2.36		ERB 424
5/8"	1200	5/8"	14.2	30	1.53	5	ERB 112
	1500				1.88		ERB 115
	1800				2.29		ERB 118
	2400				3.00		ERB 124
	3000				3.79		ERB 130
3/4"	1200	3/4"	17.2	35	2.19	5	ERB 212
	1500				2.73		ERB 215
	1800				3.27		ERB 218
	2400				4.35		ERB 224
	3000				5.44		ERB 230

Material: Pure copper molecularly bonded onto a steel core.

Unthreaded

Nominal Size	L mm	Shank D mm	Unit Weight kg	Pack Quantity	Part Number
3/8"	1200	9.5	0.62	5	ERB 012

Material: Pure copper molecularly bonded onto a steel core.



Threaded Couplings

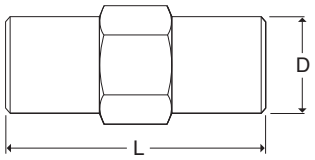
These Wallis high-strength couplings are used for joining copperbond threaded earth rods together. They facilitate deep driving and ensure continual contact between the rods both during and after installation.

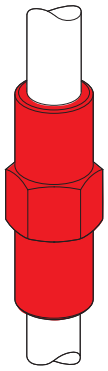
The coupling also protects the earth rod threads during installation with the threaded driving head. There is a lead-in for ease of assembly and a hex on the outside for grip and keeping the coupling tight when driving into the ground.

All Wallis couplings are manufactured from a high copper content alloy ensuring excellent corrosion resistance.

Type	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
1/2"	70	20	0.07	25	**ERBO 12**
5/8"	70	20	0.09		**ERBO 16**
3/4"	80	24	0.14		**ERBO 20**

Material: Aluminium Bronze.



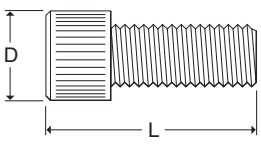


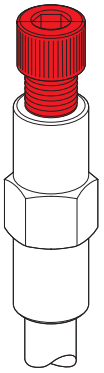
Threaded Driving Heads

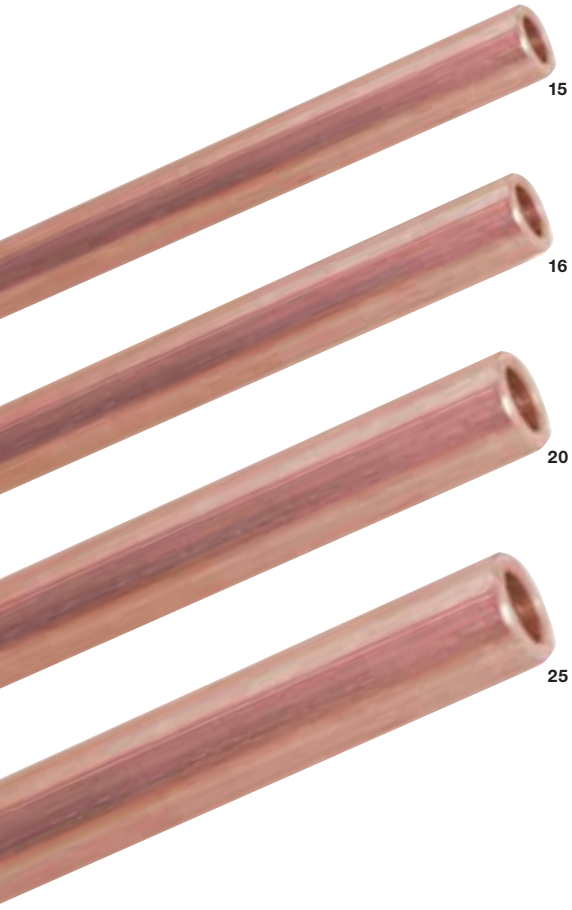
These Wallis re-usable threaded driving heads are suitable for driving copperbond threaded earth rods by hand or with a power hammer. The driving head screws into the threaded coupling to allow deep driving of the earth rods.

Type	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
1/2"	50	20	0.05	25	**ERBD 12**
5/8"	55	22	0.08		**ERBD 16**
3/4"	60	25	0.13		**ERBD 20**

Material: Steel.





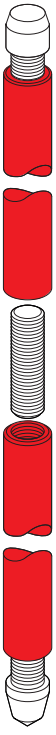


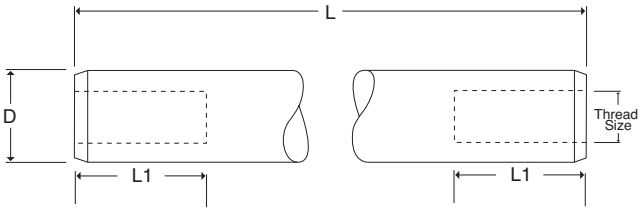
Solid Copper Earth Rods

These earth rods are designed for use where extremely high corrosion resistance and exceptionally long life are required. Solid copper earth rods are produced from solid copper bar and are internally threaded for jointing. When deep driving a solid copper earth rod the usual practice is to insert the rod into a bore hole and backfill with either Low-Resistance Earthing Compound or Bentonite, (see page 26 for further details).

Shank D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
15	1200	M10	20	1.88	5	**ERC 112**
16	1500	M10	20	2.66	5	**ERC 115**
	1800			3.20		**ERC 118**
	2400			4.28		**ERC 124**
	3000			5.36		**ERC 130**
20	1200	M10	20	3.34	5	**ERC 212**
	1500			4.18		**ERC 215**
	1800			5.03		**ERC 218**
	2400			6.71		**ERC 224**
	3000			8.40		**ERC 230**
25	1200	M12	25	5.23	1	**ERC 312**
	1500			6.54		**ERC 315**
	1800			7.86		**ERC 318**
	2400			10.5		**ERC 324**
	3000			13.1		**ERC 330**

Material: Copper to BS EN 13601.



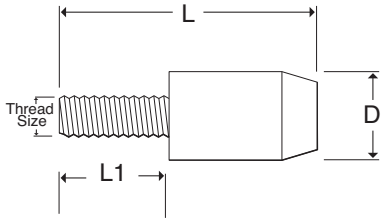


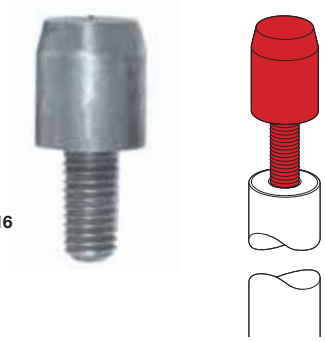
Driving Heads

The driving head protects the internal thread and the top of the solid copper earth rod from damage when being driven into the ground.

D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
16	38	M10	20	0.03	25	**ERCD 16**
20	41	M10	20	0.06		**ERCD 20**
25	45	M12	25	0.10		**ERCD 25**

Material: Steel.





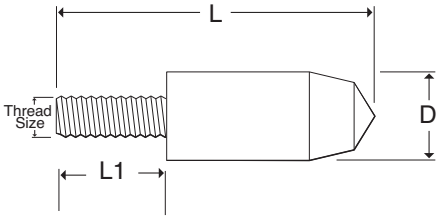
ERCD 16

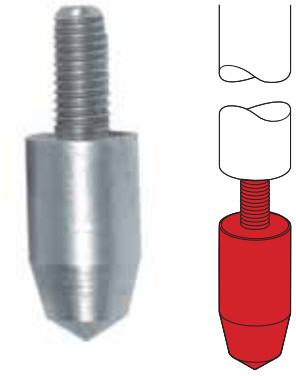
Driving Spikes

These driving spikes enable solid copper earth rods to be driven easily into the ground.

D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
16	42	M10	20	0.03	25	**ERCS 16**
20	51	M10	20	0.06		**ERCS 20**
25	60	M12	25	0.10		**ERCS 25**

Material: Steel.





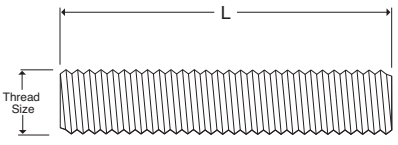
ERCS 16

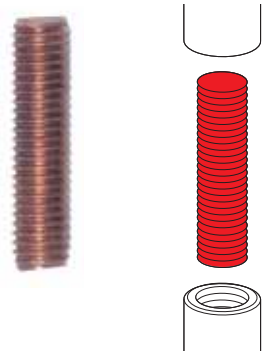
Coupling Dowels

The phosphor bronze coupling dowel is used for joining solid copper earth rods together.

Thread Size	L mm	Unit Weight kg	Pack Quantity	Part Number
M10	40	0.02	25	**ERD 01**
M12	50	0.04		**ERD 02**

Material: Phosphor Bronze.





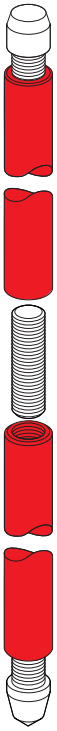
ERD 01

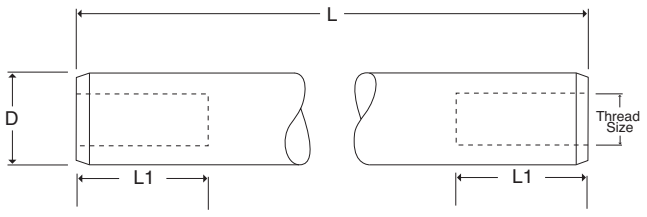
Stainless Steel Earth Rods

These earth rods are designed for use where problems may be caused by galvanic corrosion due to dissimilar metals being buried in close proximity. They are produced from stainless steel rod and are internally threaded for jointing. They are highly resistant to corrosion.

Shank D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
16	1200	M10	20	1.87	5	**ERZ 112**
	1500			2.35		**ERZ 115**
	1800			2.83		**ERZ 118**
	2400			3.79		**ERZ 124**
	3000			4.75		**ERZ 130**
20	1200	M10	20	2.95	5	**ERZ 212**
	1500			3.71		**ERZ 215**
	1800			4.46		**ERZ 218**
	2400			5.96		**ERZ 224**
	3000			7.46		**ERZ 230**
25	1200	M12	25	4.64	1	**ERZ 312**
	1500			5.81		**ERZ 315**
	1800			6.99		**ERZ 318**
	2400			9.34		**ERZ 324**
	3000			11.69		**ERZ 330**

Material: Stainless Steel to BS EN 10088.



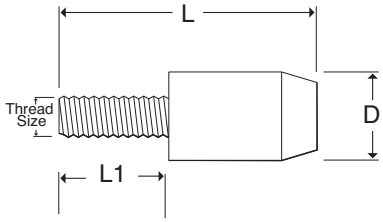


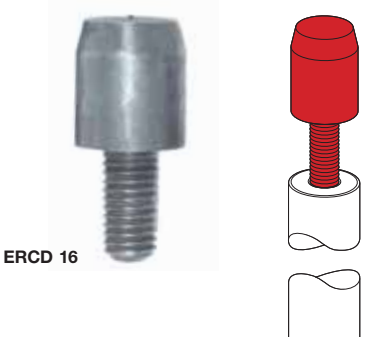
Driving Heads

The driving head protects the internal thread and the top of the stainless steel earth rod from damage when being driven into the ground.

D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
16	38	M10	20	0.03	25	**ERCD 16**
20	41	M10	20	0.06		**ERCD 20**
25	45	M12	25	0.10		**ERCD 25**

Material: Steel.



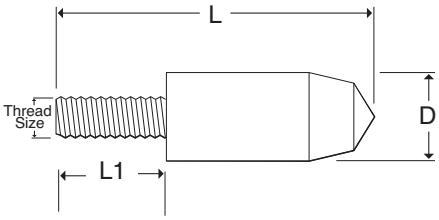


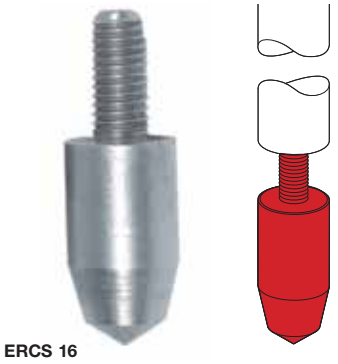
Driving Spikes

These driving spikes enable stainless steel earth rods to be driven easily into the ground.

D mm	L mm	Thread Size	L1 mm	Unit Weight kg	Pack Quantity	Part Number
16	42	M10	20	0.03	25	**ERCS 16**
20	51	M10	20	0.06		**ERCS 20**
25	60	M12	25	0.10		**ERCD 25**

Material: Steel.



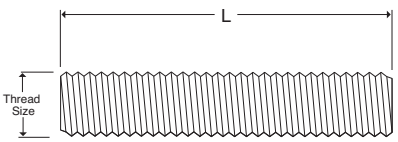


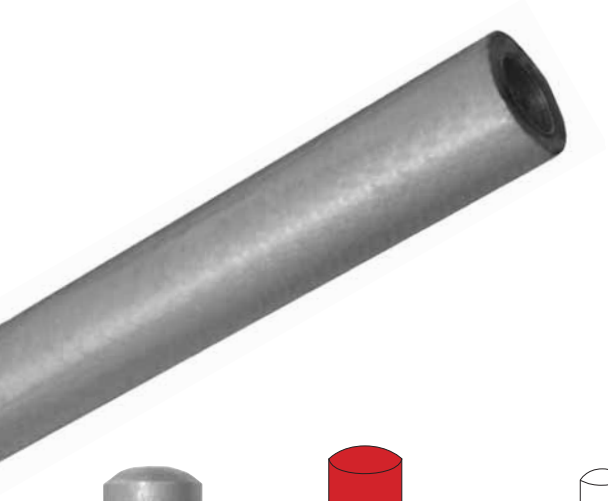
Coupling Dowels

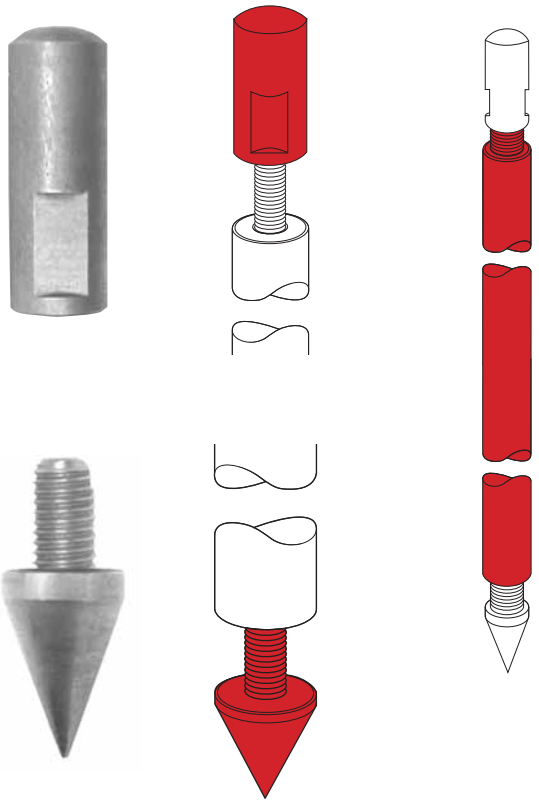
The stainless steel coupling dowel is used for joining stainless steel earth rods together.

Thread Size	L mm	Unit Weight kg	Pack Quantity	Part Number
M10	40	0.02	25	**ERD 16**
M12	50	0.04		**ERD 25**

Material: Stainless Steel.







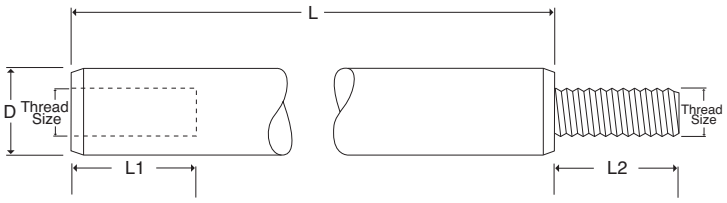
Galvanised Steel Earth Rod Set

This galvanised steel earth rod has a male thread at the top and a female thread at the bottom enabling rods to be joined together.

After machining, the rod is hot-dip galvanised with a coating of zinc not less than 610 g/m². The rod is supplied as a standard set complete with toughened steel driving head, hardened steel driving spike and galvanised steel wire rope grip.

Nominal Size	L mm	Thread Size (BSF)	D mm	L1 mm	L2 mm	Unit Weight kg	Pack Quantity	Part Number
5/8"	1200	3/8"	16.5 - 17.0	30	25	2.10	5	**ERG 112**

Material: Mild Steel galvanised to BS EN ISO 1461.



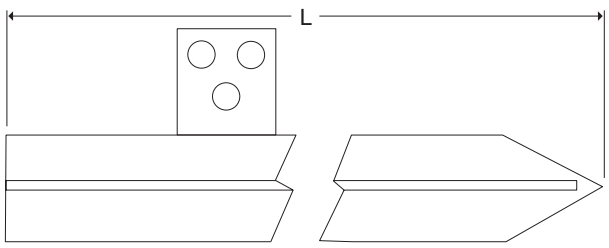
Cross Profile Galvanised Steel Earth Rods

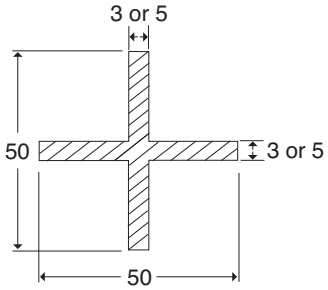
Wallis cross profile galvanised steel earth rods are ideally suited for installation in earth termination systems of temporary structures such as antennas or distribution boards on construction sites.

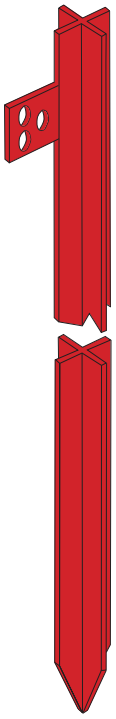
These x-shaped rods are manufactured in steel with a minimum average zinc coating of 70µm. Each earth rod has a splice plate with three connecting holes.

Section mm	L mm	Splice Plate Holes No. x Ø mm	Unit Weight kg	Pack Quantity	Part Number
50 x 50 x 3	1000	3 x 11	2.34	5	**ERX 310**
	1500		3.51		**ERX 315**
	2000		4.61		**ERX 320**
	2500		5.85		**ERX 325**
	3000		7.03		**ERX 330**
50 x 50 x 5	1000	3 x 11	3.90	5	**ERX 510**
	1500		5.85		**ERX 515**
	2000		7.80		**ERX 520**
	2500		9.75		**ERX 525**
	3000		11.75		**ERX 530**

Material: Carbon steel galvanised to BS EN ISO 1461.








ERA 1625


ERA 2525


ERA 1631


ERA 1650

Earth Rod to Tape 'A' Clamps

These clamps are used for joining earth rods to different sizes of copper tape. The clamps have a high resistance to corrosion and are mechanically strong to ensure a lasting connection.

Earth Rod Shank Ø mm	Maximum Tape Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
12.7	26 x 15	43	37	17	0.10	50	**ERA 1625**
	32 x 15	43	45	18	0.20	25	**ERA 1631**
	39 x 15	44	51	22	0.25	25	**ERA 1638**
14.2	26 x 14	43	37	17	0.10	50	**ERA 1625**
	32 x 14	43	45	18	0.20	25	**ERA 1631**
	39 x 14	44	51	22	0.25	25	**ERA 1638**
	51 x 16	47	64	20	0.21	25	**ERA 1650**
15.0	26 x 13	43	37	17	0.10	50	**ERA 1625**
	32 x 13	43	45	18	0.20	25	**ERA 1631**
	39 x 13	44	51	22	0.25	25	**ERA 1638**
	51 x 15	47	64	20	0.21	25	**ERA 1650**
16.0	26 x 12	43	37	17	0.10	50	**ERA 1625**
	32 x 12	43	45	18	0.20	25	**ERA 1631**
	39 x 12	44	51	22	0.25	25	**ERA 1638**
	51 x 14	47	64	20	0.21	25	**ERA 1650**
17.2	26 x 11	43	37	17	0.10	50	**ERA 1625**
	32 x 11	43	45	18	0.20	25	**ERA 1631**
	39 x 11	44	51	22	0.25	25	**ERA 1638**
	51 x 13	47	64	20	0.21	25	**ERA 1650**
	26 x 18	55	40	25	0.20	10	**ERA 2525**
20.0	26 x 8	43	37	17	0.10	50	**ERA 1625**
	32 x 8	43	45	18	0.20	25	**ERA 1631**
	39 x 8	44	51	22	0.25	25	**ERA 1638**
	51 x 10	47	64	20	0.21	25	**ERA 1650**
	26 x 16	55	40	25	0.20	10	**ERA 2525**
25.0	26 x 11	55	40	25	0.20	10	**ERA 2525**

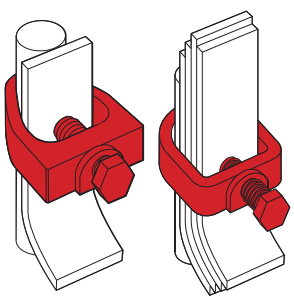
Material: Aluminium Bronze with M10 x 25mm Phosphor Bronze Set Screw.

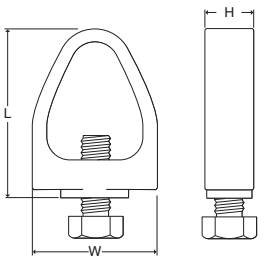
The aluminium version is mainly used for connecting aluminium tape to a puddle flange rod as part of a lightning protection system.

Rod Shank Ø mm	Maximum Tape Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
16.0	26 x 12	44	40	19	0.60	25	**ERA 1625A**

Material: Aluminium with M10 x 25mm Stainless Steel Set Screw.


ERA 1625A





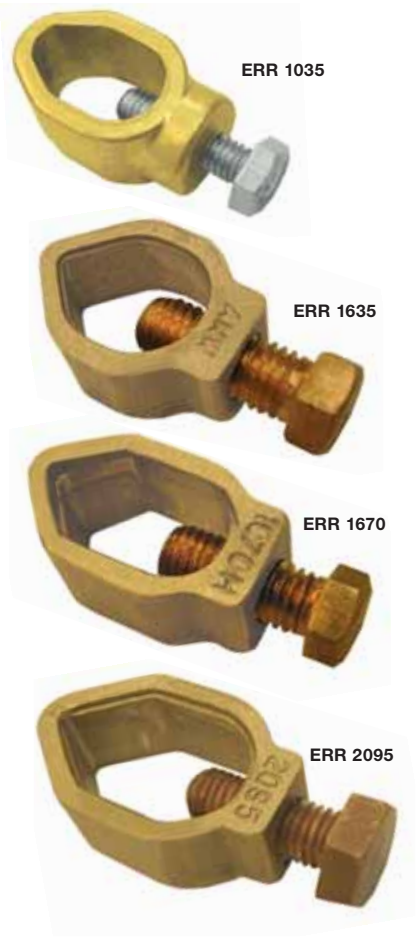
Earth Rod to Cable ‘G’ Clamps

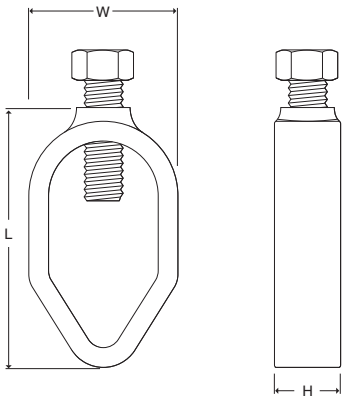
These clamps are used for joining earth rods to different sizes of stranded copper conductor. The clamps have a high resistance to corrosion and are mechanically strong to ensure a lasting connection.

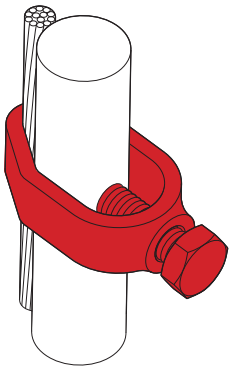
Earth Rod Shank Ø mm	Conductor Range mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
9.5	6 - 35	32	20	16	0.04	25	**ERR 1035**
12.7	6 - 35	34	25	15	0.05	25	**ERR 1635**
	35 - 70	41	25	17	0.08	50	**ERR 1670***
14.2	6 - 16	34	25	15	0.05	25	**ERR 1635**
	16 - 70	41	25	17	0.08	50	**ERR 1670***
	70 - 185	48	30	19	0.10	50	**ERR 2095***
15.0	6 - 16	34	25	15	0.05	25	**ERR 1635**
	16 - 70	41	25	17	0.08	50	**ERR 1670***
	70 - 150	48	30	19	0.10	50	**ERR 2095***
16.0	6 - 70	41	25	17	0.08	50	**ERR 1670***
	70 - 120	48	30	19	0.10	50	**ERR 2095***
17.2	6 - 95	48	30	19	0.10	50	**ERR 2095***
20.0	6 - 70	48	30	19	0.10	50	**ERR 2095***

Material: Gunmetal with M10 x 25mm Phosphor Bronze Set Screw. (ERR1035 in Naval Brass with M6 x 20mm Stainless Steel Set Screw).

* Suitable for use with 8mm Ø solid circular copper conductor.







‘U’ Bolt Clamps

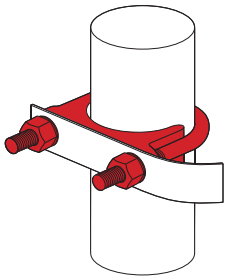
This versatile range of Wallis ‘U’ bolt clamps can be used to connect flat tapes and stranded cables to earth rods, reinforcing bars (re-bar), hand rails etc.

Single Plate Type for Horizontal Flat Tapes

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

Maximum Rod Ø mm	Hole Centres mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
16	30	58	62	33	0.15	20	**ERU 016**
25	37	70	62	33	0.15	20	**ERU 025**
31	41	85	68	33	0.28	10	**ERU 031**
38	46	90	75	33	0.28	10	**ERU 038**
50	63	100	90	33	0.45	10	**ERU 050**

Material: Gunmetal plate with M10 threaded Copper ‘U’ Bolt.



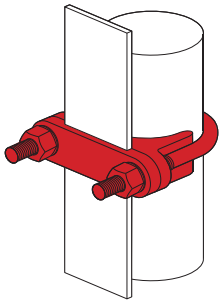
ERU 025

Double Plate Type for Vertical Flat Tapes

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

Maximum Rod Ø mm	Tape Width mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
16	25	68	62	33	0.21	20	**ERU 216**
25		70	62	33	0.23	20	**ERU 225**
31		85	68	33	0.33	10	**ERU 231**
38		90	75	33	0.38	10	**ERU 238**
50		100	90	33	0.58	10	**ERU 250**

Material: Gunmetal plate with M10 threaded Copper ‘U’ Bolt.



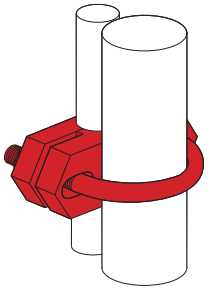
ERU 216

Double Plate Type for Vertical Stranded Cables

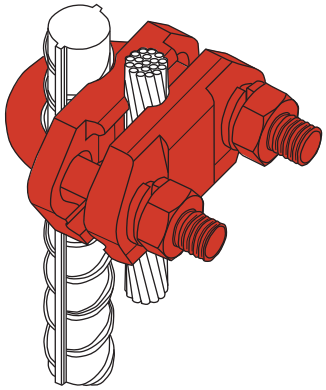
Used to connect stranded cables in a vertical and horizontal position on the rod.

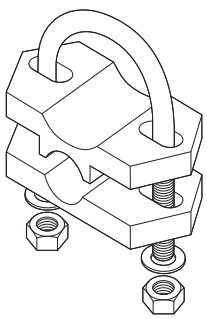
Maximum Rod Ø mm	Conductor Range mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
16	16 - 150	57	51	40	0.21	20	**ERU 470**
	150 - 300	73	68		0.34	10	**ERU 570**
20	16 - 70	57	51	40	0.21	20	**ERU 470**
	70 - 300	73	68		0.34	10	**ERU 570**
25	16 - 70	85	80	40	0.45	10	**ERU 670**
	70 - 300	98	93		0.54		**ERU 770**

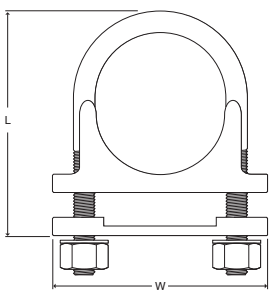
Material: Gunmetal plates with M10 threaded Copper ‘U’ Bolt.



ERU 470





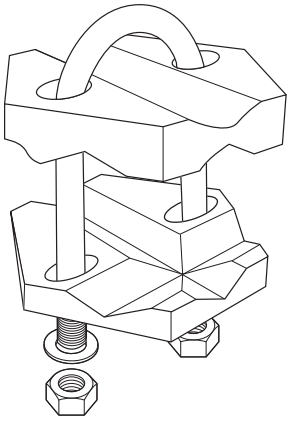


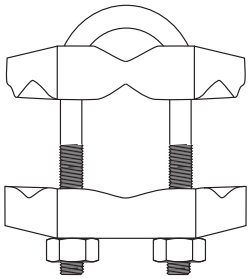
Re-bar Clamps

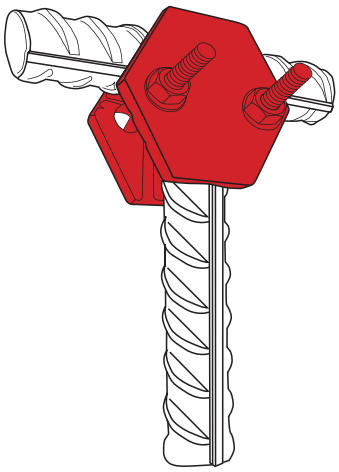
This versatile range of Wallis Re-bar clamps is used to connect re-bar to re-bar or re-bar to stranded cable. They provide a strong mechanical connection along with excellent resistance to corrosion.

Maximum Re-bar Ø mm	Re-bar Range Ø mm	Unit Weight kg	Pack Quantity	Part Number
10	6 - 10	0.21	20	**RBC 010**
20	12 - 20	0.34	20	**RBC 020**
25	20 - 25	0.21	10	**RBC 025**
32	25 - 32	0.34	10	**RBC 032**
40	32 - 40	0.54	10	**RBC 040**

Material: Gunmetal plates with Copper 'U' Bolt.







Split Connector Clamps

Split connector clamps are used to connect cable lugs onto earth rods. The clamps are designed to suit our full range of earth rods. All clamps are assembled with an M12 x 50mm set screw and fittings, except ERS010 which has an M8 x 40mm set screw and fittings. ERC24 also has a wing nut.

ERS 016

ERC 24

ERSS 20

For use with Copperbond Earth Rods (on rod thread)

Nominal Rod Size	Thread Size (UNC-2A)	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
5/8"	5/8"	42	26	26	0.22	10	**ERS 016**
3/4"	3/4"	50	29	29	0.31		**ERS 020**

Material: Gunmetal or Naval Brass.

For use with Copperbond Earth Rods (on rod shank)

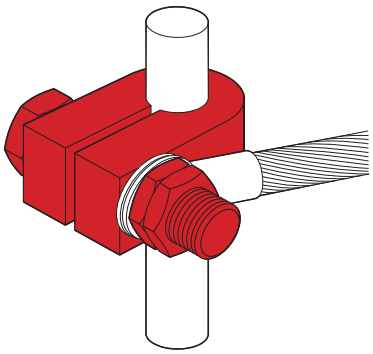
Rod Shank Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
9.5	27	18	20	0.08	10	**ERS 010**
14.2	42	25	25	0.27		**ERC 24**

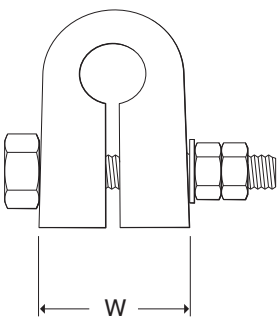
Material: Gunmetal or Naval Brass.

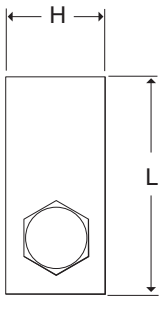
For use with Solid Copper & Stainless Steel Earth Rods (on rod shank)

Rod Shank Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
15	42	26	25	0.22	10	**ERC 26**
16	42	26	25	0.21		**ERSS 16**
20	50	29	29	0.28		**ERSS 20**

Material: Gunmetal or Naval Brass.

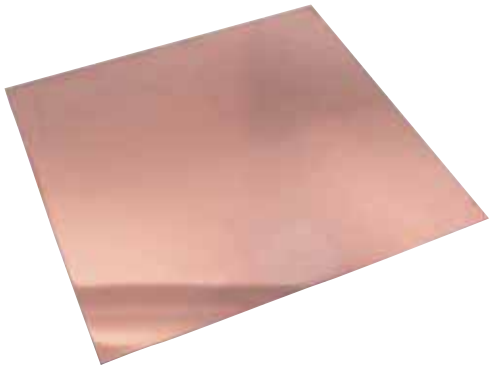






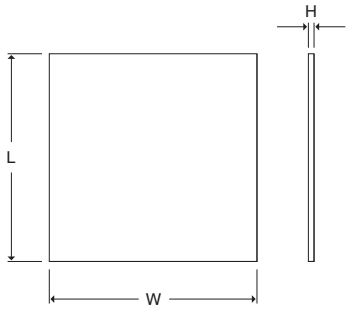
Solid Copper Earth Plates

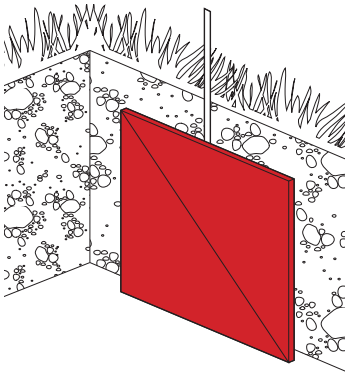
Solid copper plates provide a long lasting earthing solution in places where driving earth rods might be impractical. They are often installed in conjunction with Low-Resistance Earthing Compound or Bentonite.



L x W mm	H mm	Surface Area m^2	Unit Weight kg	Pack Quantity	Part Number
600 x 600	1.5	0.73	4.80	1	**EMP 601**
	3.0		9.60		**EMP 603**
900 x 900	1.5	1.63	10.80	1	**EMP 901**
	3.0		21.60		**EMP 903**

Material: Copper to BS EN 12163 (formerly BS 2874).

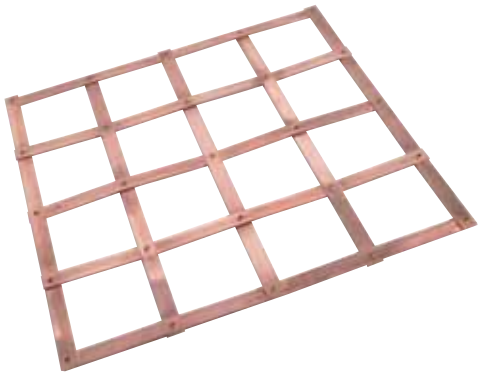




Solid Copper Lattice Mats

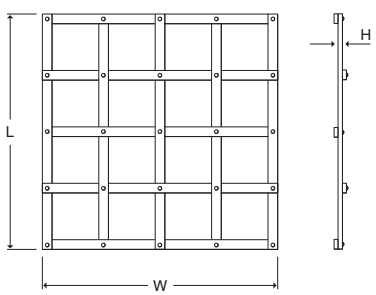
Solid copper lattice mats offer a more economical cost option to installing solid copper plates.

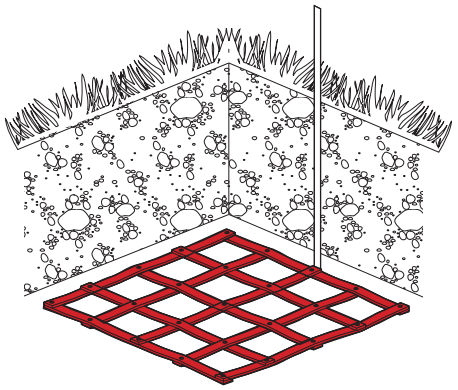
They are often used for potential grading and are a preferred option on installations such as telecommunication towers, where touch and step potential could cause problems.

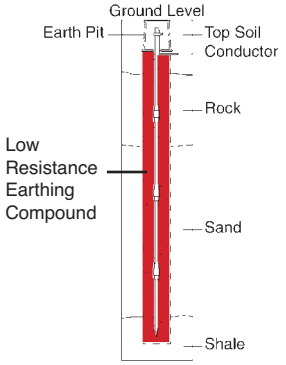


L x W mm	H mm	Surface Area m^2	Grid	Unit Weight kg	Pack Quantity	Part Number
600 x 600	3.0	0.31	5 Bar	4.0	1	**EML 603**
900 x 900	3.0	0.55	6 Bar	7.2	1	**EML 903**
		0.46	5 Bar	6.1		**EML 903 SPC**

Material: Copper to BS EN 13601 (formerly BS 1432).





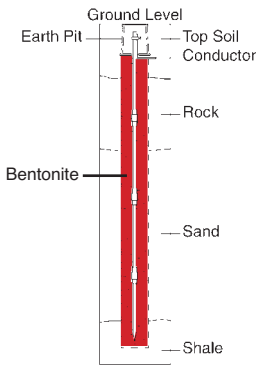


Low-Resistance Earthing Compound

Wallis low-resistance earthing compound is an electrically conductive aggregate. It is a grey, fine granular material used in place of other concrete aggregates such as sand. When mixed with cement and water it forms a permanent electrically conductive concrete.

The conductive concrete is ideal for use in difficult ground conditions. It is a permanent, stable and maintenance free solution to obtaining a low resistivity earth. The typical mixing ratio of low-resistance earthing compound to cement is 3:1 by weight.

Type	Unit Weight kg	Pack Quantity	Part Number
Low-Resistance Earthing Compound Only	25	1 Bag	**EMA 25**
Low-Resistance Earthing Compound Pre-Mixed with Cement			**EMA 26**



Bentonite

Bentonite is a moisture retaining clay used as an earth electrode back-fill to help lower soil resistivity. The clay is a sodium activated montmorillonite, which when mixed with water swells to many times its original dry volume.

Bentonite can be supplied in granular or powder form. The granular form is easier to handle as the powder can cause dust in windy conditions. Granular is the preferred option for filling trenches as the substance can be mixed in the trench. Powder is the preferred option for pouring into bore holes to ensure the mixture is a thin enough consistency to reach the bottom of the hole.

The typical expansion ratio when mixed with water is 2:1.

Type	Unit Weight kg	Pack Quantity	Part Number
Bentonite Granular Form	25	1 Bag	**EBG 25**
Bentonite Powder Form			**EBG 25P**

Heavy Duty Earth Inspection Housings

The Wallis heavy duty earth housing is designed, shaped and sized to fit easily into brick paved walkways. The lip of the base makes a flush fit with standard-sized bricks making the housing blend in without the need for a cement surround.

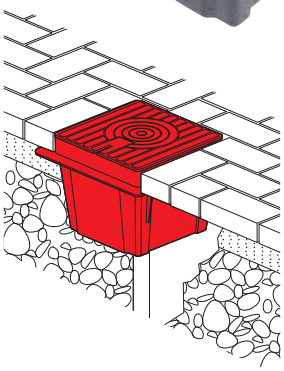
The housing will withstand loads of up to 6,000 kilograms and is suitable for most commercial and industrial applications. The lid locks into the base and can be opened with a standard flat screwdriver. The base has three built-in slots for locating earth bars.

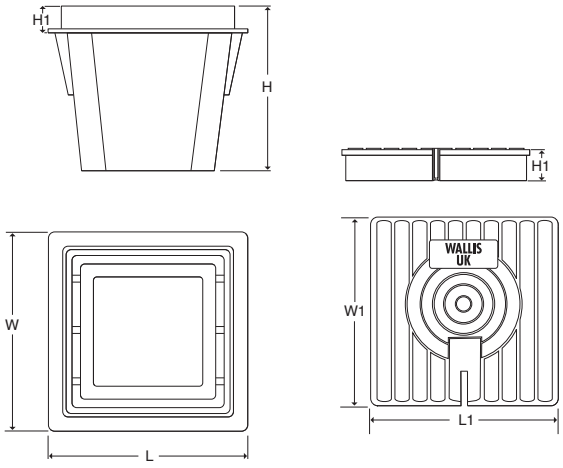
Lid Colour	L x W mm	H mm	L1 x W1 mm	H1 mm	Unit Weight kg	Pack Quantity	Part Number
Black	306 x 306	216	260 x 260	55	3.0	1	**EPP 001 W**
Grey							**EPP 002 W**

Material: Polypropylene base with GRP lid.

EPP 001 W

EPP 002 W





Inspection Housing Earth Bars (for Heavy Duty Earth Inspection Housings)

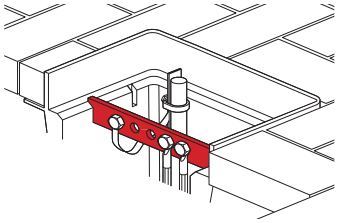
These earth bars fit into the slots provided in the heavy duty earth inspection housings and are used when multiple connections to the earth rod are required.

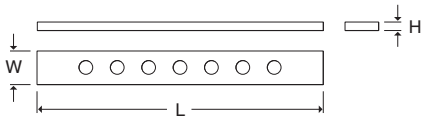
No. Holes	Hole Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
5	11	203	25	6	0.24	1	**EBC 35**
7					0.22		**EBC 37**

Material: Copper to BS EN 13601.

EBC 35

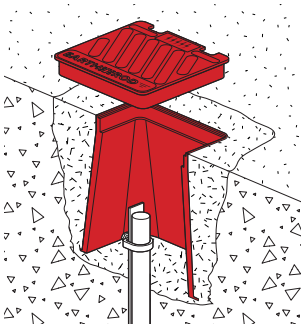
EBC 37





ERH 20

ERH 21



Light Duty Earth Inspection Housings

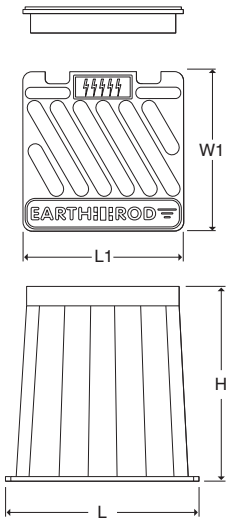
The Wallis light duty earth inspection housing has a maximum safe working load of 2,000 kilograms. It is UV stabilised against degradation by sunlight and non-brittle to prevent cold weather damage.

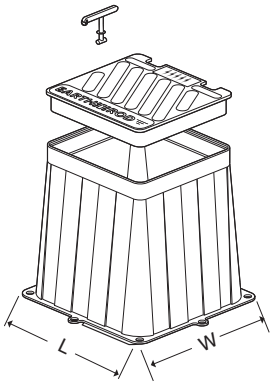
The unique, detachable easy-locking lid ensures security of equipment as the locking mechanism can only be operated by the special key provided with the housing. The base has built-in slots for locating earth bars.

Its lightweight feature allows easy handling, storage and transportation. The termination depth is increased 100% by simply locking two units together, allowing deeper earth electrode connections to be made.

Lid Colour	L x W mm	H mm	L1 x W1 mm	Unit Weight kg	Pack Quantity	Part Number
Black	260	230	200	1.50	1	**ERH 20**
Grey						**ERH 21**

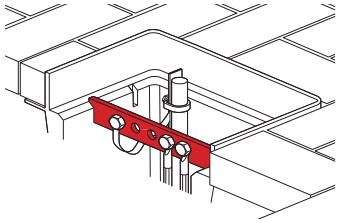
Material: Polypropylene.





EBC 25

EBC 27

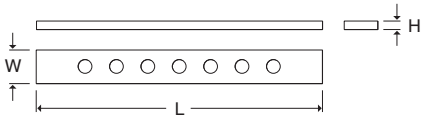


Inspection Housing Earth Bars (for Light Duty Earth Inspection Housings)

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

No. Holes	Hole Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
5	11	250	30	6	0.42	1	**EBC 25**
7					0.39		**EBC 27**

Material: Copper to BS EN 13601.

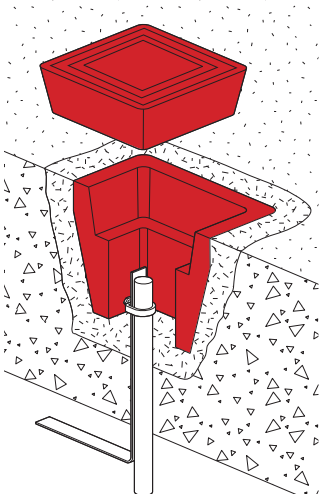


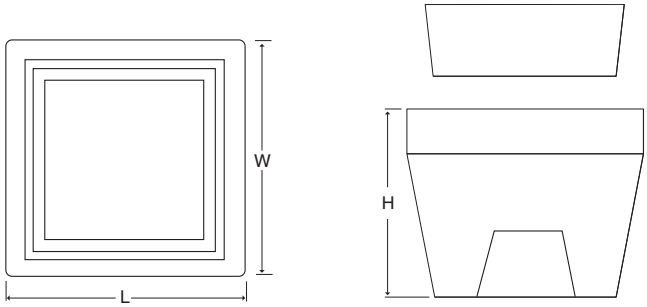
Concrete Earth Inspection Housing

The Wallis concrete earth inspection housing is load rated to 4,000 kilograms and is suitable for most industrial applications. The housing can have an internal earth bar fitted diagonally across in slots provided in the base.

L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
310	310	170	28.00	1	**ERH 01W**

Material: Concrete.



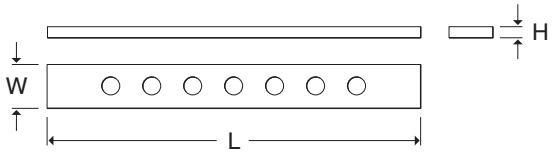


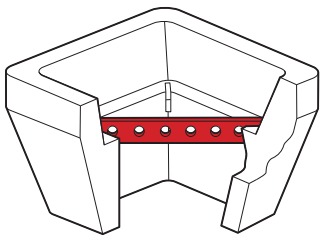
Inspection Housing Earth Bars (for Concrete Earth Inspection Housings)

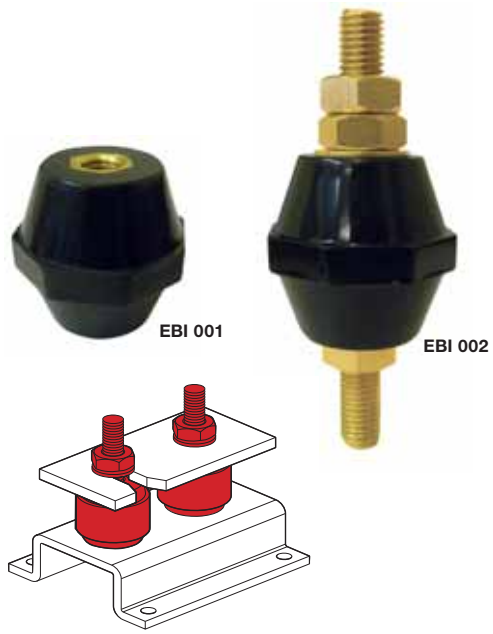
These earth bars fit into the slots provided in the concrete inspection housings and are used when multiple connections to the earth rod are required.

No. Holes	Hole Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
5	11	285	30	6	0.49	1	**EBC 05**
7					0.50		**EBC 07**

Material: Copper to BS EN 13601.





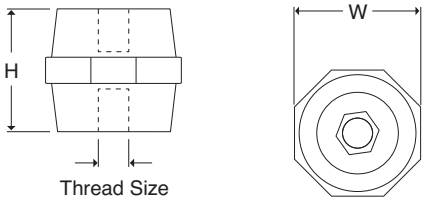


Insulators

These Wallis insulators are supplied with or without studs and locking nuts.

Type	Thread Size	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
Insulator only	M10	40	40	0.08	10	**EBI 001**
Insulator with 2 studs & 3 nuts				0.16		**EBI 002**

Material: Reinforced Polyester.



PES 002

PES 001

Earth Rod Seals

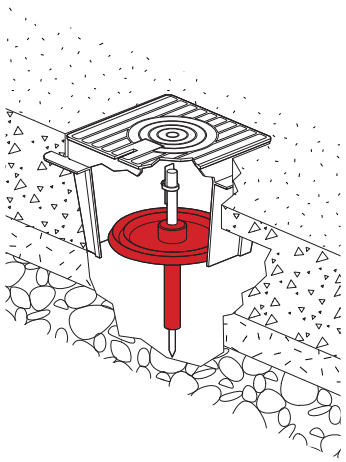
The earth rod seal is fitted when the earth rod connection is below the water level and where there is a possibility of water entering the inspection housing from below ground. The seal is particularly useful where internal earths are required such as in a basement building.

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 shown on page 27.

Single Flange

Earth Rod Type	Flange Ø mm	Pipe Length mm	Unit Weight kg	Pack Quantity	Part Number
15mm Ø	366	300	2.00	1	**PES 001-15**
16mm Ø					**PES 001-16**
20mm Ø					**PES 001-20**
5/8" UNC Threaded					**PES 001-58**
3/4" UNC Threaded					**PES 001-34**

Material: Plastic.



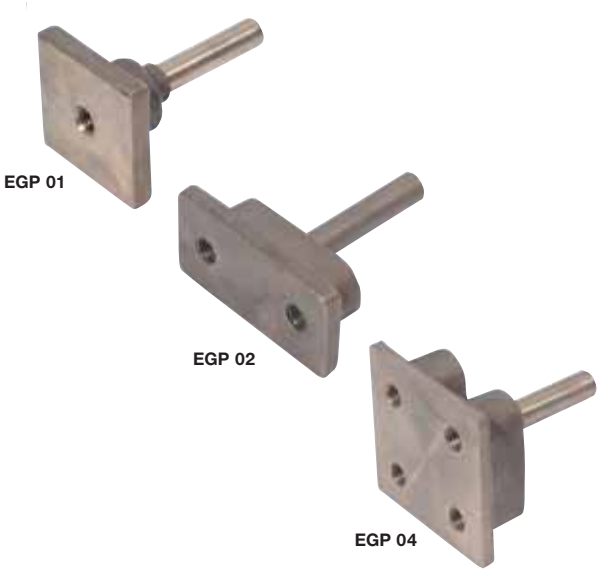
Double Flange (for deep concrete slab applications)

Earth Rod Type	Flange Ø mm	Pipe Length mm	Unit Weight kg	Pack Quantity	Part Number
15mm Ø	366	1200	3.20	1	**PES 002-15**
16mm Ø					**PES 002-16**
20mm Ø					**PES 002-20**
5/8" UNC Threaded					**PES 002-58**
3/4" UNC Threaded					**PES 002-34**

Material: Plastic.

Earth Bonding Points

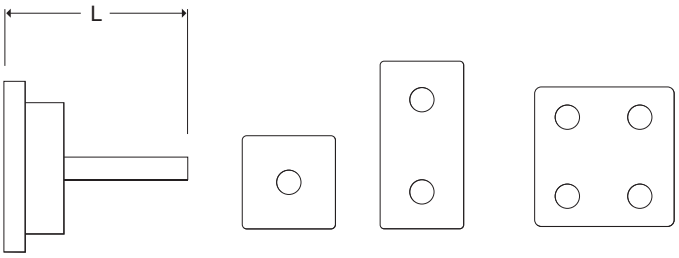
These Wallis earth bonding points are installed to provide a convenient earth system connection point in concrete structures. When cast into concrete they connect the re-bar to the earthing or lightning protection system.



Earth Bonding Points only

No. Holes	Hole Size mm	Plate Size mm	Stem Ø mm	L mm	Unit Weight kg	Pack Quantity	Part Number
1	M10 x 20	38 x 38	10.7 (70mm²)	75	0.16	10	**EPG 01**
2		70 x 35			0.29		**EPG 02**
4		65 x 65			0.54		**EPG 04**

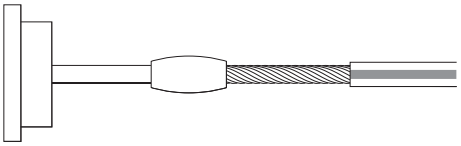
Material: Gunmetal.

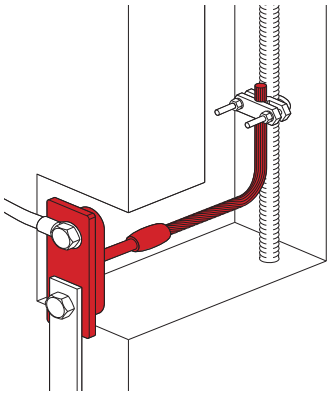


Earth Bonding Points with Pre-welded Tails

No. Holes	Type	Unit Weight kg	Pack Quantity	Part Number
1	EGP 01 with pre-welded 500mm long tail of 70mm² PVC insulated cable	0.64	1	**EGP 01 500**
2	EGP 02 with pre-welded 500mm long tail of 70mm² PVC insulated cable	0.77	1	**EGP 02 500**
	EGP 02 with pre-welded 1000mm long tail of 70mm² PVC insulated cable	1.14		**EGP 02 1000**
	EGP 02 with pre-welded 1500mm long tail of 70mm² PVC insulated cable	1.50		**EGP 02 1500**
4	EGP 04 with pre-welded 500mm long tail of 70mm² PVC insulated cable	1.02	1	**EGP 04 500**
	EGP 04 with pre-welded 1000mm long tail of 70mm² PVC insulated cable	1.39		**EGP 04 1000**
	EGP 04 with pre-welded 1500mm long tail of 70mm² PVC insulated cable	1.75		**EGP 04 1500**

Material: Gunmetal body with PVC insulated copper cable tail.



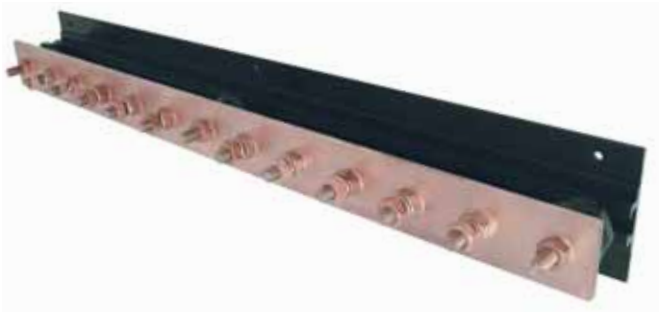


Earth Bars

Earth bars are available in a variety of sizes and specifications. Our standard earth bars are shown in the tables below. Special earth bars manufactured to customer requirements are also available.

Recommended fixing by countersunk wood screw 1 1/2" x No. 12 and No. 12 wall plug.

EBC 006



EBC 010

EBC 106

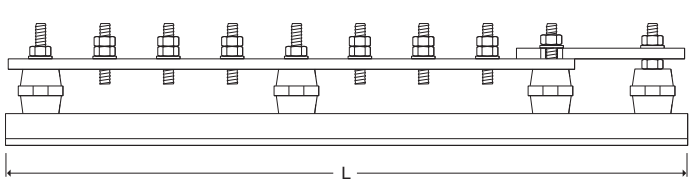
EBC 108

Earth Bars

No. Terminations	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	400	90	60	2.00	1	**EBC 006**
8	500			2.30		**EBC 008**
10	650			3.20		**EBC 010**
12	750			4.00		**EBC 012**
14	850			4.90		**EBC 014**
16	950			5.80		**EBC 016**
18	1100			6.70		**EBC 018**
20	1250			7.60		**EBC 020**
22	1300			8.50		**EBC 022**
24	1400			9.40		**EBC 024**
26	1550			10.30		**EBC 026**
28	1650			11.20		**EBC 028**
30	1800			12.10		**EBC 030**

Earth Bars with Single Disconnecting Link

No. Terminations	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	485	90	60	2.50	1	**EBC 106**
8	585			3.00		**EBC 108**
10	735			3.90		**EBC 110**
12	835			4.70		**EBC 112**
14	935			5.60		**EBC 114**
16	1035			6.50		**EBC 116**
18	1185			7.40		**EBC 118**
20	1335			8.30		**EBC 120**
22	1385			9.20		**EBC 122**
24	1485			10.10		**EBC 124**
26	1635			11.00		**EBC 126**
28	1735			11.90		**EBC 128**
30	1885			12.80		**EBC 130**



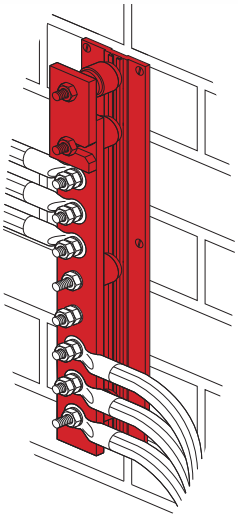
Earth Bars (continued)

Earth Bars with Double Disconnecting Links.

No. Terminations	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	570	90	60	3.10	1	**EBC 206**
8	670			3.70		**EBC 208**
10	820			4.50		**EBC 210**
12	920			5.30		**EBC 212**
14	1020			6.20		**EBC 214**
16	1120			7.10		**EBC 216**
18	1270			8.00		**EBC 218**
20	1420			8.90		**EBC 220**
22	1470			9.80		**EBC 222**
24	1570			10.70		**EBC 224**
26	1720			11.60		**EBC 226**
28	1820			12.50		**EBC 228**
30	1885			13.40		**EBC 230**

Material:
Bar: 50 x 6mm hard drawn copper bar to BS EN 13601.
Base: Plastic.
Fittings: M10 Hexagon Head Set Screws, Nuts & Washers.

EBC 206



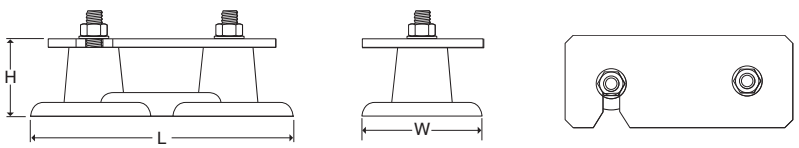
Disconnecting Link

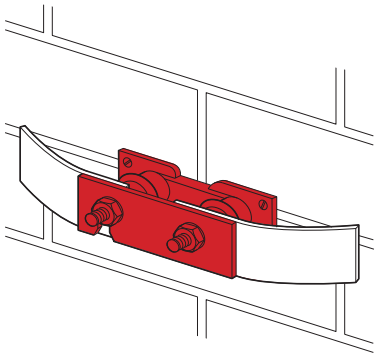
The disconnecting link provides a temporary break in the earth connection to allow inspection and testing of the earth electrode.

L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
120	45	45	0.6	1	**EBC 100**

Material:
Bar: 50 x 6mm hard drawn copper bar to BS EN 13601.
Base: Plastic.

EBC 100



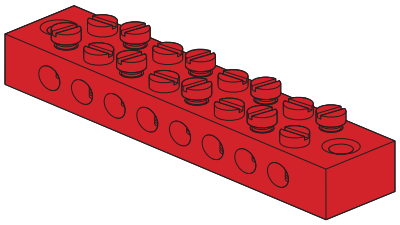


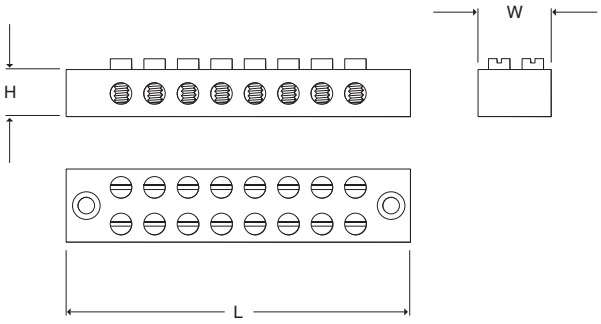
Earth Blocks

These Wallis blocks allow earth conductor termination, or live conductor termination with a suitable, fully insulated housing.

Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
4-Way Single	54	9	12	0.06	10	**EBB 004/1**
4-Way Double	51	18		0.09		**EBB 004**
8-Way Single	88	18		0.15		**EBB 008**

Material: Tinned Brass.



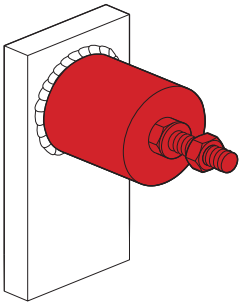


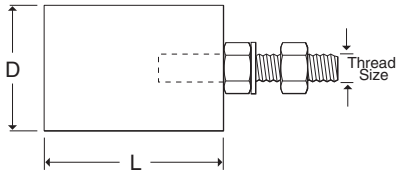
Earth Bosses

The earth boss is designed to provide an earth connection point on a steel structure. The boss is welded onto steel vessels, tanks and other structures

D mm	L mm	Thread Size	Unit Weight kg	Pack Quantity	Part Number
50	50	M10	0.77	1	**EPB 5050**
50	40		0.62		**EPB 5040**
50	30		0.47		**EPB 5030**
40	40		0.47		**EPB 4040**
40	30		0.35		**EPB 4030**

Material: Mild Steel with Stainless Steel fittings.





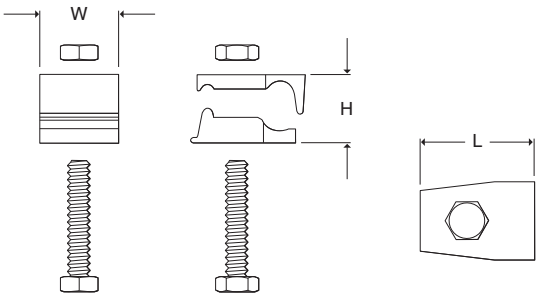
Tower Earth Clamps

Tower earth clamps are used for bonding copper conductors onto steel surfaces.

The double-plate design provides a robust fixing in areas where cladding may be installed or where the complete clamp will be covered by concrete. The clamp is fixed by drilling a hole in the steelwork and securing with the set screw provided.

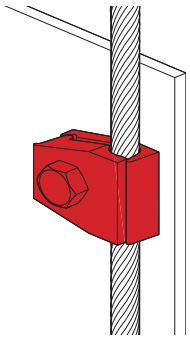
Conductor Range mm²	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
16 - 70	45	30	17	M10 x 50mm	0.12	10	**BTC 070**
70 - 120	48	35	22	M12 x 60mm	0.23		**BTC 120**
120 - 185	55	40	28	M12 x 75mm	0.30		**BTC 185**
185 - 240	63	45	35	M12 x 80mm	0.40		**BTC 240**
240 - 300	70	53	42	M12 x 90mm	0.60		**BTC 300**

Material: Gunmetal.



BTC 120

BTC 070

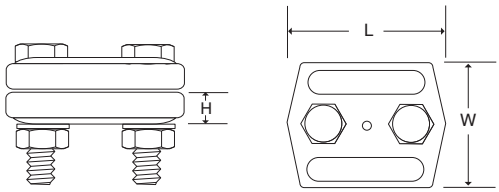


Parallel Groove Clamps

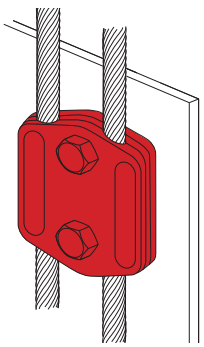
Wallis Parallel Groove Clamps, for stranded copper cable connections, are manufactured from high-strength, corrosion-resistant copper alloy and assembled with two stainless steel set screws.

Conductor Range mm²	L mm	W mm	H mm	Set Screws	Unit Weight kg	Pack Quantity	Part Number
25 - 70	50	40	7	M8 x 35mm	0.38	10	**PGC 070**
70 - 95	54	45	8.5	M10 x 45mm	0.46		**PGC 095**
95 - 185	65	57	12.5	M10 x 55mm	0.55		**PGC 185**
185 - 240	78	71	14	M10 x 55mm	0.66		**PGC 240**
240 - 300	94	85	16	M10 x 60mm	0.78		**PGC 300**

Material: Gunmetal.



PGC 095

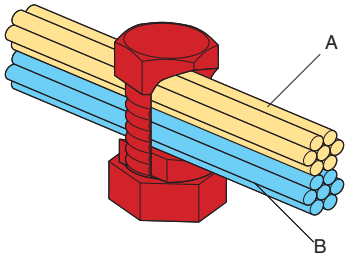


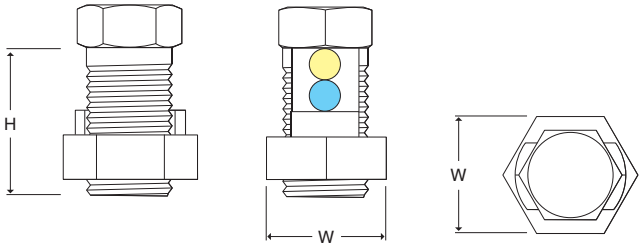
Split Bolt Connectors

The high strength split bolt connectors will accept a wide range of stranded copper conductors. No specialist tools are required for installation.

Main Conductor A mm²	Tap Conductor B mm²	H mm	W mm	Unit Weight kg	Pack Quantity	Part Number
10	1.5 - 10	20	4.1	0.02	200	**SBC 010**
16	2.5 - 16	23	5.3	0.03	150	**SBC 016**
25	2.5 - 25	28	6.8	0.04	100	**SBC 025**
35	2.5 - 35	29	7.9	0.05	80	**SBC 035**
50	2.5 - 50	35	9.5	0.08	50	**SBC 050**
70	2.5 - 70	39	10.7	0.12	35	**SBC 070**
95	2.5 - 95	45	13.5	0.15	20	**SBC 095**
120	10 - 120	47	14.7	0.18	20	**SBC 120**
150	10 - 150	51	16.2	0.23	10	**SBC 150**
185	50 - 185	57	17.8	0.35	10	**SBC 185**
240	95 - 240	64	19	0.46	10	**SBC 240**

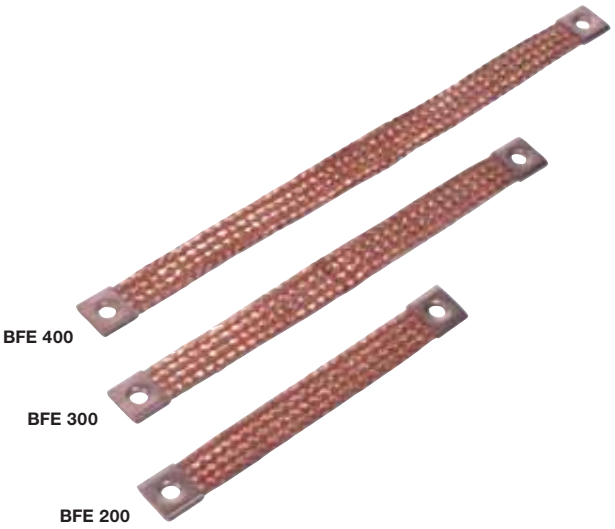
Material: Gunmetal.





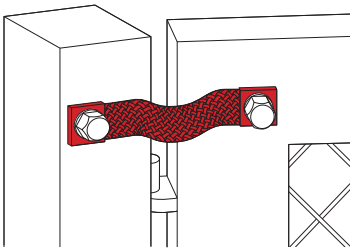
Flexible Copper Braid Bonds

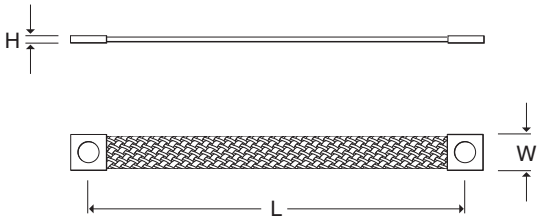
These flexible copper braid bonds are used for bonding metal gates, doors, fences etc. Other lengths and sizes are available on request.



Size W x H mm	Hole Centres L mm	Hole Size mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3.5	200	11	0.04	10	**BFE 200**
	300		0.07		**BFE 300**
	400		0.15		**BFE 400**

Material: Copper.



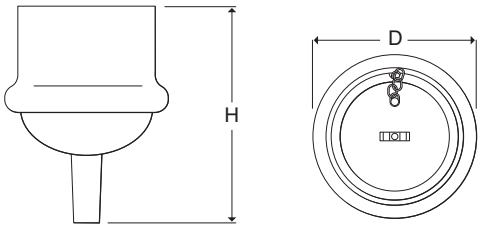


Static Earth Receptacle

This receptacle is used in open areas where a temporary earthing point may be required, such as airfields or petrol stations. Provides a static discharge point for aircraft, tankers, vehicles and boats.

H mm	D mm	Unit Weight kg	Pack Quantity	Part Number
135	125	6.50	1	**ERX 05**

Material: Gunmetal.

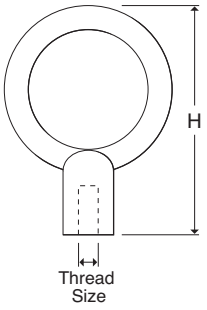


Eyebolts

Provides a static earth point when attached to the top of a threaded copperbond earth rod.

Thread Size (UNC-2A)	H mm	Unit Weight kg	Pack Quantity	Part Number
5/8"	135	0.62	1	**EYE 058**
3/4"		0.55		**EYE 034**

Material: Gunmetal.

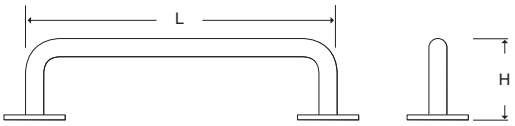


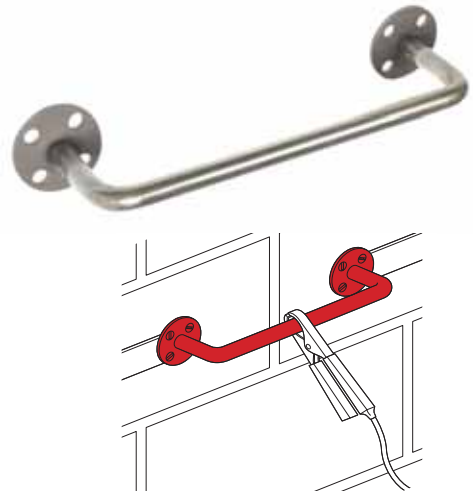
Static Earth Bar

This wall-mounted bracket provides a temporary earth point.

L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
350	100	1.52	1	**ERY 10**

Material: Phosphor Bronze.






CCC 035


CCC 070

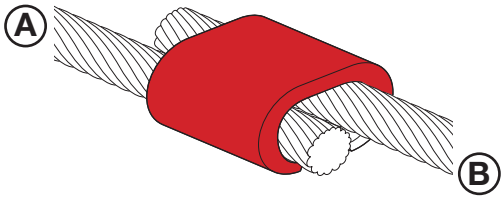

CCC 240

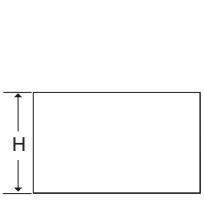
‘C’ Crimp Connectors

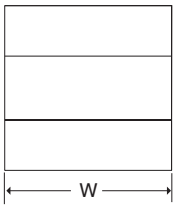
These range-taking ‘C’ Crimp Connectors are specifically designed for tap and parallel connections of stranded copper cables in earthing applications.

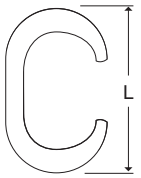
Main Conductor A mm²	Tap Conductor B mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
10	4 - 10	12	9	13	0.01	100	**CCC 010**
10 - 16	10 - 16	17	12	19	0.01	100	**CCC 016**
16	4	17	12	19	0.01	100	**CCC 016**
16 - 25	1.5 - 10	12	13	20	0.02	100	**CCC 25-10**
25	10 - 16	19	12	21	0.02	50	**CCC 25PM**
25	10 - 25	20	15	24	0.04	50	**CCC 025**
35	1.5 - 16	20	15	24	0.04	50	**CCC 025**
35	25 - 35	20	15	27	0.05	50	**CCC 035**
50	4 - 16	20	15	27	0.05	50	**CCC 035**
50	16 - 50	20	17	27	0.07	50	**CCC 050**
70	1.5 - 25	20	17	27	0.07	25	**CCC 050**
50 - 70	4 - 35	28	21	33	0.09	25	**CCC 70-35**
50 - 70	35 - 70	28	21	34	0.10	25	**CCC 070**
70 - 95	35 - 70	30	26	41	0.10	25	**CCC 075**
95	4 - 35	30	26	41	0.11	25	**CCC 95-35**
70 - 95	95	30	26	41	0.12	25	**CCC 095**
120	35 - 120	30	28	45	0.12	25	**CCC 120**
150	6 - 70	30	28	45	0.12	25	**CCC 120**
150	95 - 150	30	28	45	0.15	10	**CCC 150**
120 - 185	95 - 185	35	33	54	0.20	10	**CCC 185**
150 - 185	70 - 150	35	33	54	0.20	10	**CCC 185**
240	95 - 120	37	34	54	0.24	10	**CCC 240-120**
240	150 - 240	40	34	54	0.24	10	**CCC 240**

Material: Copper.









Compression Terminals

Wallis cable terminals are manufactured from high-conductivity seamless copper tube and feature bell mouth entry for cables up to 500mm^2 and chamfered entry for cables 500m^2 to 1000mm^2.

All terminals are annealed, to avoid cracking and splitting when crimped, and electro-tin plated to combine maximum electrical conductivity with mechanical strength. An inspection hole is provided to check cable location prior to crimping.

Conductor Size mm^2	Palm Hole Size mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
6	4	21	9	0.01	100	**CLG 64**
	5	24	10			**CLG 65**
	6	24	11			**CLG 66**
	8	25	12			**CLG 68**
	10	26	12			**CLG 610**
10	5	26	11	0.01	100	**CLG 105**
	6	26	11			**CLG 106**
	8	29	13			**CLG 108**
	10	39	16			**CLG 1010**
	12	39	18			**CLG 1012**
16	6	30	11	0.01	100	**CLG 166**
	8	30	13			**CLG 168**
	10	35	15			**CLG 1610**
	12	42	18			**CLG 1612**
25	6	32	14	0.01	50	**CLG 256**
	8	32	14			**CLG 258**
	10	38	16			**CLG 2510**
	12	38	18			**CLG 2512**
35	6	35	15	0.01	50	**CLG 356**
	8	35	15			**CLG 358**
	10	40	15			**CLG 3510**
	12	40	18			**CLG 3512**
	14	43	20			**CLG 3514**
50	6	37	17	0.02	50	**CLG 506**
	8	37	17			**CLG 508**
	10	42	17			**CLG 5010**
	12	42	17			**CLG 5012**
	14	45	20			**CLG 5014**
70	6	40	21	0.04	50	**CLG 706**
	8	40	21			**CLG 708**
	10	46	21			**CLG 7010**
	12	46	21			**CLG 7012**
	14	50	21			**CLG 7014**
	16	50	21			**CLG 7016**
95	6	47	25	0.06	25	**CLG 956**
	8	49	25			**CLG 958**
	10	49	25			**CLG 9510**
	12	49	25			**CLG 9512**
	14	56	25			**CLG 9514**
	16	56	25			**CLG 9516**

Table continues on page 40.

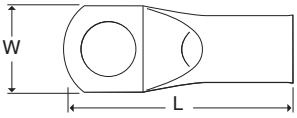
CLG 68

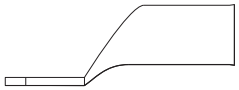
CLG 1010

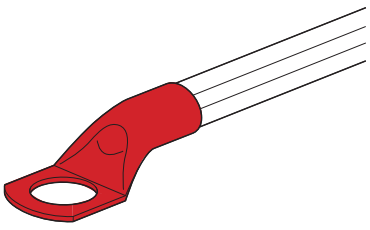
CLG 258

CLG 506

CLG 9510





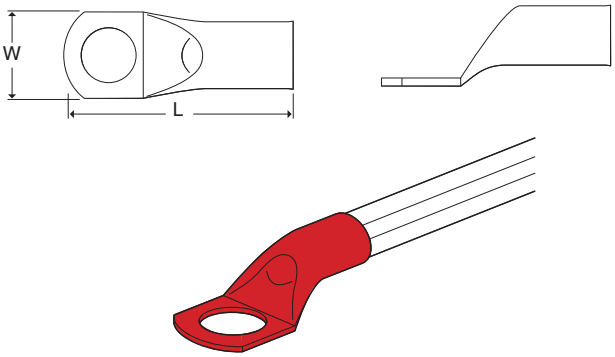


CLG 1208

CLG 15012

CLG 24014

CLG 30016

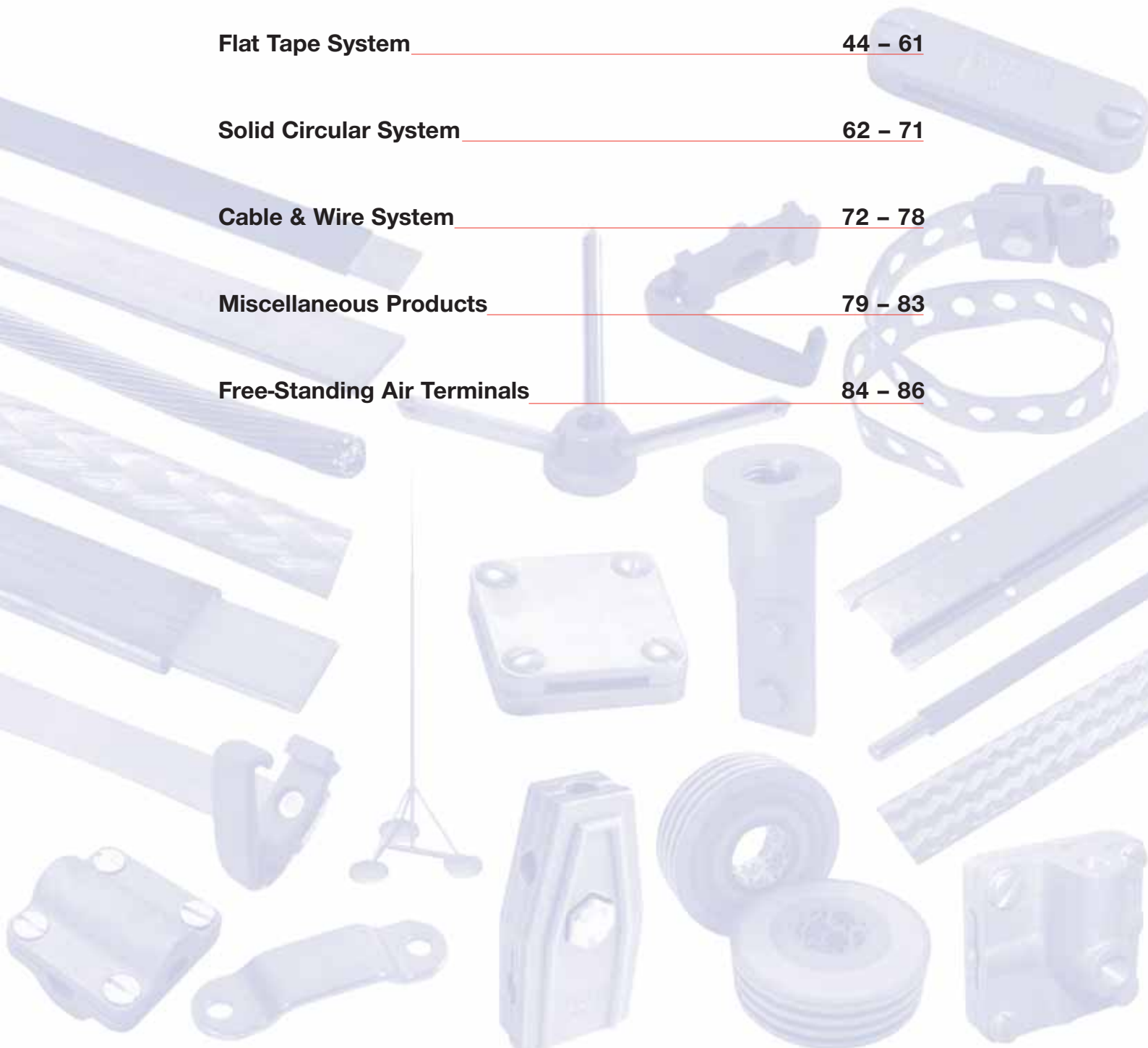


Compression Terminals (continued)

Conductor Size mm²	Palm Hole Size mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
120	8	50	27	0.07	25	**CLG 1208**
	10	56	27			**CLG 12010**
	12	56	27			**CLG 12012**
	14	56	27			**CLG 12014**
	16	60	27			**CLG 12016**
	20	66	27			**CLG 12020**
150	8	66	30	0.09	25	**CLG 1508**
	10	68	30			**CLG 15010**
	12	68	30			**CLG 15012**
	14	68	30			**CLG 15014**
	16	70	30			**CLG 15016**
	20	75	30			**CLG 15020**
185	10	67	33	0.10	10	**CLG 18510**
	12	68	33			**CLG 18512**
	14	68	33			**CLG 18514**
	16	70	33			**CLG 18516**
	20	75	33			**CLG 18520**
240	10	88	38	0.14	10	**CLG 24010**
	12	88	38			**CLG 24012**
	14	88	38			**CLG 24014**
	16	88	38			**CLG 24016**
	20	88	38			**CLG 24020**
300	10	97	41	0.17	10	**CLG 30010**
	12	97	41			**CLG 30012**
	14	97	41			**CLG 30014**
	16	97	41			**CLG 30016**
	20	97	41			**CLG 30020**
400	12	108	47	0.20	10	**CLG 40012**
	14	108	47			**CLG 40014**
	16	108	47			**CLG 40016**
	20	108	47			**CLG 40020**
500	16	117	53	0.50	5	**CLG 50016**
	18	117	53			**CLG 50018**
	20	117	53			**CLG 50020**
630	16	127	63	0.8	5	**CLG 63016**
	18	127	63			**CLG 63018**
	20	127	63			**CLG 63020**
800	16	164	70	1.00	5	**CLG 80016**
	18	164	70			**CLG 80018**
	20	164	70			**CLG 80020**
1000	18	164	77	1.30	5	**CLG 100018**
	20	164	77			**CLG 100020**

Material: Tin Plated Copper.

LIGHTNING PROTECTION



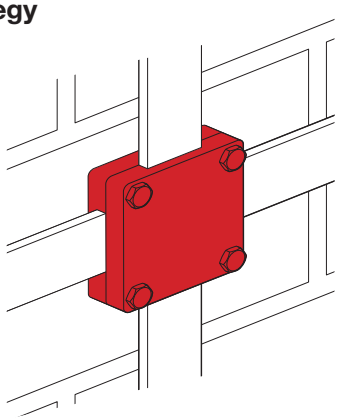
Structural Lightning Protection

Introduction

If correctly installed, fitting a lightning protection system (LPS) will minimise the risk of damage to structures and injury to personnel by conducting high discharge currents safely to earth. Protection against the secondary effects of lightning to internal electrical equipment, known as transient over voltage protection is achieved by the use of transient over voltage protectors; this is in addition to the LPS.

A LPS cannot protect against over voltage transients. Over voltage transient protectors cannot protect against direct lightning strikes. Both are required for total structural and equipment protection.

Lightning Protection Strategy



The normal strategy in achieving protection is to capture the lightning at a preferred point by the use of air terminations and conducting it via low impedance down conductors and earth electrodes to a low resistance earth of less than ten ohms. Air terminations and down conductors are spaced at regular intervals to form a mesh of conductors around the perimeter of the building and roof, known as a Faraday cage, and are joined together by specially produced clamps and fixings or welding.

Lightning Protection System Design Considerations

An LPS is designed according to geographical location, local terrain, soil conditions, size and height of building, type of material used in construction, type of material stored in the building, use of building and is based on established standards for risk assessment.

Air Termination Networks

The recommended spacing between conductors varies according to risk and is detailed in internationally recognised European and British lightning protection standards. E.g., a mesh of conductors of 10 by 20 metres is considered sufficient for most applications; however, a high risk structure may require a 10 by 10 mesh.

There are two methods used to calculate the area immediately around a building protected by the air termination; the “zone of protection” is used for buildings up to 20 metres; for buildings above this height the “rolling sphere” method is used.

Down Conductors

The recommended spacing between down conductors varies according to risk and is detailed in internationally recognised European and British lightning protection standards. E.g., conductors may be spaced at 20 metres for some buildings but this distance could be reduced to 10 metres for tall or high risk buildings. Down conductors should be positioned as evenly as possible around the outside walls of the structure, starting from the corners.

Minimum distances must be maintained to prevent side flashing. Re-entrant loops are also to be avoided.

Earth Terminations & Networks

The information contained in this section primarily refers to Lightning Protection Earthing Systems (LPS) and does not detail all earthing requirements for electrical wiring, although there are some similarities. Please refer to the IEE 16th edition wiring regulations for more details.

An earth electrode should be connected to each down conductor of a lightning protection system (LPS). Earth rods may need an earth inspection housing for periodic testing of earth resistance.

Earth rods are used in most applications and are driven into the ground as close as is practicable to the structure and the down conductor. They are normally spaced at specified intervals corresponding to the spacing on the down conductors.

Resistance to Earth

For an LPS the earth termination network as a whole should have a combined resistance of not more than ten ohms, before bonding to building metalwork. However, the maximum resistance value for earthing systems is application specific.

A single earth rod may not achieve the required resistance figure and several may be need to be fitted to achieve this; their combined resistance is proportional to the reciprocal of the individual rod resistances to earth. This rule holds true as long as each rod is situated outside the resistance area of any other. To ensure this is the case, it is generally accepted that the minimum spacing between rods should not be less than their driven length.

The expected number of rods required to obtain a particular resistance value, e.g. ten ohms, can be roughly calculated. To do this the soil resistivity needs to be taken into consideration. A soil resistivity test will need to be performed.

There are several methods used to obtain a lower resistance value:

- More rods can be driven.
- Rods can be driven deeper.
- Rods of a larger diameter can be used.
- Ring conductors connecting rods together underground can be used.

Where deep driving is not possible shorter rods with a larger diameter can be used; copper earth mats and earth plates can be used in place of earth rods.

A “crow’s foot” configuration can be used where parallel connection is not possible.

Where high resistance soil conditions are a problem soil conditioning agents can be used to backfill rod holes. Conductive concrete can be used to backfill an earth mat. Both effectively increase an electrodes cross sectional area and therefore reduce its resistance to earth.

The international standards also specify the recommended materials used for all earthing conductors and their dimensions.

Equipotential Bonding

It is common practice to use the buildings natural structural steelwork and bonding it to the LPS to further improve its ability to conduct lightning and fault currents to earth; prior permission may be required.

Joints

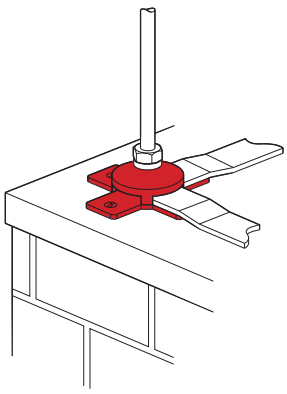
Joints should be mechanically effective, all joints other than welded ones are a potential discontinuity, and care should be taken to ensure contact surfaces are clean and that fixing

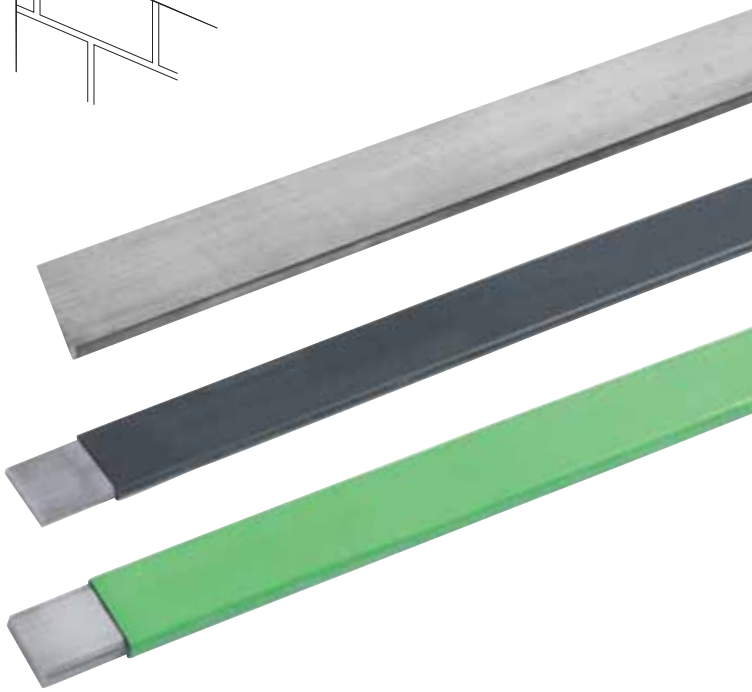
clamps are tight and well protected from corrosion, which can occur if dissimilar metals are joined. Ideally there should be as few joints as possible in an LPS design.

Maintenance & Life of an LPS

It is important to properly maintain an LPS to ensure it retains its ability to conduct the same current carrying capacity as it did when it was originally installed. Earth rod resistances should be regularly checked. Corrosion and fault currents can cause high resistance joints leading to overheating. However, if an LPS is correctly installed and maintained it should last for many years.

The information contained in this section is intended as a guide and should not be used to perform designs. A.N.Wallis does not accept responsibility for errors or omissions. Detailed information on LPS design is contained in internationally recognised European and British LPS standards.





Taper Pointed Air Rods

Air rods form an important part of the air termination network of a lightning protection system. All of our air rods are supplied with a locknut enabling the rod to be locked tight against the conductor. Please see pages 45 - 47 for further information on our range of saddles, brackets and couplings.

Copper Air Rods

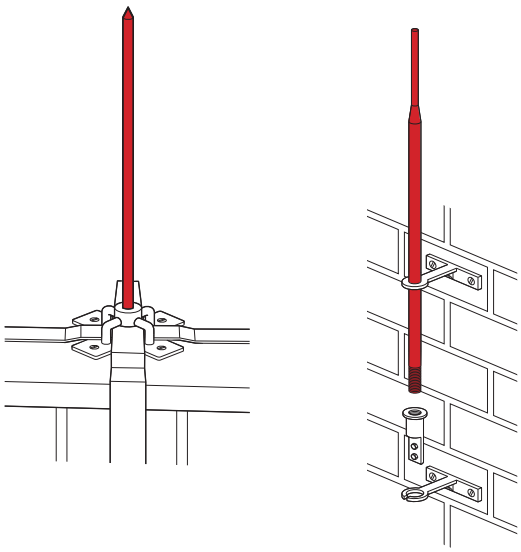
Thread Size	L mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
M16	300	41	0.53	5	**ATC 112M**
	500		0.85		**ATC 120M**
	1000		1.70		**ATC 139M**
	1500		2.59		**ATC 160M**
	2000		3.47		**ATC 179M**
M20	300	41	0.80	5	**ATC 212M**
	500		1.34		**ATC 220M**
	1000		2.68		**ATC 239M**
	1500		4.02		**ATC 260M**
	2000		5.36		**ATC 279M**

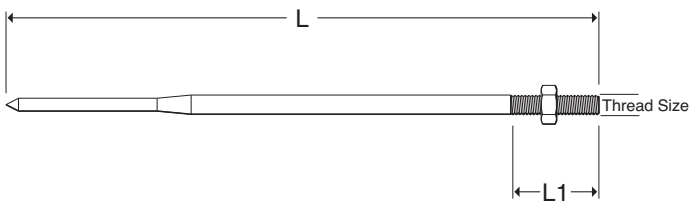
Material: Copper.

Aluminium Air Rods

Thread Size	L mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
M16	300	41	0.18	5	**ATA 112M**
	500		0.29		**ATA 120M**
	1000		0.57		**ATA 139M**
	1500		0.98		**ATA 160M**
	2000		1.09		**ATA 179M**

Material: Aluminium.



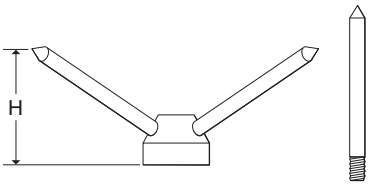


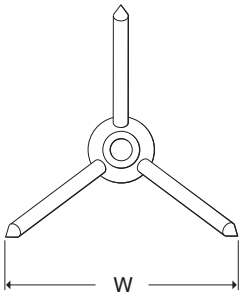
Multi-Point

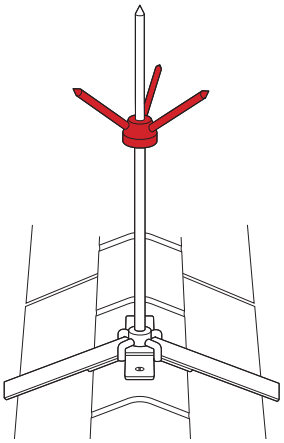
Used in conjunction with the taper pointed copper air rods.

Air Rod Ø mm	H mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16 & 20	156	72	0.30	5	**MPC 16**

Material: Gunmetal base with Copper spikes.







Light Duty Air Rod Saddles

Light duty saddles are used to support air rods on flat roof surfaces.

For use with Copper Air Rods

Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	101	37	0.43	5	**ASGL 16M**
M20					**ASGL 20M**

Material: Gunmetal.

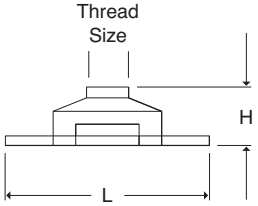
For use with Aluminium Air Rods

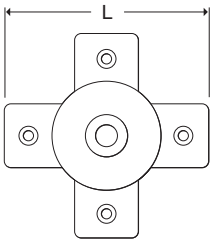
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	101	37	0.15	5	**ASAL 16M**

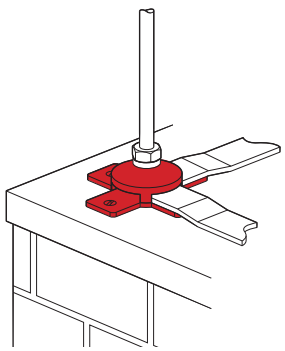
Material: Aluminium.

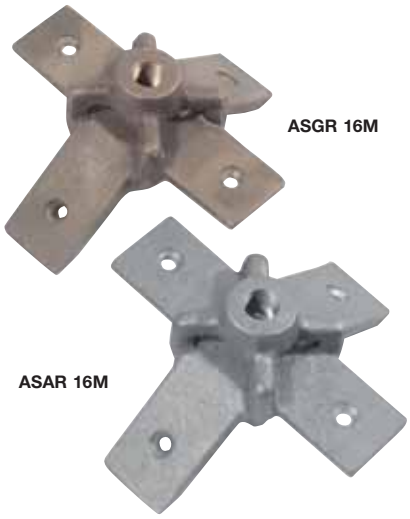
ASGL 16M

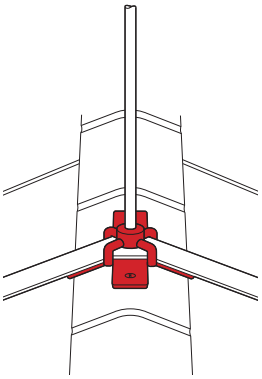
ASAL 16M











Air Rod Ridge Saddles

Ridge saddles are used to support air rods on roof ridges.

For use with Copper Air Rods

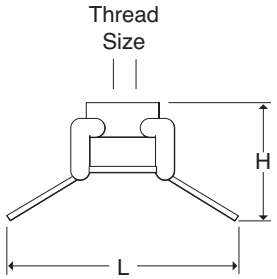
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	34	0.70	5	**ASGR 16M**

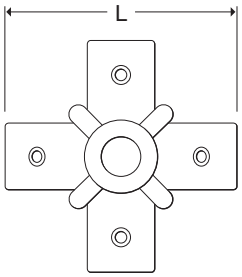
Material: Gunmetal.

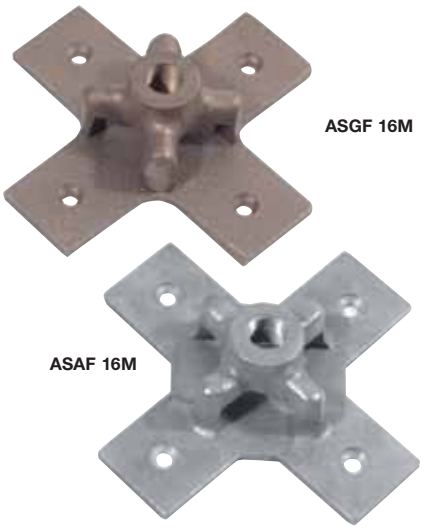
For use with Aluminium Air Rods

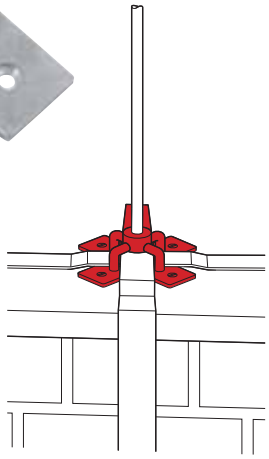
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	34	0.70	5	**ASAR 16M**

Material: Aluminium.









Flat Air Rod Saddles

Flat saddles are used to support air rods on flat roof surfaces.

For use with Copper Air Rods

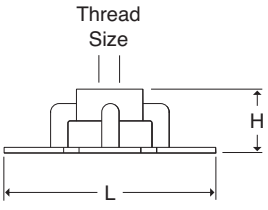
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	40	0.60	5	**ASGF 16M**

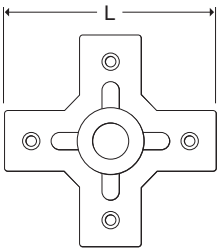
Material: Gunmetal.

For use with Aluminium Air Rods

Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	40	0.20	5	**ASAF 16M**

Material: Aluminium.





Side Mounting Air Rod Brackets

These brackets provide a 75mm projection from the building face and are used where it is not possible to fit a saddle onto the building roof. The brackets are used in conjunction with the rod to tape coupling used to secure the flat tape to the air rod.

For use with Copper Air Rods

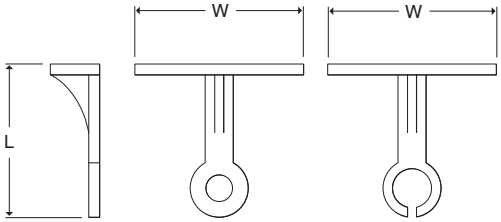
Rod Ø mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16	97	120	0.39	5	**AMBG 16**
20			0.43		**AMBG 20**

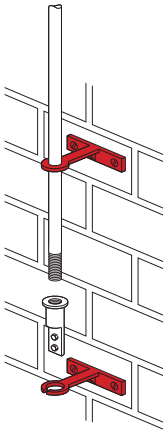
Material: Gunmetal.

For use with Aluminium Air Rods

Rod Ø mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16	97	120	0.12	5	**AMBA 16**

Material: Aluminium.





Rod to Tape Couplings

Enables the flat tape to be connected to the air rod. Used in conjunction with the side mounting air rod brackets.

For use with Copper Air Rods

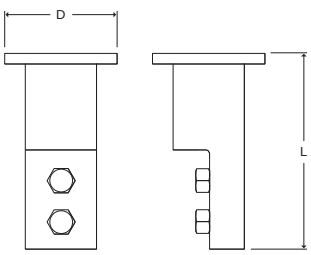
Thread Size	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
M16	80	40	0.22	5	**AOG 16M**
M20					**AOG 20M**

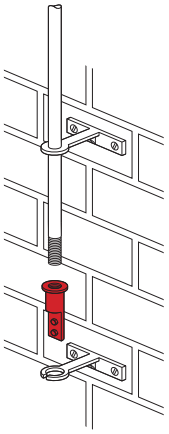
Material: Gunmetal.

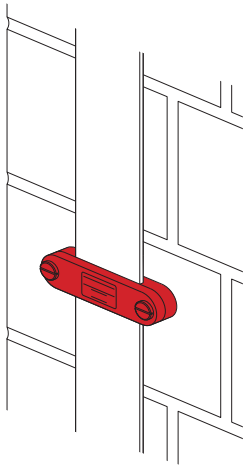
For use with Aluminium Air Rods

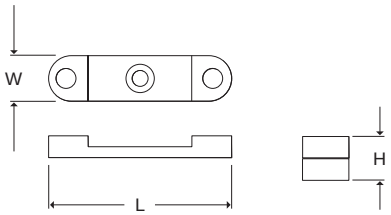
Thread Size	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
M16	80	40	0.10	5	**AOA 16M**

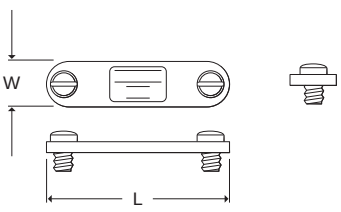
Material: Aluminium.











Metallic DC Clips

Metallic DC clips secure the flat tape conductor to the building surface. Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

For use with Bare Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
20 x 3	50	20	10	0.06	50	**DCG 203**
25 x 3	50		10	0.06	50	**DCB 253**
25 x 4	50		10	0.06	50	**DCG 254**
25 x 6	50		12	0.06	50	**DCG 256**
31 x 3	60		10	0.08	25	**DCG 313**
31 x 6	60		13	0.09	25	**DCG 316**
38 x 3	64		10	0.08	25	**DCG 383**
38 x 5	64		13	0.10	25	**DCG 385**
38 x 6	64		13	0.10	25	**DCG 386**
50 x 3	80		10	0.10	25	**DCG 503**
50 x 4	80		11	0.10	25	**DCG 504**
50 x 6	80		14	0.14	25	**DCB 506**
50 x 8	80		14	0.14	25	**DCG 508**

Material: Gunmetal.

For use with PVC Covered Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	55	20	14	0.06	25	**DGP 253**
25 x 6	58		18	0.11		**DGP 256**
50 x 6	91		19	0.20		**DGP 506**

Material: Gunmetal.

For use with Lead Covered Copper Tape

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	77	27	25	0.34	25	**DCL 253**

Material: Phosphor Bronze.

For use with Bare Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	55	20	10	0.02	25	**DCA 253**
25 x 6	50		13	0.03		**DCA 256**
50 x 6	80		16	0.04		**DCA 506**

Material: Aluminium.

For use with PVC Covered Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	55	20	20	0.03	25	**DAP 253**
50 x 6	85		23	0.04		**DAP 506**

Material: Aluminium.

Non-Metallic DC Clips

This one-piece clip, with integral hinged lid, means no lost or dropped lids. The clips are UV stabilised to prevent degradation from sunlight and are non-brittle to protect against cold weather.

Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

For use with Bare Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
20 x 3	55	18	16	Brown	0.01	100	**NM 203 B**
25 x 3	50	18	16				**NM 253 B**
50 x 6	80	25	26				**NM 506 B***

Material: Polypropylene.

* NM506B is a two-piece clip

For use with Bare Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
20 x 3	50	18	16	Grey	0.01	100	**NM 203 G**
25 x 3							**NM 253 G**

Material: Polypropylene.

For use with PVC Covered Copper & Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	50	18	16	Brown	0.01	100	**NP 253 B**
				Black			**NP 253 BL**
				Grey			**NP 253 G**
				Green			**NP 253 GR**
				Stone			**NP 253 S**
				White			**NP 253 W**

Material: Polypropylene.


NP 253 BL

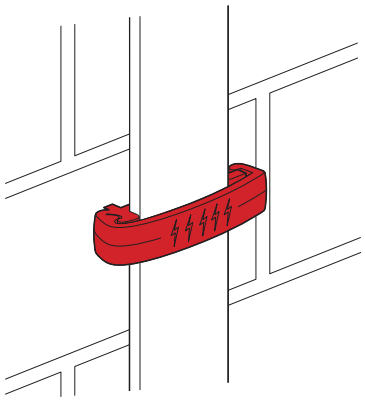

NP 253 W

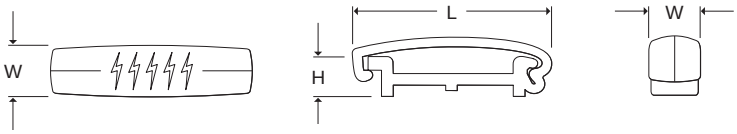

NP 253 G


NP 253 GR


NP 253 B


NP 253 S






NPP 253 BL


NPP 253 W


NPP 253 G


NPP 253 GR


NPP 253 B


NPP 253 S

Non-Metallic DC Clips with Plug

These one-piece clips have an integral fixing plug for ease of installation. The clips are UV stabilised to prevent degradation from sunlight and are non-brittle to protect against cold weather.

Fix using countersunk woodscrew 1½" x No. 10.

For use with Bare Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
20 x 3	50	18	16	Brown	0.01	100	NMP 203 B
25 x 3							NMP 253 B

Material: Polypropylene.

For use with Bare Aluminium Tapes

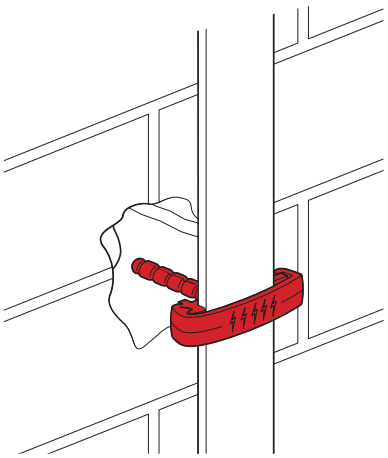
Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
20 x 3	50	18	16	Grey	0.01	100	NMP 203 G
25 x 3							NMP 253 G

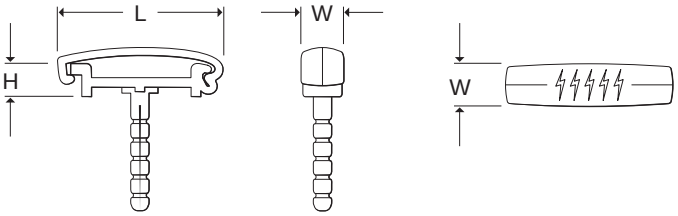
Material: Polypropylene.

For use with PVC Covered Copper & Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	50	18	16	Brown	0.01	100	NPP 253 B
				Black			NPP 253 BL
				Grey			NPP 253 G
				Green			NPP 253 GR
				Stone			NPP 253 S
				White			NPP 253 W

Material: Polypropylene.





Tape Clips

Wallis tape clips hold the flat tape conductor flush to the building surface.
Fix using countersunk woodscrews 1 1/2" x No. 10 and No. 10 wall plugs.

For use with Bare Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
20 x 3	68	20	7	0.03	50	**MTB 203**
25 x 3	70		7	0.03		**MTB 253**
50 x 6	73		8	0.05		**MTB 506**

Material: Copper.

MTB 253

For use with PVC Covered Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	70	20	7	0.03	50	**MPB 253**

Material: Copper.

MPB 253

For use with Bare Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
20 x 3	68	20	7	0.01	50	**MTA 203**
25 x 3	70					**MTA 253**

Material: Aluminium.

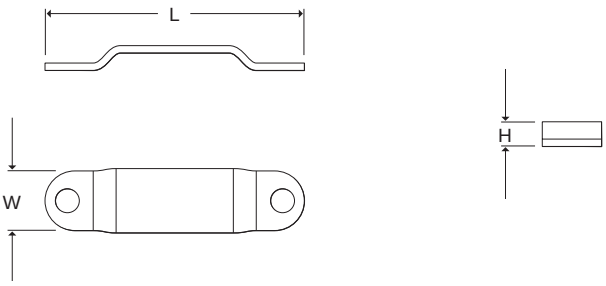
MTA 253

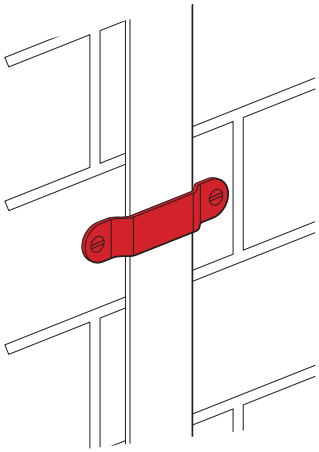
For use with PVC Covered Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	70	20	7	0.01	50	**MAP 253**

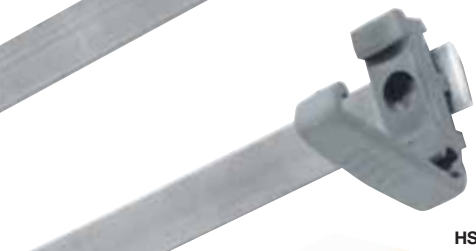
Material: Aluminium.

MAP 253





HSAL 253BL

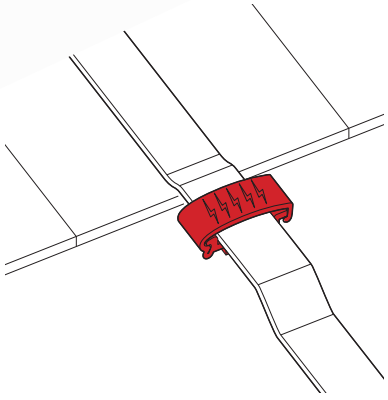


HSAL 253G

HSAL 253B

HSAL 253S

HSAL 253W



Slate Holdfasts

Wallis slate holdfasts provide a method for fixing the tape above the roof tiles without any drilling.

The aluminium tail slides underneath the tile and is fixed to the wooden beam with a nail, the non-metallic DC clip then protrudes from under the tile and offers a fixing for the tape.

For use with Bare Copper & Aluminium Tapes

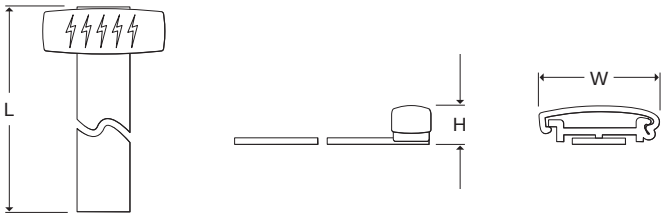
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	300	50	16	Brown	0.04	50	**HSAL 253 BM**
				Grey			**HSAL 253 GM**

Material: Polypropylene clip with Aluminium tail.

For use with PVC Covered Copper & Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	300	50	16	Brown	0.04	50	**HSAL 253 B**
				Black			**HSAL 253 BL**
				Grey			**HSAL 253 G**
				Stone			**HSAL 253 S**
				White			**HSAL 253 W**

Material: Polypropylene clip with Aluminium tail.



Weldable DC Clips

Comprises a weldable base assembled with a non-metallic DC clip. For use on PVC roofing membranes. See page 55 for details of Universal Welding Solvent.

For use with Bare Tape

Conductor Size mm	D mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	65	23	Grey	0.03	50	**WDC 080**

Material: PVC base with Polypropylene clip.

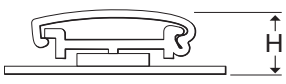
WDC 080

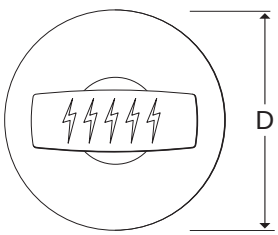
For use with PVC Covered Tapes

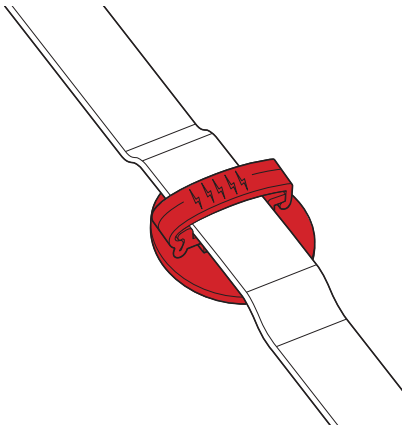
Conductor Size mm	D mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	65	23	Black	0.03	50	**WDC 120**
			Grey			**WDC 140**

Material: PVC base with Polypropylene clip.

WDC 120







ADC 080

ADC 060

ADC 180

ADC 120

ADC 160

Adhesive DC Clips

Comprises an adhesive base assembled with a non-metallic DC clip. For use on surfaces other than PVC roofing. See page 55 for details of Surface Primer.

For use with Bare Copper & Aluminium Tapes

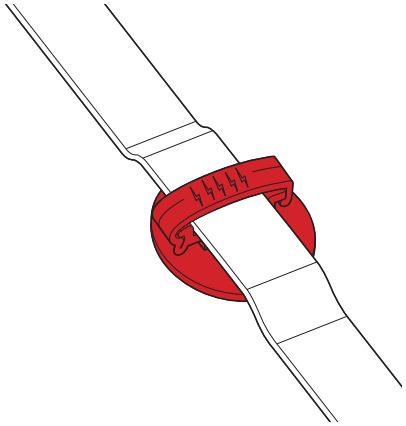
Conductor Size mm	D mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	65	23	Brown	0.03	50	**ADC 060**
			Grey			**ADC 080**

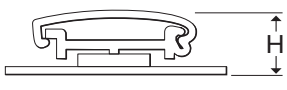
Material: Polycarbonate base with Polypropylene clip.

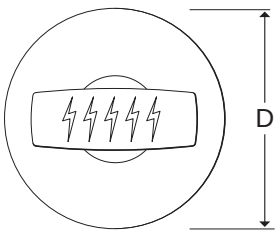
For use with PVC Covered Copper & Aluminium Tapes

Conductor Size mm	D mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	65	23	Brown	0.03	50	**ADC 100**
			Black			**ADC 120**
			Grey			**ADC 140**
			Stone			**ADC 160**
			White			**ADC 180**

Material: Polycarbonate base with Polypropylene clip.







Universal Welding Solvent, Cleaning Solution & Surface Primer

Type	Unit Weight kg	Pack Quantity	Part Number
Universal Welding Solvent 500ml spray applicator for use with weldable DC clips Sufficient for application of approx. 200 clips	0.57	1	**UWS 001**
Cleaning Solution (Acetone) 500ml spray applicator for cleaning lacquered roofing membranes	0.62		**CSA 001**
Surface Primer 250ml spray applicator for use with adhesive DC clips Sufficient for application of approx. 500 clips	0.24		**PRIMER**

CoSHH datasheets are available on request.

PRIMER

UWS 001

CSA 001

Bitumen Felt DC Clips

For use on bitumen felt roofing only.

For use with Bare Copper & Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	100	100	23	Brown	0.06	50	**BDC 060**
				Grey			**BDC 080**

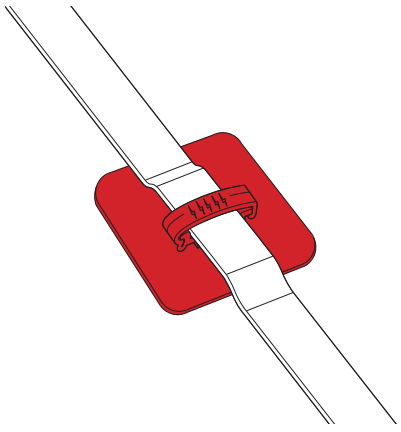
Material: Bitumen Felt base with Polypropylene clip.

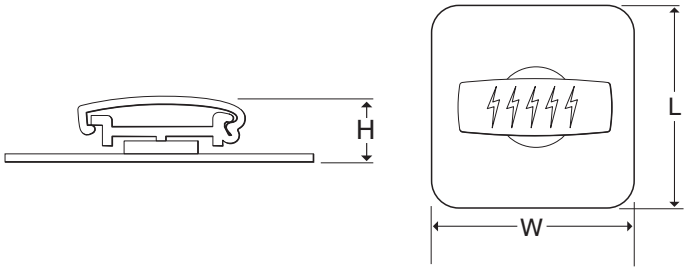
BDC 060

For use with PVC Covered Copper & Aluminium Tapes

Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	100	100	23	Brown	0.06	50	**BDC 100**
				Black			**BDC 120**
				Grey			**BDC 140**
				Stone			**BDC 160**
				White			**BDC 180**
				Green			**BDC 200**

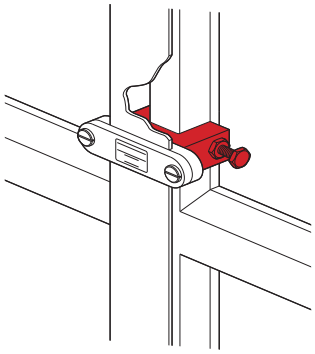
Material: Bitumen Felt base with Polypropylene clip.





HGG 253

HGA 253



Glazing Bar Holdfasts

Originally designed to be used on glazing units but can be installed wherever conductor has to be fixed onto a narrow flange. The holdfast is assembled with a fixing screw for use with a metallic or non-metallic DC clip.

For use with Copper Tapes

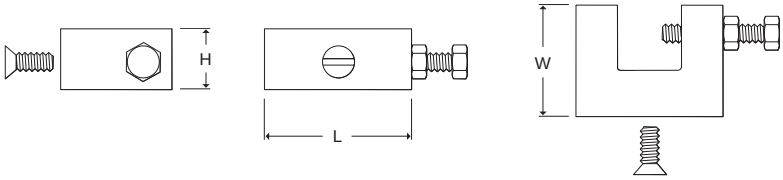
L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
35	22	20	0.12	10	**HGG 253**

Material: Gunmetal.

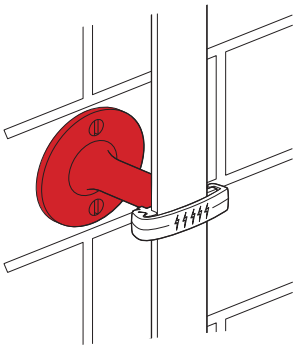
For use with Aluminium Tapes

L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
35	22	20	0.04	10	**HGA 253**

Material: Aluminium.



HBG 001



Back Plate Holdfasts

Designed to be used where it is necessary to hold the conductor away from the building surface. The holdfast is assembled with a fixing screw for use with a metallic or non-metallic DC clip.

For use with Copper Tapes

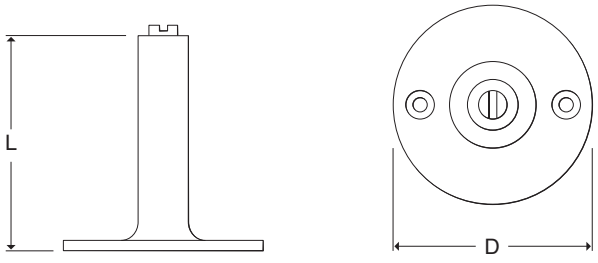
L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
74	63	0.33	5	**HBG 001**

Material: Gunmetal.

For use with Aluminium Tapes

L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
74	63	0.15	5	**HBA 001**

Material: Aluminium.



Square Tape Clamps

These Wallis four-way connectors are suitable for making cross, straight through or tee joints in flat tape. The base has a countersunk hole in the middle for securing the clamp to the building surface and the lid is fixed by means of four screws.

Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

For use with Bare Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	50	50	13	0.15	25	**JG 253**
25 x 6	50	50	20	0.25	25	**JG 256**
31 x 3	60	60	14	0.22	25	**JG 313**
38 x 6	71	71	22	0.59	25	**JG 386**
50 x 3	80	80	16	0.50	10	**JG 503**
50 x 6	79	79	22	0.52	10	**JG 506**

Material: Gunmetal.

For use with Lead Covered Copper Tape

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	70	70	25	0.86	25	**JPB 253 L**

Material: Phosphor Bronze.

For use with Bare Aluminium Tape

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	50	50	13	0.07	25	**JA 253**

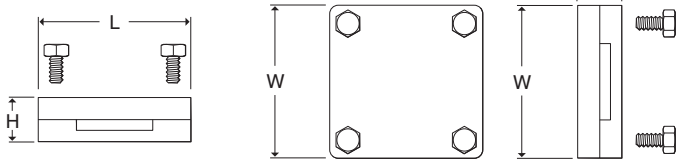
Material: Aluminium.

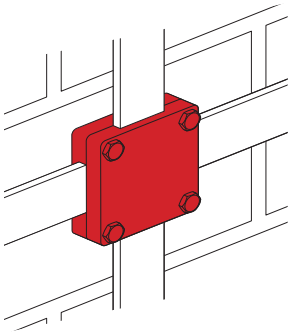
JG253

JG 506

JPB 253L

JA 253






JGO 253 W


JGO 506 W


JPBO 253 L


JAO 253

Oblong Junction Clamps

Designed to join a range of tape sizes in a straight through position. In many applications the clamp enables tapes to be overlapped and secured by the two set screws.

For use with Bare Copper Tapes

Maximum Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26 x 8	68	40	23	0.34	10	**JGO 253 W**
51 x 10	90	63	26	0.58		**JGO 506 W**

Material: Gunmetal.

For use with Lead Covered Copper Tape

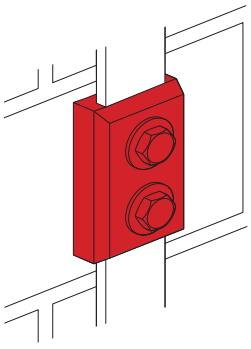
Maximum Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26 x 8	90	45	24	0.34	10	**JPBO 253 L**

Material: Phosphor Bronze.

For use with Bare Aluminium Tape

Maximum Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26 x 8	68	40	23	0.11	10	**JAO 253**

Material: Aluminium.



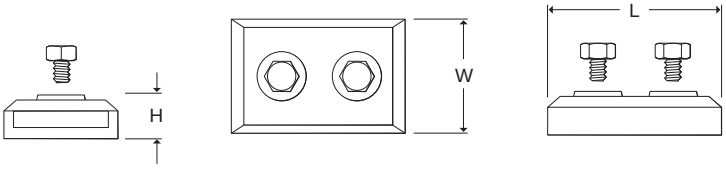


Plate Type Test Clamps

This Wallis clamp is used to form a disconnecting joint between the down conductor and earthing system.

There are two wall fixing holes on the bottom plate. Fix using countersunk woodscrews 1 1/2" x No. 10 and No. 10 wall plugs.

JPA 253

JPG 253

For use with Copper Tapes

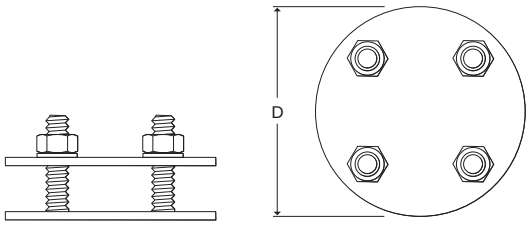
Maximum Conductor Size mm	D mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26 x 15	70	38	0.40	5	**JPG 253**

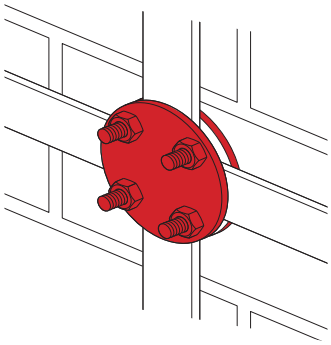
Material: Gunmetal.

For use with Aluminium Tapes

Maximum Conductor Size mm	D mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26 x 15	70	38	0.10	5	**JPA 253**

Material: Aluminium.





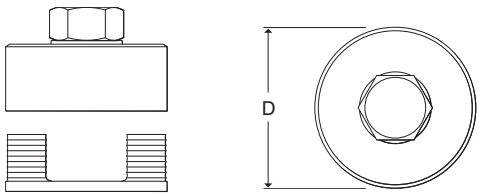
Screw Down Test Clamp

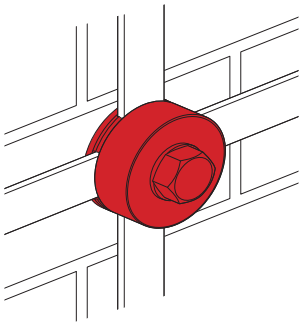
The screw down test clamp allows easy access to copper conductors where frequent inspection and testing may be necessary.

For use with Copper Tapes

Maximum Conductor Size mm	D mm	Unit Weight kg	Pack Quantity	Part Number
26 x 8	61	0.72	5	**JSG 253**

Material: Gunmetal.





BSS 253

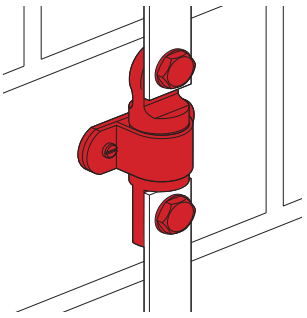
BIM 253

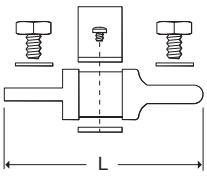
Bimetallic Connectors

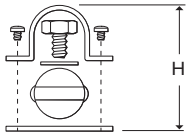
These connectors are used to join aluminium and copper tapes together. They are a neat and practical jointing method without the need for tinning, riveting or wrapping the joint.

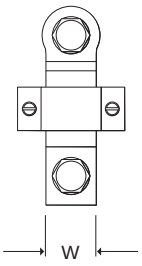
Fix using countersunk woodscrew 1 1/2" x No. 10 wall plug.

Conductor Size mm	Material Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	Aluminium & Copper	98	29	25	0.20	10	**BIM 253**
	Stainless Steel	76	21	20	0.16		**BSS 253**









'B' Bonds

This Wallis 'B' bond is used for bonding aluminium and copper tapes to flat metal surfaces.

For use with Copper Tapes

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	35	35	10	0.03	10	**BBG 253 SS**

Material: Gunmetal with M10 x 35mm Stainless Steel Set Screw.

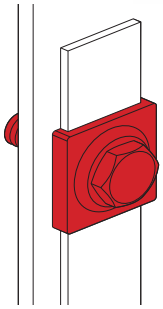
BBG 253 SS

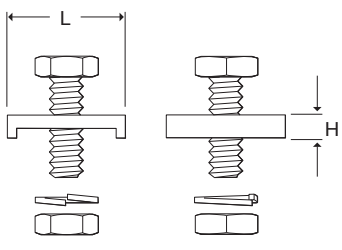
For use with Aluminium Tapes

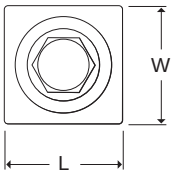
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	35	35	10	0.01	10	**BBA 253**

Material: Aluminium with M10 x 35mm Stainless Steel Set Screw.

BBA 253







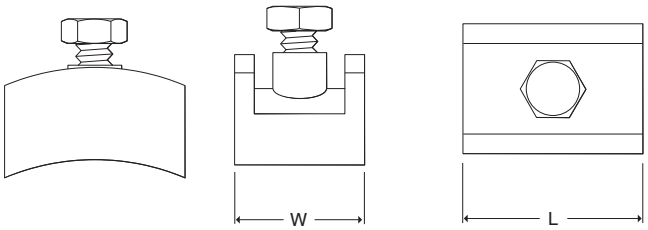
Watermain Pipe Bond

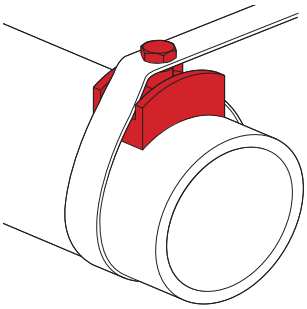
Designed to bond large diameter metallic pipes into the earthing and lightning protection systems.

For use with Bare Copper Tapes

Maximum Conductor Width mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
26	45	36	0.21	10	**BWG 253**

Material: Gunmetal with M10 x 35mm Phosphor Bronze Set Screw.





Rainwater Pipe Bond

This pipe bond can be used on any application where tape can be wrapped around circular objects such as pipes or rails.

BRG 253

For use with Bare Copper Tapes

Maximum Conductor Width mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26	32	32	16	0.20	10	**BRG 253**

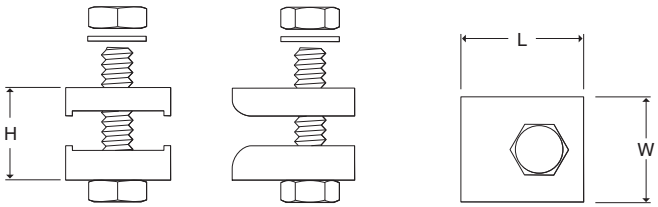
Material: Gunmetal with M10 x 40mm Stainless Steel Set Screw.

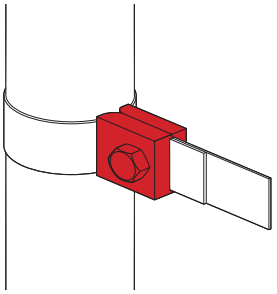
BRA 253

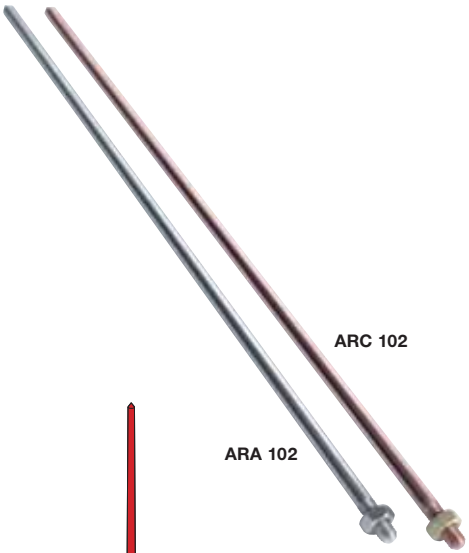
For use with Bare Aluminium Tapes

Maximum Conductor Width mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
26	32	32	16	0.10	10	**BRA 253**

Material: Aluminium with M10 x 40mm Stainless Steel Set Screw.







Air Rods

These air rods are used as part of the lightning protection system. They are manufactured from 10mm diameter rod and are supplied with a locknut.

Copper Air Rods

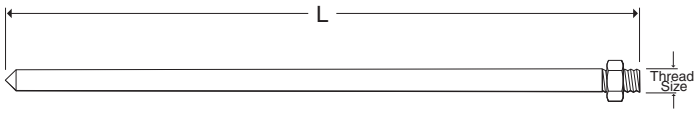
Thread Size	L mm	Unit Weight kg	Pack Quantity	Part Number
M10	500	0.35	5	**ARC 102**
	1000	0.70		**ARC 105**

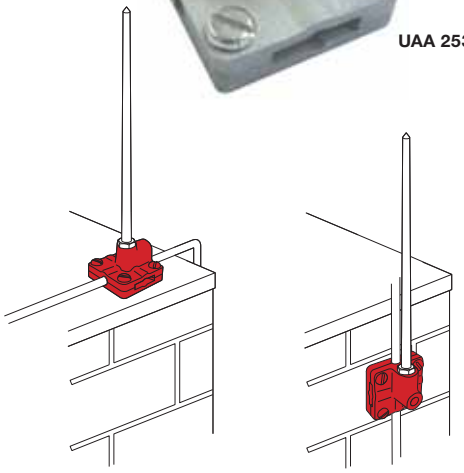
Material: Copper.

Aluminium Air Rods

Thread Size	L mm	Unit Weight kg	Pack Quantity	Part Number
M10	500	0.11	5	**ARA 102**
	1000	0.22		**ARA 105**

Material: Aluminium.





Multi-Purpose Air Rod Saddles

These saddles can be installed horizontally on roofs or vertically on walls or parapets and are used in conjunction with the air rods shown above. The saddles are suitable for use with 8mm diameter solid circular conductor as well as 25 x 3mm flat tape.

For use with Copper Air Rods

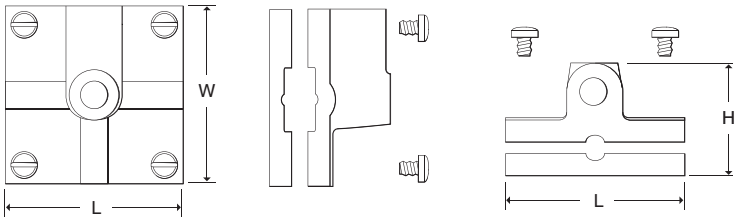
Thread Size	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M10	54	54	38	0.30	5	**UAG 253**

Material: Gunmetal.

For use with Aluminium Air Rods

Thread Size	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M10	54	54	38	0.10	5	**UAA 253**

Material: Aluminium.



Slate Holdfasts

Wallis slate holdfasts provide a method of fixing solid circular conductor above roof tiles without any drilling.

The aluminium tail slides underneath the tile and is fixed to the wooden beam with a nail, the push-in roof clip then protrudes from under the tile and offers a fixing for the conductor.

For use with Bare Solid Circular Conductors

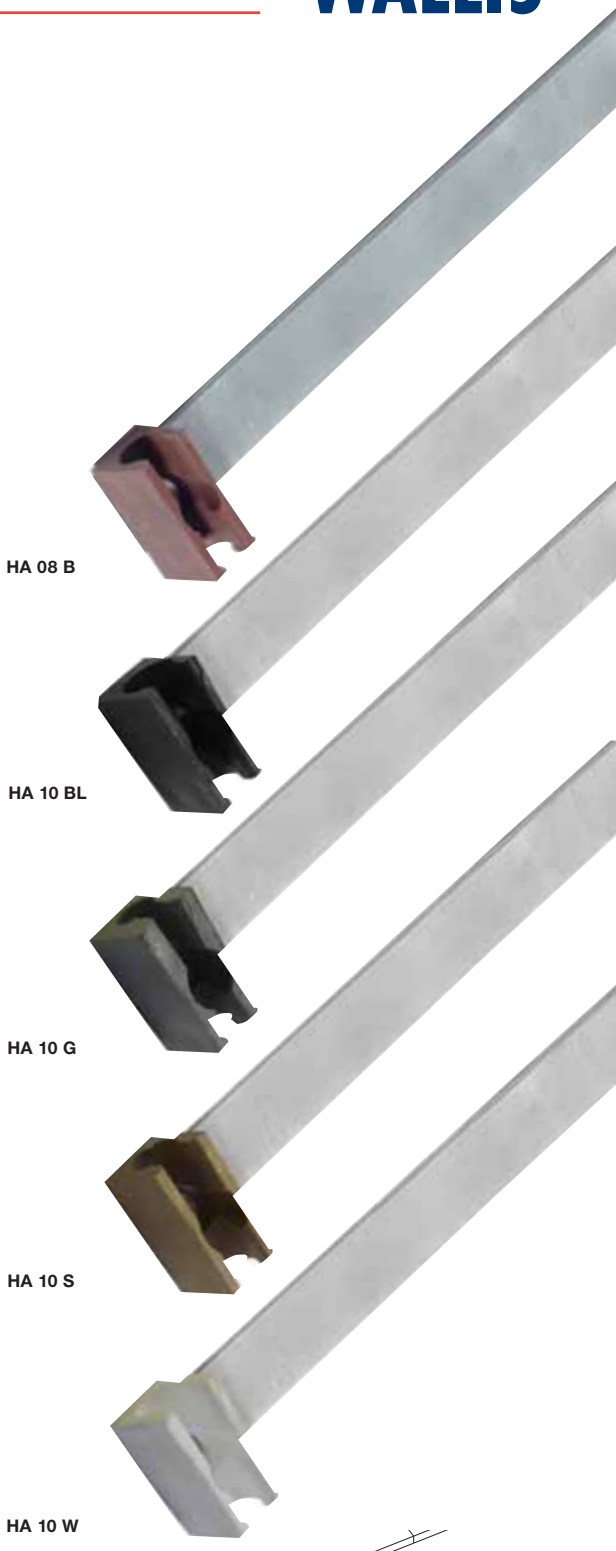
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	320	18	14	Brown	0.04	50	HA 08 B
				Grey			HA 08 G

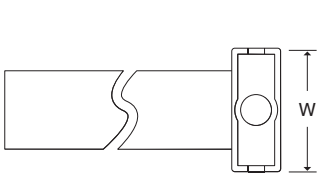
Material: Polypropylene clip with Aluminium tail.

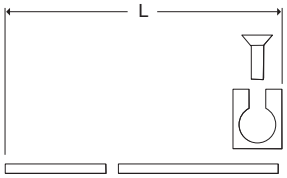
For use with PVC Covered Solid Circular Conductors

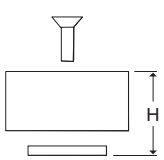
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	320	18	14	Brown	0.04	50	HA 10 B
				Black			HA 10 BL
				Grey			HA 10 G
				Stone			HA 10 S
				White			HA 10 W

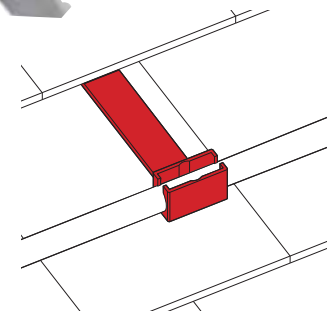
Material: Polypropylene clip with Aluminium tail.





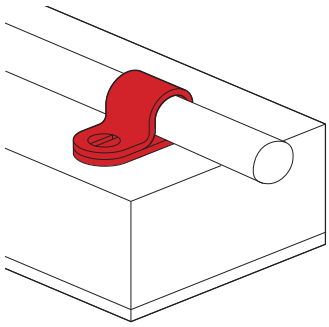






PCC 001

PCA 001



One Hole Conductor Clips

One hole conductor clips provide an easy method of fixing copper and aluminium conductors to surfaces.

Fix using round head woodscrew 1 1/2" x No. 10 and No. 10 wall plug

For use with Solid Circular Copper Conductors

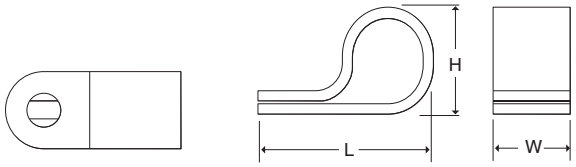
Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	31	12	12	0.01	50	**PCC 001**
8mm PVC	41	20	15			**PCC 002**

Material: Copper.

For use with Solid Circular Aluminium Conductors

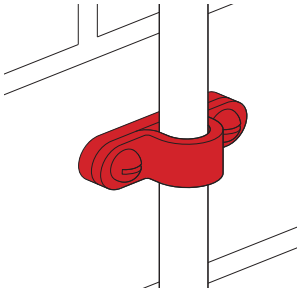
Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	31	12	12	0.01	50	**PCA 001**
8mm PVC	41	20	15			**PCA 002**

Material: Aluminium.



DCG 810

DCA 810



Metallic Conductor Clips

Metallic conductor clips secure the solid circular conductor to the building surface. The larger sizes can also be used to support the 10mm air rods shown on page 62. Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

For use with Solid Circular Copper Conductors

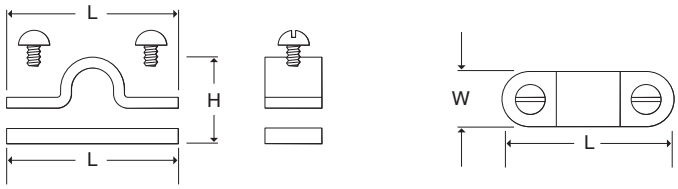
Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	48	17	20	0.06	25	**DCG 810**
8mm PVC						**DCG 815**

Material: Gunmetal.

For use with Solid Circular Aluminium Conductors

Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	48	17	20	0.03	25	**DCA 810**
8mm PVC						**DCA 815**

Material: Aluminium.



Non-Metallic Down Conductor Clips

A one-piece fold over clip designed for easy installation of solid circular conductor. The clips are UV stabilised to prevent degradation from sunlight and are non-brittle to protect against cold weather.

For use with Bare Solid Circular Conductors

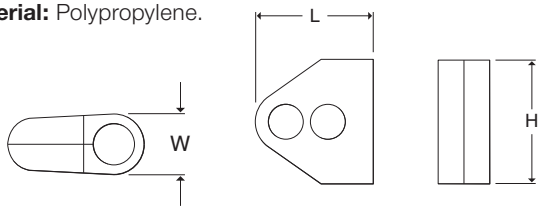
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	34	23	33	Brown	0.01	100	**CM 08 B**
				Grey			**CM 08 G**

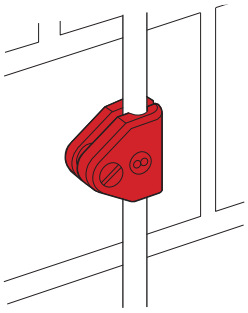
Material: Polypropylene.

For use with PVC Covered Solid Circular Conductors

Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	34	23	33	Brown	0.01	100	**CP 08 B**
				Black			**CP 08 BL**
				Grey			**CP 08 G**
				Stone			**CP 08 S**
				White			**CP 08 W**

Material: Polypropylene.





Push-in Roof Conductor Clips

A one-piece single screw fixing clip designed for easy installation of solid circular conductors. The clips are UV stabilised to prevent degradation from sunlight and are non-brittle to protect against cold weather.

For use with Bare Solid Circular Conductors

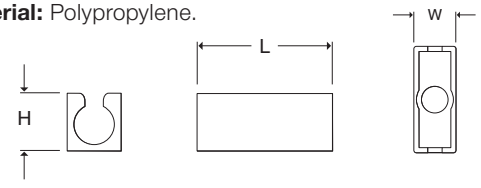
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	29	18	14	Brown	0.01	100	**RM 08 B**
				Grey			**RM 08 G**

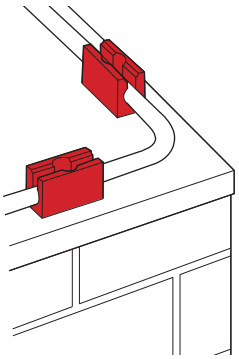
Material: Polypropylene.

For use with PVC Covered Solid Circular Conductors

Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	29	18	14	Brown	0.01	100	**RP 08 B**
				Black			**RP 08 BL**
				Grey			**RP 08 G**
				Stone			**RP 08 S**
				White			**RP 08 W**

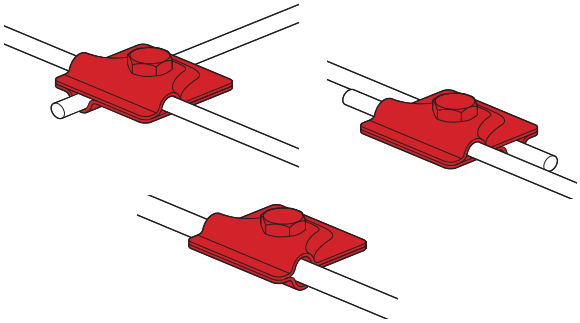
Material: Polypropylene.





MVG 08

MVA 08



‘MV’ Clamps

These Wallis four-way connectors are suitable for crossing over, making straight joints and tee connections in solid circular conductor.

For use with Bare Solid Circular Copper Conductor

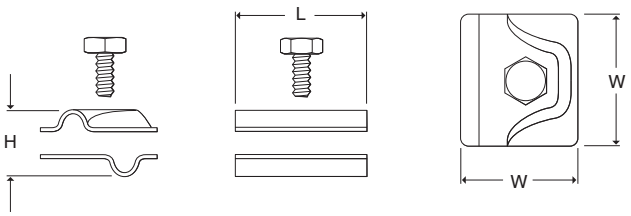
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	40	40	18	0.05	10	**MVG 08**

Material: Copper.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	40	40	18	0.01	10	**MVA 08**

Material: Aluminium.



TCG 08

TCA 08

‘T’ Connector Clamps

This purpose-designed ‘T’ connector clamp is ideal for connecting the roof network to the down conductors of an 8mm solid circular lightning protection system.

For use with Bare Solid Circular Copper Conductor

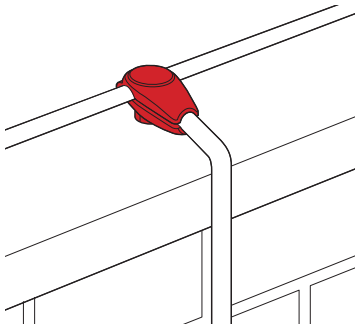
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	45	45	19	0.11	10	**TCG 08**

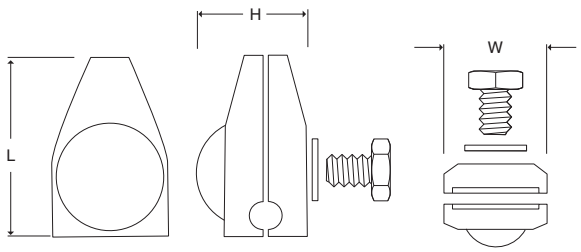
Material: Gunmetal.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	44	25	20	0.06	10	**TCA 08**

Material: Stainless Steel.





Interface Test Clamps

This Wallis clamp is used for connecting flat tape to solid circular conductor, for example where the lightning protection system has been designed in 8mm copper conductor but the connection to the earth rod is made using 25 x 3mm copper tape.

It will also serve for making through joints and tee connections in 8mm solid circular conductor.

For use with Bare Copper Conductors

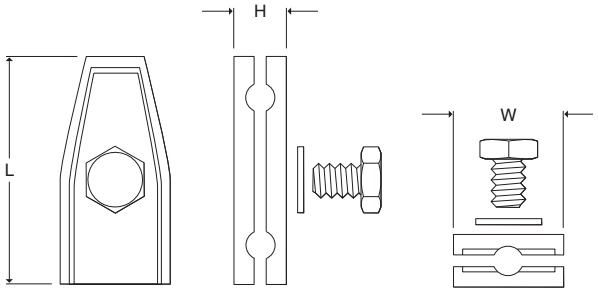
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	70	34	15	0.25	25	**JYG 08**

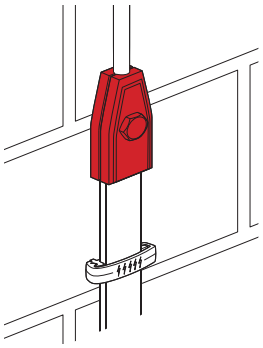
Material: Gunmetal.

For use with Bare Aluminium Conductors

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	70	34	15	0.09	25	**JYA 08**

Material: Aluminium.





Solid Circular to Tape Connectors

This Wallis four-way connector is suitable for crossing over flat tape and solid circular conductor. It will also serve for making straight through joints and tee connections.

For use with Bare Copper Conductors

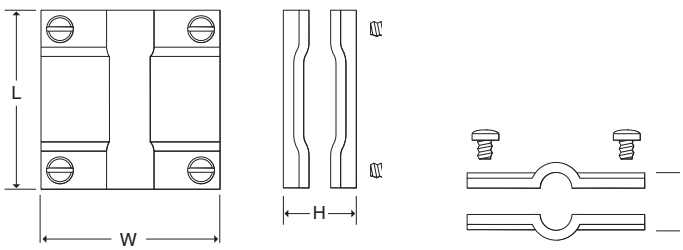
Conductor Sizes mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	52	52	14	0.28	25	**JOM 253**

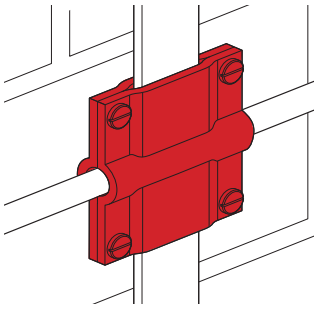
Material: Gunmetal.

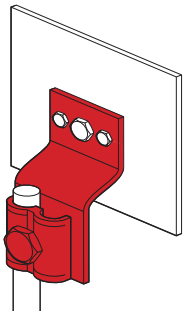
For use with Bare Aluminium Conductors

Conductor Sizes mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	52	52	14	0.09	25	**JOA 253**

Material: Aluminium.







Metalwork Bonding Clamps

These clamps are designed for bonding 8mm solid circular conductors onto metal surfaces.

For use with Bare Solid Circular Copper Conductor

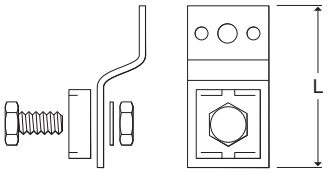
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	82	40	25	0.14	10	**MBG 08**

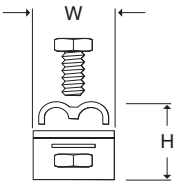
Material: Copper.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	82	40	25	0.09	10	**MBA 08**

Material: Aluminium.





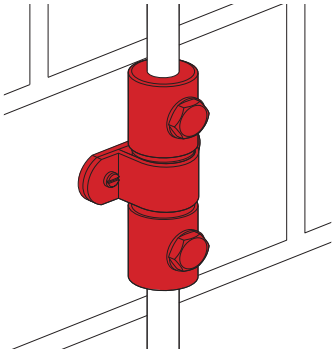
Bimetallic Connectors

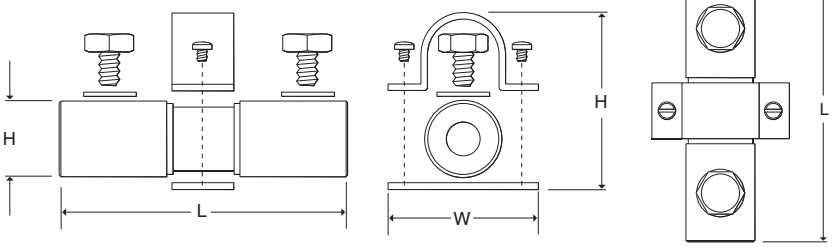
These connectors are used to join 8mm aluminium and copper solid circular conductors together. They are a neat and practical jointing method without the need for tinning, riveting or wrapping the joint.

Conductor Size mm	Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	Aluminium & Copper	78	28	28	0.25	10	**BIM 08**
	Stainless Steel	71	22	19	0.09		**BSS 08**

We also offer a connector suitable for joining 8mm aluminium solid circular conductor to 25 x 3mm copper tape.

Conductor Sizes mm	Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 to 25 x 3	Aluminium & Copper	78	28	29	0.20	10	**BIM 25308**





Rainwater Pipe Bonds

This pipe bond can be used on any application where the perforated tape can be wrapped around circular objects such as pipes or rails etc.

BRG 08

For use with Bare Solid Circular Copper Conductor

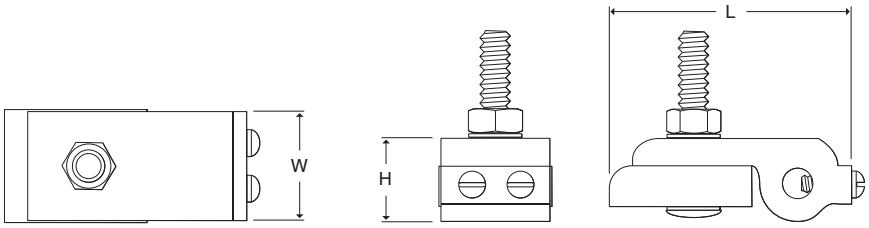
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	55	32	17	0.37	5	**BRG 08**

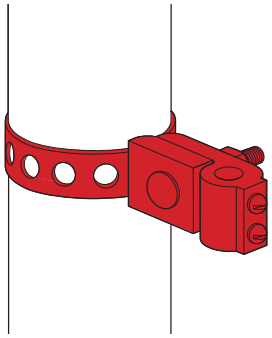
Material: Gunmetal with Perforated Copper Tail.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	51	31	16	0.09	5	**BRA 08**

Material: Aluminium with Perforated Steel Tail.





Circular 'B' Bonds

This Wallis bond is used for bonding 8mm solid circular conductors to flat metal surfaces.

For use with Bare Solid Circular Copper Conductor

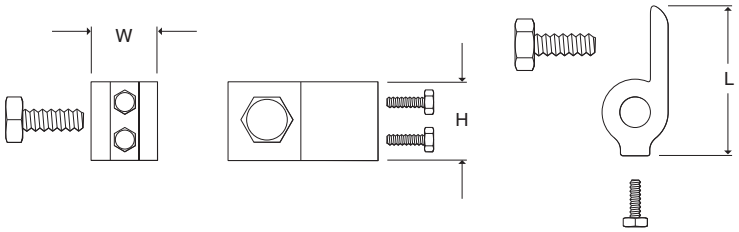
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	52	33	18	0.14	10	**BBG 08**

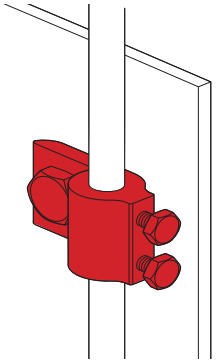
Material: Gunmetal.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	52	33	18	0.09	10	**BBA 08**

Material: Aluminium.





Tower Earth Clamps

BTC 008

These single-plate tower earth clamps are used for bonding copper and aluminium conductors onto steel surfaces. The clamp is fixed by drilling a hole in the steelwork and securing with the set screw provided.

For use with Bare Solid Circular Copper Conductor

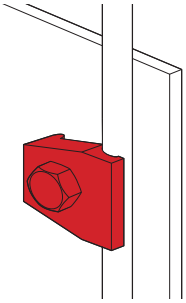
Conductor Size mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8	34	23	33	M10 x 50mm	0.09	10	**BTC 008**

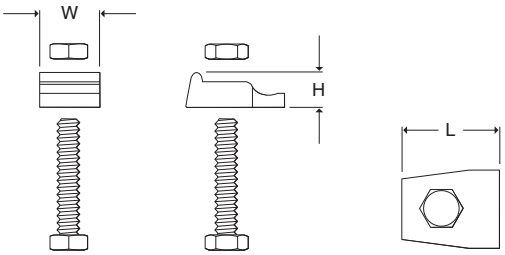
Material: Gunmetal.

For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8	40	22	12	M10 x 50mm	0.05	10	**BTA 008**

Material: Aluminium.





Multi-Purpose ‘B’ Bonds

BBG 25308

BBA 25308

This Wallis Multi-Purpose ‘B’ Bond can be used for bonding both 25 x 3mm flat tape and 8mm diameter solid circular conductor to flat metal surfaces.

For use with Bare Copper Conductors

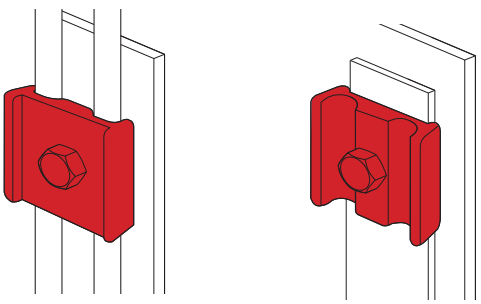
Conductor Sizes mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	34	34	13	M8 x 25mm	0.09	25	**BBG 25308**

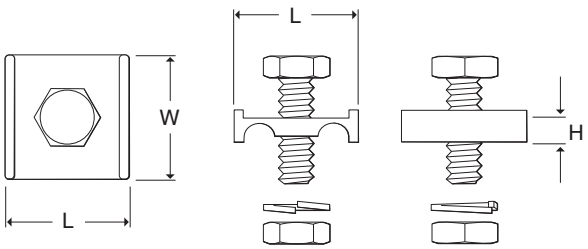
Material: Gunmetal.

For use with Bare Aluminium Conductors

Conductor Sizes mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	34	34	13	M8 x 25mm	0.04	25	**BBA 25308**

Material: Aluminium.





Pyramid Holdfast

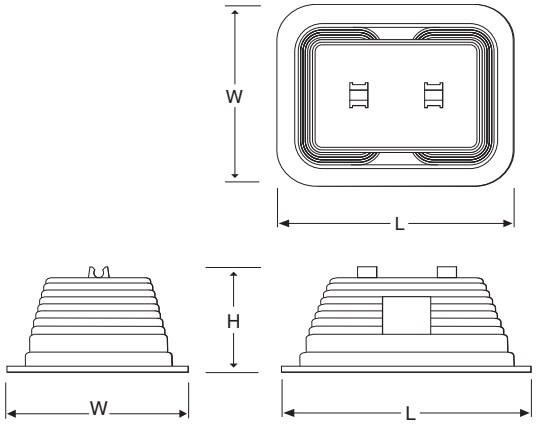
The Pyramid Holdfast is designed to support 8mm diameter bare solid circular conductors on flat roofs.

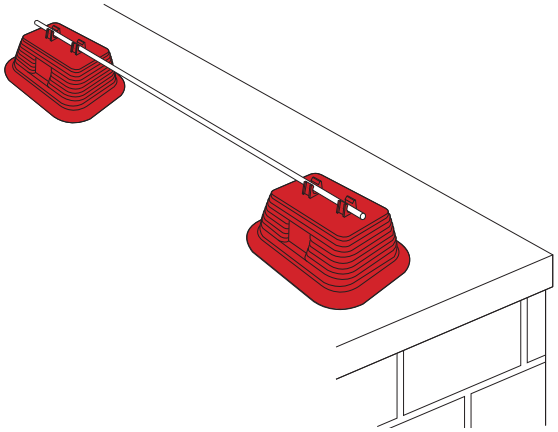
Manufactured from black weather-resistant plastic and filled with frost-proof concrete. The lip around the base enables the holdfast to be installed onto bitumen type roofs.

For use with Bare Solid Circular Conductors

Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	180	130	70	1.00	12	**HPY 008**

Material: Plastic filled with Concrete.





Circular Conductor Shoes

Used to bond 8mm bare solid circular conductors to metal surfaces.

For use with Bare Solid Circular Copper Conductor

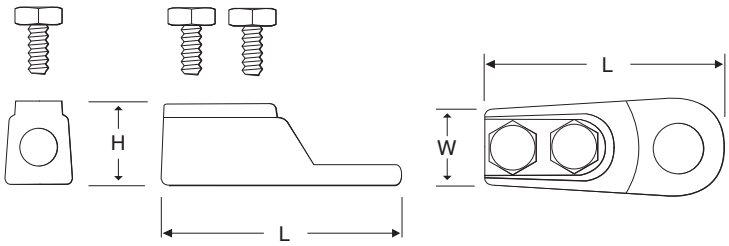
Conductor Size mm	Palm Hole Ø mm	L mm	W mm	H mm	Set Screws	Unit Weight kg	Pack Quantity	Part Number
8	12	61	23	25	M6 x 12mm	0.10	25	**GCS 008**

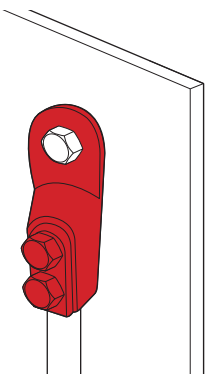
Material: Gunmetal.

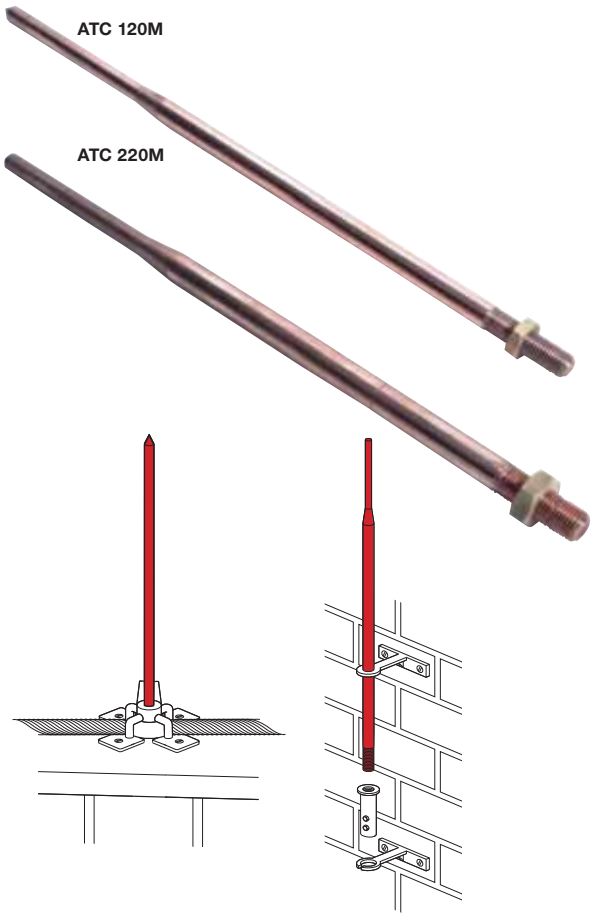
For use with Bare Solid Circular Aluminium Conductor

Conductor Size mm	Palm Hole Ø mm	L mm	W mm	H mm	Set Screws	Unit Weight kg	Pack Quantity	Part Number
8	12	61	23	25	M6 x 12mm	0.04	25	**ACS 008**

Material: Aluminium.





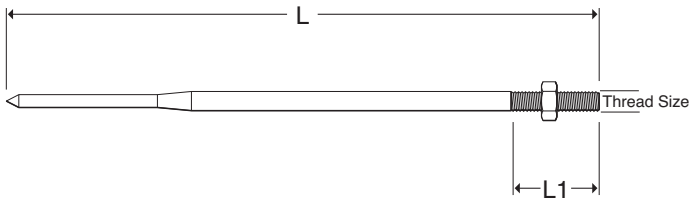


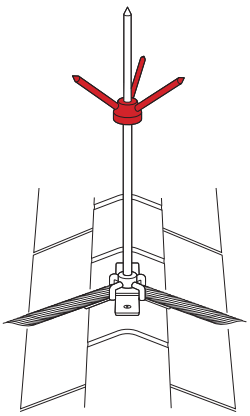
Taper Pointed Air Rods

Air rods form an important part of the air termination network of a lightning protection system. All of our copper air rods are supplied with a brass locknut enabling the rod to be locked tight against the conductor. Please see pages 73 - 74 for further information on our range of saddles, brackets and couplings.

Thread Size	L mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
M16	300	41	0.53	5	**ATC 112M**
	500		0.85		**ATC 120M**
	1000		1.70		**ATC 139M**
	1500		2.59		**ATC 160M**
	2000		3.47		**ATC 179M**

Material: Copper.



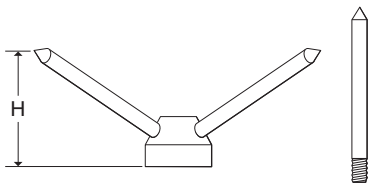


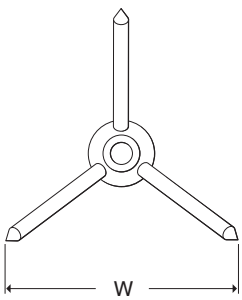
Multi-Point

Used in conjunction with the taper pointed copper air rods.

Air Rod Ø mm	H mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16	156	72	0.30	5	**MPC 16**

Material: Gunmetal base with Copper spikes.





Side Mounting Air Rod Brackets

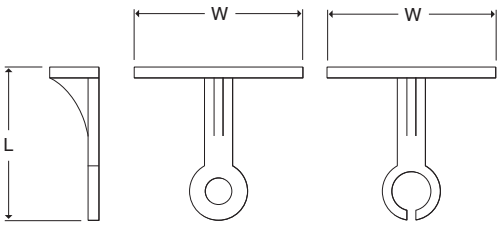
These brackets provide a 75mm projection from the building face and are used where it is not possible to fit a saddle onto the building roof. The brackets are used in conjunction with the rod to cable coupling used to secure the cable to the air rod.

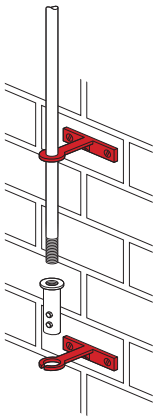
For use with Copper Air Rods

Rod Ø mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16	97	120	0.39	5	**AMBG 16**

Material: Gunmetal.

AMBG 16





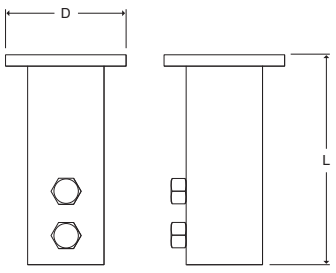
Rod to Cable Couplings

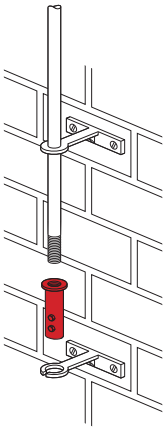
Enables the stranded cable to be connected to the air rod. Used in conjunction with the side mounting air rod brackets.

Conductor Size mm²	Thread Size	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
50	M16	80	40	0.25	5	**AOG 050**
70				0.25		**AOG 070**
95				0.22		**AOG 070**

Material: Gunmetal.

AOG 070





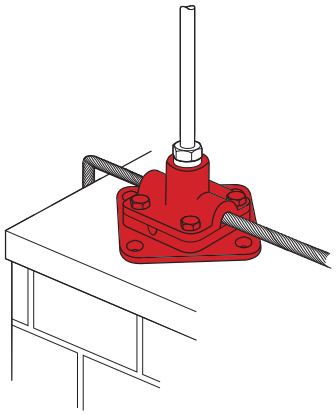

ASGF 050

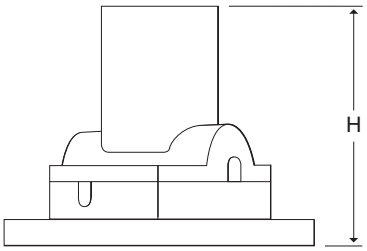
Air Rod Cable Saddles

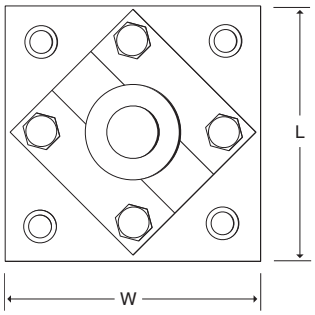
These saddles are used to support the copper taper pointed air rods on flat roof surfaces.

Conductor Size mm²	Thread Size	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
50	M16	85	85	65	1.10	5	**ASGF 050**
70					1.00		**ASGF 070**
95					0.90		**ASGF 095**

Material: Gunmetal.





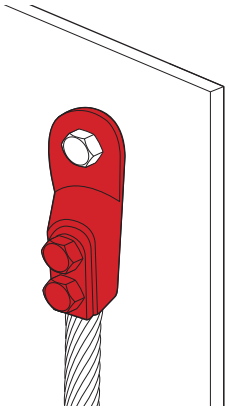


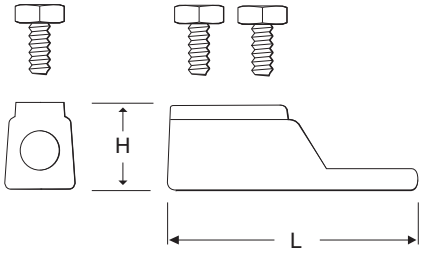
Cable Shoes

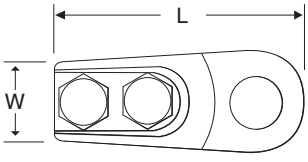
Used to bond stranded copper conductors to metal surfaces.

Conductor Size mm²	Palm Hole Ø mm	L mm	W mm	H mm	Set Screws	Unit Weight kg	Pack Quantity	Part Number
50	12	61	23	25	M6 x 12mm	0.10	25	**GCS 050**
70			25	27		0.12		**GCS 070**
95			27	29		0.14		**GCS 095**

Material: Gunmetal.







One Hole Cable Clips

Wallis one hole cable clips provide an easy method of fixing stranded copper conductors to surfaces.

For use with Bare Stranded Copper Conductors

Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	10	10	5	0.01	50	**PCC 006**
10	10	10	5	0.01		**PCC 010**
16	15	10	5	0.01		**PCC 016**
25	15	10	8	0.01		**PCC 025**
35	18	10	8	0.01		**PCC 035**
50	18	10	10	0.01		**PCC 050**
70	22	10	10	0.01		**PCC 070**
95	22	10	13	0.01		**PCC 095**
120	25	15	15	0.01		**PCC 120**
150	25	15	15	0.02		**PCC 150**
185	30	15	20	0.02		**PCC 185**
240	30	20	20	0.02		**PCC 240**
300	35	20	25	0.02		**PCC 300**

Material: Copper.

PCC 010

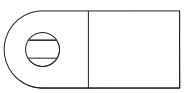
PCC 050

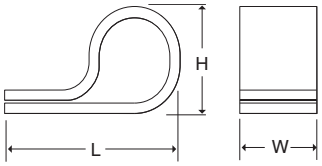
For use with PVC Insulated Stranded Copper Conductors

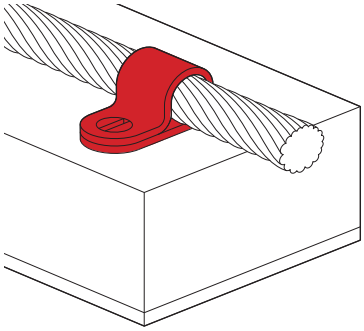
Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	10	10	5	0.01	50	**PCP 006**
10	10	10	7	0.01		**PCP 010**
16	15	10	7	0.01		**PCP 016**
25	15	10	10	0.01		**PCP 025**
35	18	10	10	0.01		**PCP 035**
50	18	10	15	0.01		**PCP 050**
70	22	10	15	0.01		**PCP 070**
95	22	10	15	0.01		**PCP 095**
120	25	15	20	0.01		**PCP 120**
150	25	15	20	0.02		**PCP 150**
185	30	15	25	0.02		**PCP 185**
240	30	20	25	0.02		**PCP 240**
300	35	20	30	0.02		**PCP 300**

Material: Copper.

PCP 300



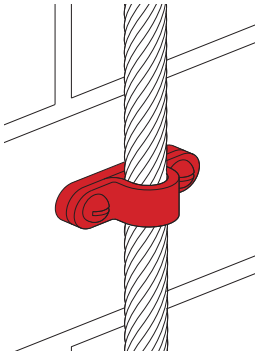




DCG 006

DCG 025

DCG 150



Metallic Cable Clips

Metallic cable clips secure the stranded copper conductor to the building surface.

Fix using countersunk woodscrew 1½" x No. 10 and No. 10 wall plug.

For use with Bare Stranded Copper Conductors

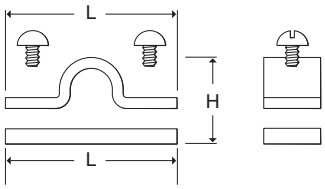
Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	35	15	12	0.03	50	**DCG 006**
10	35	15	12	0.03	50	**DCG 010**
16	35	15	15	0.04	50	**DCG 016**
25	35	15	15	0.04	50	**DCG 025**
35	46	17	17	0.05	50	**DCG 035**
50	46	17	17	0.05	50	**DCG 050**
70	46	17	19	0.06	25	**DCG 070**
95	46	17	21	0.06	25	**DCG 095**
120	60	20	23	0.07	25	**DCG 120**
150	60	20	24	0.07	25	**DCG 150**
185	60	20	26	0.08	25	**DCG 185**
240	60	20	29	0.09	25	**DCG 240**
300	60	20	31	0.09	25	**DCG 300**

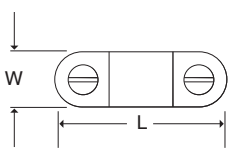
Material: Gunmetal.

For use with PVC Insulated Stranded Copper Conductors

Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	35	15	14	0.03	50	**DGP 006**
10	35	15	14	0.03	50	**DGP 010**
16	35	15	17	0.04	50	**DGP 016**
25	35	15	17	0.04	50	**DGP 025**
35	46	17	19	0.05	50	**DGP 035**
50	46	17	19	0.05	50	**DGP 050**
70	46	17	21	0.06	25	**DGP 070**
95	46	17	23	0.06	25	**DGP 095**
120	60	20	25	0.07	25	**DGP 120**
150	60	20	26	0.07	25	**DGP 150**
185	60	20	28	0.08	25	**DGP 185**
240	60	20	31	0.09	25	**DGP 240**
300	60	20	33	0.09	25	**DGP 300**

Material: Gunmetal.





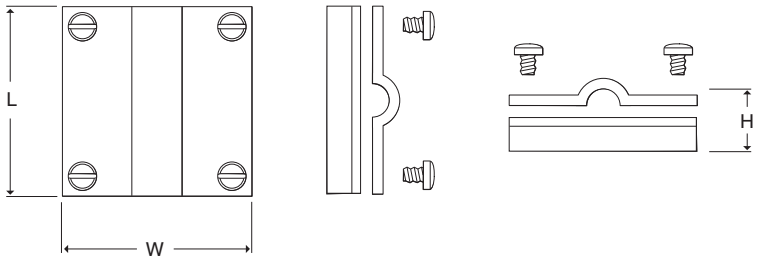
Square Cable Clamps

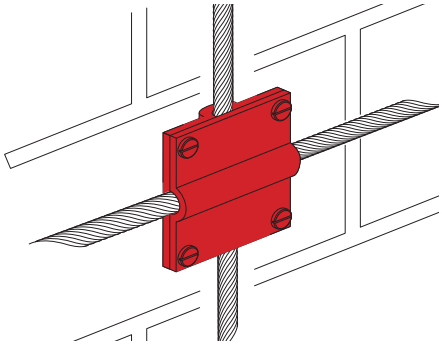
These Wallis four-way connectors are suitable for making cross, straight through or tee joints in stranded copper conductor.

Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
50	50	50	30	0.30	25	**JGC 050**
70	53	53	33	0.27		**JGC 070**
95	55	55	35	0.22		**JGC 095**

Material: Gunmetal.

JGC 070





Universal Cable Connectors

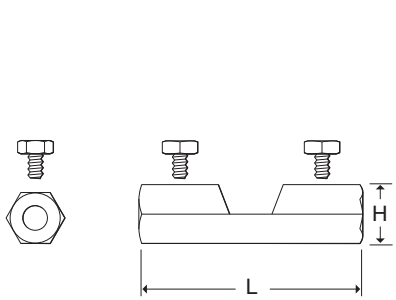
This connector is suitable for joining cables in a test point as part of the lightning protection system.

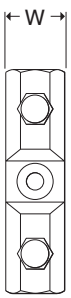
The base has a countersunk hole in the middle for securing the connector to the building surface. Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

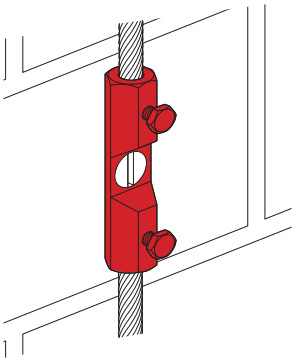
Conductor Size mm²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
50	71	21	19	0.15	25	**UCC 050**
70				0.17		**UCC 070**
95				0.19		**UCC 095**

Material: Naval Brass.

UCC 070







BTC 120

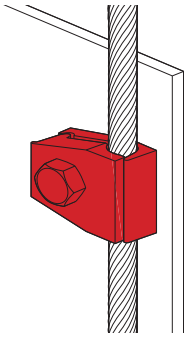
BTC 070

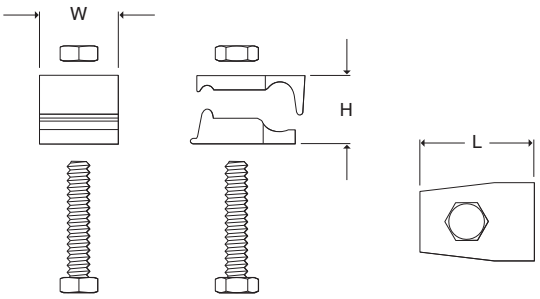
Tower Earth Clamps

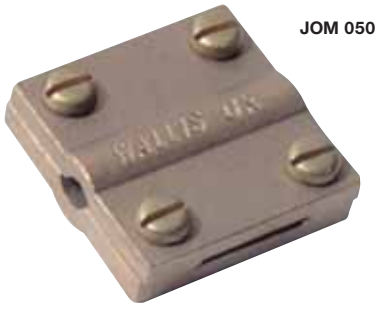
These double-plate tower earth clamps are used for bonding stranded copper conductors onto steel surfaces. The clamp is fixed by drilling a hole in the steelwork and securing with the set screw provided.

Conductor Range mm²	L mm	W mm	H mm	Set Screw	Unit Weight	Pack Qty	Part Number
16 - 70	45	30	17	M10 x 50mm	0.12	10	**BTC 070**
70 - 120	48	35	22	M12 x 60mm	0.23		**BTC 120**

Material: Gunmetal.







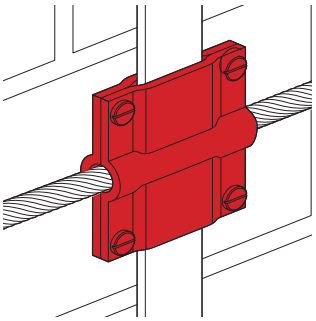
JOM 050

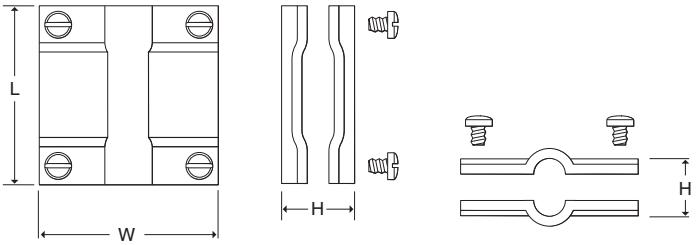
Cable to Tape Connectors

This Wallis four-way connector is suitable for crossing over flat copper tape and bare stranded copper cable. It will also serve for making straight through joints and tee connections.

Cable Size mm²	Tape Size mm	L mm	W mm	H mm	Unit Weight	Pack Qty	Part Number
50	25 x 3	52	52	14	0.28	25	**JOM 050**
70		54	54	16	0.33		**JOM 070**
95		56	56	18	0.39		**JOM 095**

Material: Gunmetal.





Strike Pads

This Wallis strike pad is used where it is not possible to install conductor on the roof or side of a building. A typical application would be on the roof of a car park where the conductor is laid underneath the tarmac and the strike pads fitted on top. Supplied with a 40mm dowel and nut.

SC 01

SA 01

For use with Copper Conductor

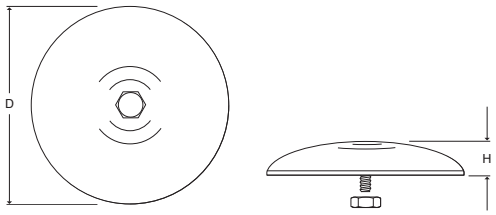
D mm	H mm	Unit Weight kg	Pack Quantity	Part Number
122	40	0.60	5	**SC 01**

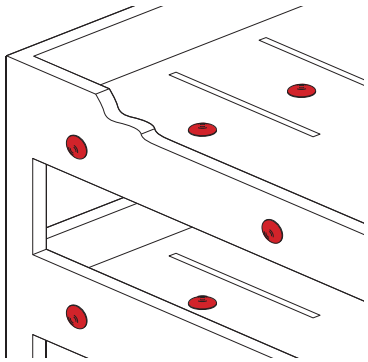
Material: Gunmetal.

For use with Aluminium Conductor

D mm	H mm	Unit Weight kg	Pack Quantity	Part Number
122	40	0.20	5	**SA 01**

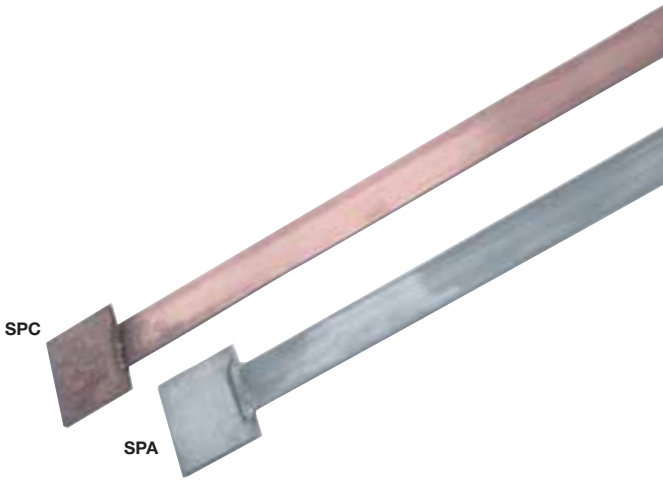
Material: Aluminium.





Interceptor Plates

These Wallis interceptor plates fit under the roof tile and are connected into the lightning protection system. The square plate protrudes from the tile and provides the interception point.



For use with Copper Conductor

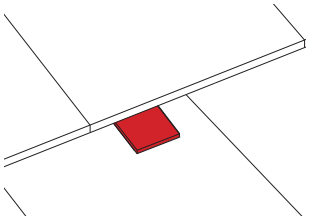
L mm	L1 mm	W mm	Unit Weight kg	Pack Quantity	Part Number
500	50	50	0.40	5	**SPC**

Material: Gunmetal.

For use with Aluminium Conductor

L mm	L1 mm	W mm	Unit Weight kg	Pack Quantity	Part Number
500	50	50	0.11	5	**SPA**

Material: Aluminium.



Oxide Inhibiting Compound

We recommend the use of an oxide inhibitor whenever aluminium fittings are installed on a lightning protection system.

Penetrox electrical joint compound is a natural-petroleum based grease that seals out oxygen and moisture on aluminium to aluminium and aluminium to copper connections. It is not recommended for use with rubber or polyethylene materials.

Description	Unit Weight kg	Pack Quantity	Part Number
8oz plastic squeeze bottle	0.23	1	**IC 08**

CoSHH datasheet available on request.

PFC 01

Puddle Flanges

The puddle flange is used where the down conductor must pass through a roof or waterproof membrane. The flats of the flange are made waterproof by fixing with glue, concrete or specialist roofing materials. See page 20 for our range of clamps suitable for use with puddle flanges.

For use with Copper Conductor

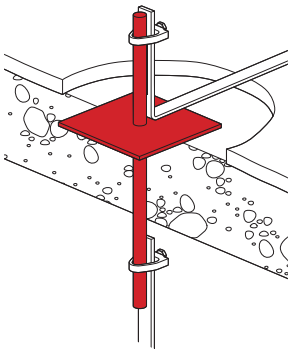
L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
600	150 x 150	1.68	1	**PFC 01**

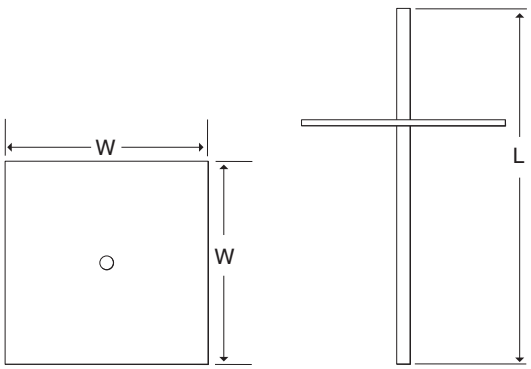
Material: Copper.

For use with Aluminium Conductor

L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
600	150 x 150	0.54	1	**PFA 01**

Material: Aluminium.





Wallis Sealing Tape

A waterproof tape for wrapping joints to provide protection against corrosion.

Description	Unit Weight kg	Pack Quantity	Part Number
50mm wide x 10m length roll	0.75	1	**DT 510**

Silfos

Silfos is an alloy of silver, phosphorous and copper. It is used to braze copper to copper in air without the use of flux.

Description	Unit Weight kg	Pack Quantity	Part Number
50mm x 0.12 x 8m length roll	0.50	1	**SILFOS**

CoSHH datasheet available on request.

Bitumen Felt Roll

Supplied in rolls for use on asphalt roofs.

Description	Unit Weight kg	Pack Quantity	Part Number
100mm wide x 10m length roll	2.64	1	**BFR 001**

Green & Yellow PVC Insulating Tape

General-purpose insulating tape for electrical applications.

Description	Unit Weight kg	Pack Quantity	Part Number
25mm wide x 33m length roll	0.14	1	**GYT 2533**

Tinmans Solder

Tinmans commercial grade solder supplied by the kilogram (4 sticks).

Description	Unit Weight kg	Pack Quantity	Part Number
Tinmans Solder (4 sticks)	1.00	1	**TMS 004**

Material: 60% Tin, 40% Lead.

Flux

A well-established and reliable multi-purpose flux paste. It is designed for engineering and sheet metal work, and is equally as effective for soldering of copper products. Use with Tinmans Solder.

Description	Unit Weight kg	Pack Quantity	Part Number
Fluxite soldering paste 100g tin	0.10	1	**FLX 100**

Free-Standing Air Terminals

A range of free-standing lightning interception terminals for the protection of roof-mounted equipment on surfaces where no penetration of the roof structure for anchoring is allowed.

A multi-component, stackable system with screw retention to achieve protection heights of up to 12m.

The Free-Standing Air Terminal system is designed to withstand wind speeds of up to 190kmh (118mph). The table on page 86 details the required components for installation in different wind speed zones. We recommend that all concrete bases are installed using the Protective Roof Pads (Wallis part number PRP 001).

Terminal Height m	Components m	Unit Weight kg	Pack Qty	Part Number
3.0	Two-piece: 1.5 + 1.5	5.0		**ATF 030**
3.5	Two-piece: 2.0 + 1.5	5.5		**ATF 035**
4.0	Two-piece: 2.5 + 1.5	7.0		**ATF 040**
4.5	Two-piece: 3.5 + 1.0	9.2		**ATF 045**
5.0	Two-piece: 3.5 + 1.5	10.0		**ATF 050**
5.5	Two-piece: 4.0 + 1.5	10.6		**ATF 055**
6.0	Three-piece: 2.0 + 2.0 + 2.0	18.0		**ATF 060**
6.5	Three-piece: 2.5 + 2.0 + 2.0	21.2	1	**ATF 065**
7.0	Three-piece: 3.0 + 2.0 + 2.0	23.5		**ATF 070**
7.5	Three-piece: 3.5 + 2.0 + 2.0	26.0		**ATF 075**
8.0	Three-piece: 4.0 + 2.0 + 2.0	28.7		**ATF 080**
9.0	Three-piece: 4.0 + 2.5 + 2.5	30.5		**ATF 090**
10.0	Three-piece: 5.0 + 2.5 + 2.5	35.5		**ATF 010**
11.0	Three-piece: 5.0 + 3.5 + 2.5	37.8		**ATF 011**
12.0	Three-piece: 6.0 + 3.5 + 2.5	42.9		**ATF 012**

Material: Stainless Steel with Aluminium tip.

Free-Standing Air Terminal Supports

A range of supports to suit the free-standing air terminals shown on page 84. See table on page 86 for recommended component configuration.

Square Plate Support

For use with air terminals up to 4m. Used in conjunction with square concrete bases.

Terminal Height m	Terminal Barrel Ø mm	Required Mounting Space mm	No. of Concrete Supports	Unit Weight kg	Pack Quantity	Part Number
up to 4.0m	42	650 x 650	4 or 8	7	1	**ATS 001**

Material: Stainless Steel.

ATS 001

Tripod Supports

For use with air terminals between 4.5m and 10m. Used in conjunction with round concrete bases.

Terminal Height m	Terminal Barrel Ø mm	Required Mounting Space mm	No. of Concrete Supports	Unit Weight kg	Pack Quantity	Part Number
4.5 - 5.5	42	1350 x 1350	3	8	1	**ATT 001**
6.0 - 8.0	60	1850 x 1850	6	25		**ATT 002**
9.0 - 10.0	60	1850 x 1850	10	40		**ATT 003**

Material: Stainless Steel.

ATT 001

ATT 002

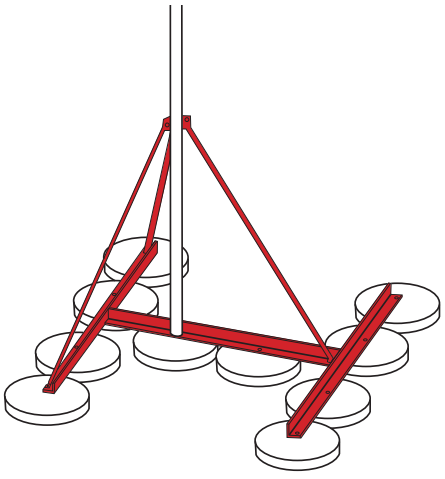
Quad Support

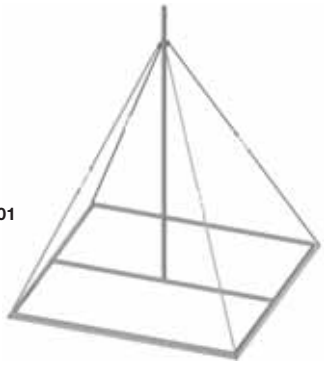
For use with air-terminals between 11m and 12m. Used in conjunction with round concrete bases.

Terminal Height m	Terminal Barrel Ø mm	Required Mounting Space mm	No. of Concrete Supports	Unit Weight kg	Pack Quantity	Part Number
11.0 - 12.0	60	3400 x 3400	17	159	1	**ATQ 001**

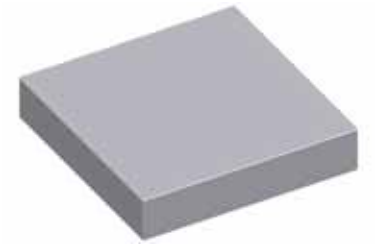
Material: Stainless Steel.

ATT 003





ATQ 001



SCB 012

SCB 016

PRP 001

Concrete Bases

Square

Used in conjunction with the Square Plate Support.

Base Weight kg	Size mm	Height mm	Pack Quantity	Part Number
12	300 x 300	60	1	**SCB 012**
16		80		**SCB 016**

Material: Concrete.

Round

Used in conjunction with the Tripod and Quad Supports. Integral M16 Thread.

Base Weight kg	Ø mm	Height mm	Pack Quantity	Part Number
12	380	75	1	**RCB 012**
16	380	93		**RCB 016**
20	380	105		**RCB 020**
25	420	105		**RCB 025**

Material: Concrete.

Protective Roof Pad

Suit all sizes of round and square concrete bases. Protects waterproof roofing membrane from damage.

Size mm	Pack Quantity	Part Number
Ø 445 / 300 x 300	1	**PRP 001**

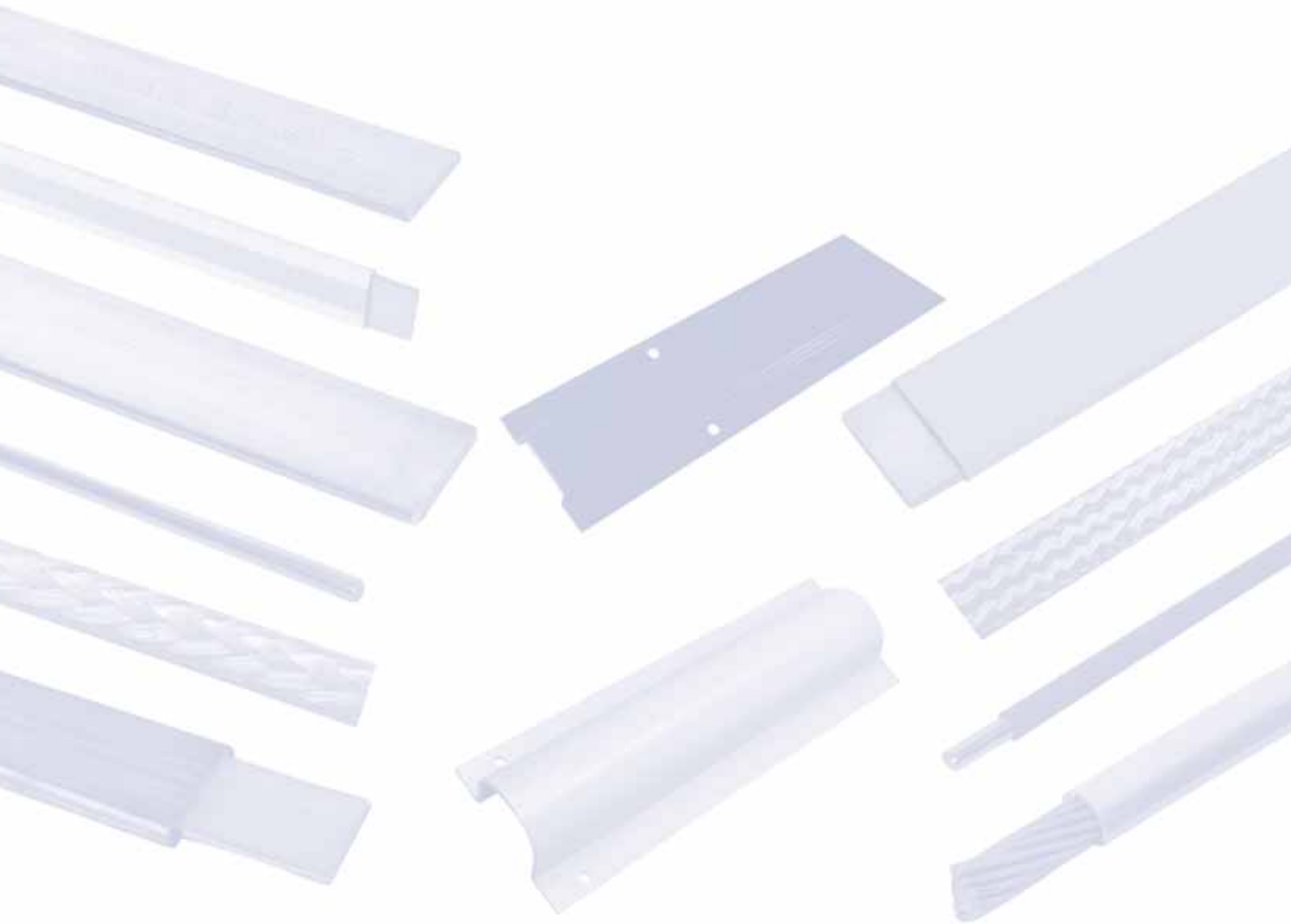
Material: Rubber.

Free-Standing Air Terminal System

Terminal Height m	Terminal Part Number	Wind Speeds							
		Up to 130 kmh (81 mph)		Up to 150 kmh (93 mph)		Up to 170 kmh (106 mph)		Up to 190 kmh (118 mph)	
		Support	Concrete Bases	Support	Concrete Bases	Support	Concrete Bases	Support	Concrete Bases
3.0	ATF 030	ATS 001	SCB 012 x 4	ATS 001	SCB 012 x 4	ATS 001	SCB 012 x 4	ATS 001	SCB 012 x 4
3.5	ATF 035	ATS 001	SCB 012 x 4	ATS 001	SCB 012 x 4	ATS 001	SCB 016 x 4	ATS 001	SCB 016 x 4
4.0	ATF 040	ATS 001	SCB 012 x 4	ATS 001	SCB 016 x 4	ATS 001	SCB 012 x 8	ATS 001	SCB 016 x 8
4.5	ATF 045	ATT 001	SCB 016 x 3	ATT 001	RCB 020 x 3	ATT 001	RCB 025 x 3	ATT 002	RCB 012 x 6
5.0	ATF 050	ATT 001	SCB 016 x 3	ATT 001	RCB 020 x 3	ATT 001	RCB 025 x 3	ATT 002	RCB 012 x 6
5.5	ATF 055	ATT 001	SCB 020 x 3	ATT 001	RCB 025 x 3	ATT 002	RCB 012 x 6	ATT 002	RCB 012 x 6
6.0	ATF 060	ATT 002	RCB 012 x 6	ATT 002	RCB 012 x 6	ATT 002	RCB 012 x 6	ATT 002	RCB 016 x 6
6.5	ATF 065	ATT 002	RCB 012 x 6	ATT 002	RCB 012 x 6	ATT 002	RCB 016 x 6	ATT 002	RCB 025 x 6
7.0	ATF 070	ATT 002	RCB 012 x 6	ATT 002	RCB 016 x 6	ATT 002	RCB 020 x 6	*	*
7.5	ATF 075	ATT 002	RCB 016 x 6	ATT 002	RCB 020 x 6	ATT 002	RCB 025 x 6	*	*
8.0	ATF 080	ATT 002	RCB 020 x 6	ATT 002	RCB 025 x 6	ATT 003	RCB 025 x 10	*	*
9.0	ATF 090	ATT 003	RCB 025 x 10	ATT 003	RCB 025 x 10	ATT 003	RCB 025 x 10	*	*
10.0	ATF 010	ATT 002	RCB 025 x 10	ATT 002	RCB 025 x 10	*	*	*	*
11.0	ATF 011	ATQ 001	RCB 025 x 17	ATQ 001	RCB 025 x 17	*	*	*	*
12.0	ATF 012	ATQ 001	RCB 025 x 17	ATQ 001	RCB 025 x 17	*	*	*	*

***Please contact our sales office for information and advice.**

CONDUCTORS



Introduction

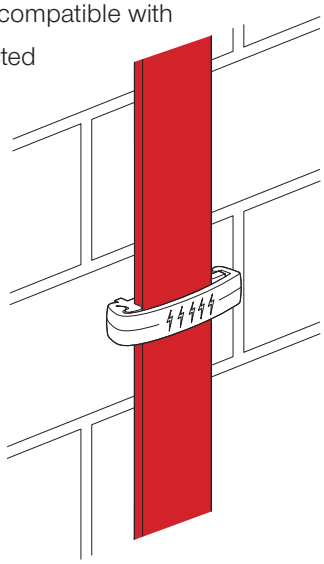
The conductor is a vital component of any earthing and lightning protection system.

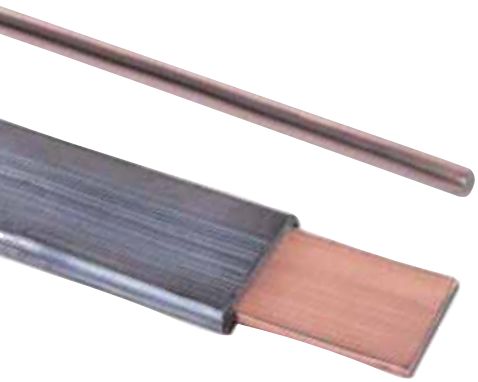
Wallis offers an extensive range of different types of conductors manufactured in both copper and aluminium which conform to the main British, European and world earthing and lightning protection standards.

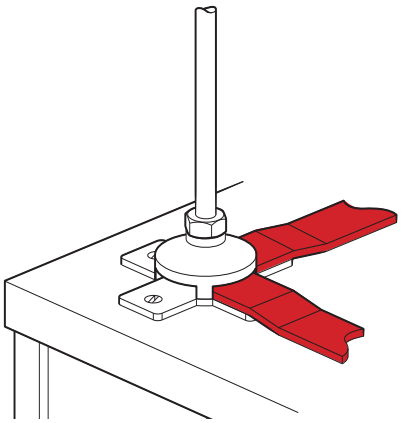
There are several important criteria to consider when selecting a conductor:

The conductor must be resilient to the environmental conditions in which it is installed. In particular it should be capable of withstanding mechanical damage and corrosion. It should also be compatible with the material of other connected components.

Secondly, the conductor should have sufficient cross-sectional area to be capable of carrying, without sustaining damage or deterioration, any currents that may reasonably be expected.







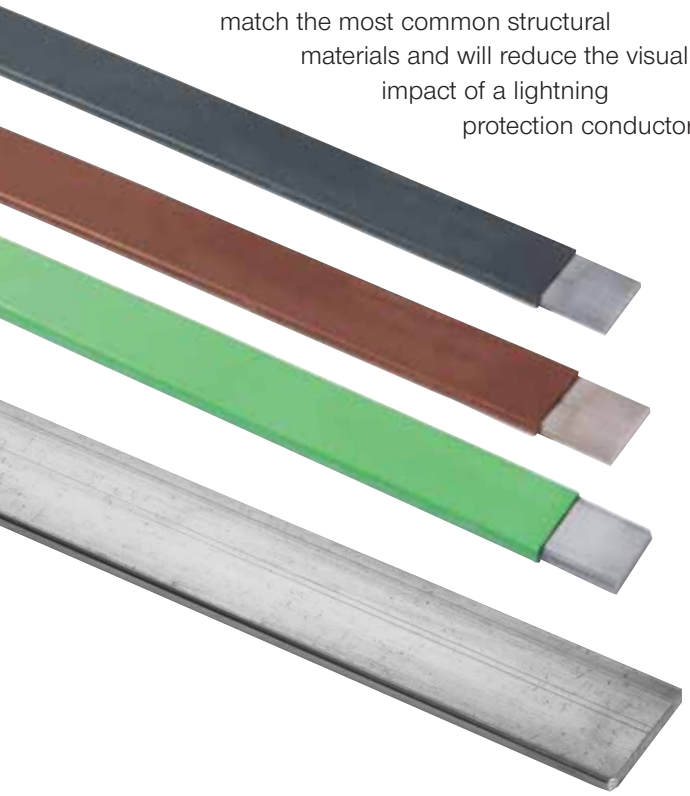
Copper Conductor Ratings

Fault current capacities, for one and three second durations, for a wide selection of standard sizes of copper tapes are shown in the table below. These 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 mm	C.S.A. mm^2	kA for 1 second	kA for 3 seconds
12.5 x 1.5	18.75	3.3	**1.9**
12.5 x 3	37.5	6.6	**3.8**
20 x 1.5	30	5.3	**3.0**
20 x 3	60	10.6	**6.1**
25 x 1.5	37.5	6.6	**3.8**
25 x 3	75	13.2	**7.6**
25 x 4	100	17.6	**10.2**
25 x 6	150	26.4	**15.2**
30 x 2	60	10.6	**6.1**
30 x 3	90	15.8	**9.1**
30 x 4	120	21.1	**12.2**
30 x 5	150	26.4	**15.2**
31 x 3	93	16.4	**9.5**
31.5 x 4	126	22.2	**12.8**
31 x 6	186	32.7	**18.9**
38 x 3	114	20.1	**11.6**
38 x 5	190	33.4	**19.3**
38 x 6	228	40.1	**23.2**
40 x 3	120	21.1	**12.2**
40 x 4	160	28.2	**16.3**
40 x 5	200	35.2	**20.3**
40 x 6	240	42.2	**24.4**
40 x 6.3	252	44.4	**25.6**
50 x 3	150	26.4	**15.2**
50 x 4	200	35.2	**20.3**
50 x 5	250	44.0	**25.4**
50 x 6	300	52.8	**30.5**
50 x 6.3	315	55.4	**32.0**

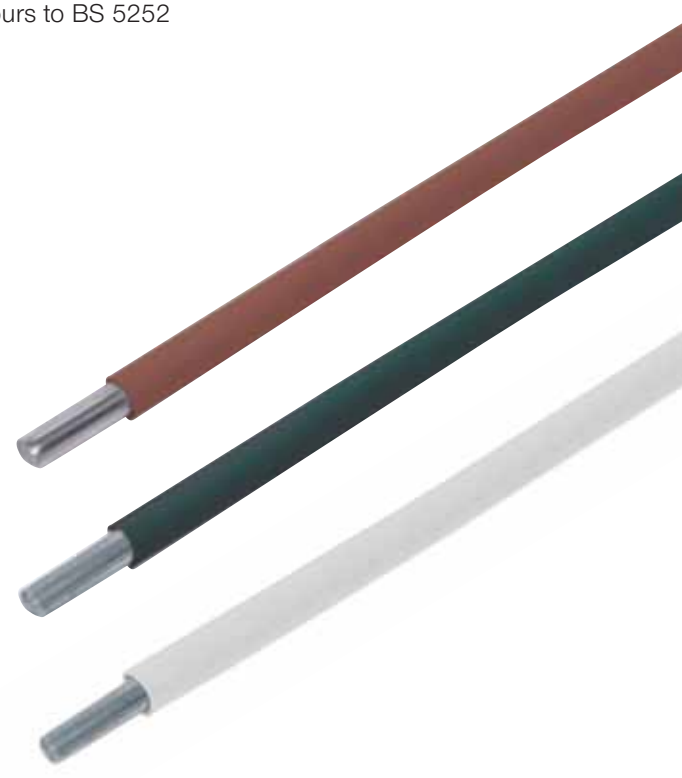
PVC Covered Conductors

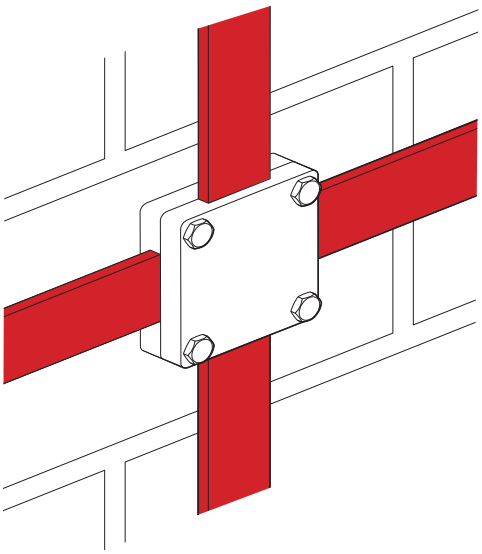
Wallis offers a range of UV-stabilised PVC covered tapes and solid circular conductors in a range of different colours. These colours have been chosen to match the most common structural materials and will reduce the visual impact of a lightning protection conductor.



BLACK	**18B29***	
GREEN	**06C39***	
GREY	**00A07***	
STONE	**08B23***	
WHITE	**10B15***	
BROWN	**BS 6746C**	

*PVC colours to BS 5252





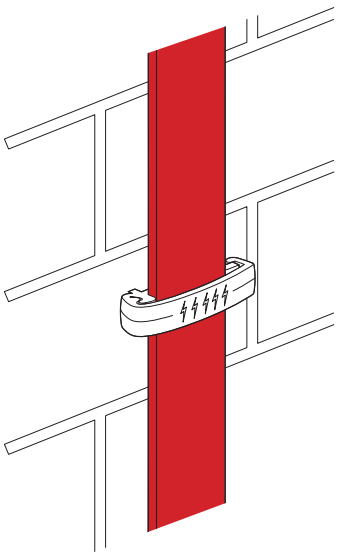
Bare Copper Tapes

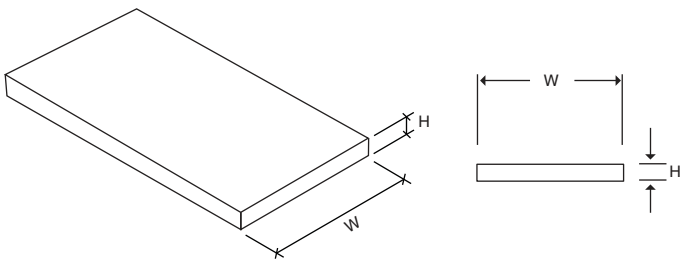
Wallis high conductivity bare copper tape is used on both lightning protection and earthing applications. It is annealed for ease of use and has radiused edges.

All our standard bare copper tapes are marked 'Wallis U.K. - BS EN 13601'.

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
12.5 x 1.5	18.75	0.17	100	**TC 121**
12.5 x 3	37.5	0.33	100	**TC 123**
20 x 1.5	30	0.27	100	**TC 201**
20 x 3	60	0.53	100	**TC 203**
25 x 1.5	37.5	0.33	100	**TC 251**
25 x 3	75	0.67	25 & 50	**TC 253**
25 x 4	100	0.89	50	**TC 254**
25 x 6	150	1.33	40	**TC 256**
30 x 2	60	0.53	50	**TC 302**
30 x 3	90	0.80	50	**TC 303**
30 x 4	120	1.07	40	**TC 304**
30 x 5	150	1.33	40	**TC 305**
31 x 3	93	0.83	50	**TC 313**
31.5 x 4	126	1.13	40	**TC 3154**
31 x 6	186	1.65	30	**TC 316**
38 x 3	114	1.01	50	**TC 383**
38 x 5	190	1.69	30	**TC 385**
38 x 6	228	2.02	25	**TC 386**
40 x 3	120	1.06	40	**TC 403**
40 x 4	160	1.42	30	**TC 404**
40 x 5	200	1.78	25	**TC 405**
40 x 6	240	2.16	25	**TC 406**
40 x 6.3	252	2.24	25	**TC 4063**
50 x 3	150	1.33	40	**TC 503**
50 x 4	200	1.78	30	**TC 504**
50 x 5	250	2.22	20	**TC 505**
50 x 6	300	2.68	20	**TC 506**
50 x 6.3	315	2.80	20	**TC 5063**
50 x 8	400	3.60	15	**TC 508**

Material: Copper to BS EN 13601 (formerly BS 1432).





PVC Covered Copper Tapes

Wallis PVC covered copper tapes are mainly used as down conductors on a building's structural lightning protection system.

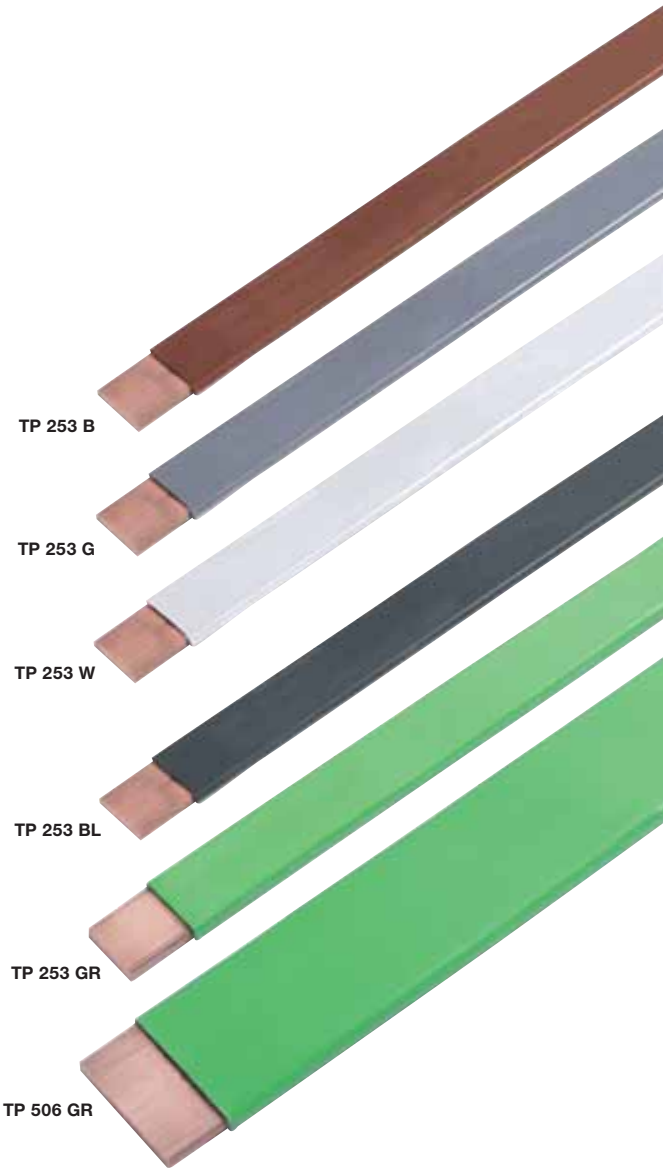
The copper is manufactured to BS EN 13601 and is annealed for ease of use.

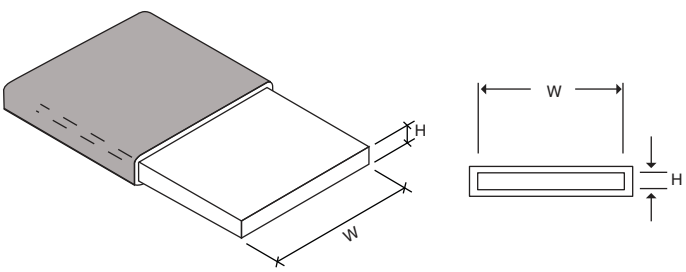
There is a choice of six standard PVC colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All PVC coverings are UV stabilised although some discolouration may occur over time.

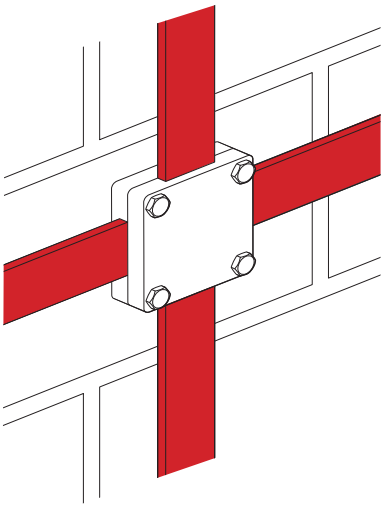
Other PVC colours are also available to order. These may be subject to minimum order quantities and lead times. Please contact our sales office for further information.

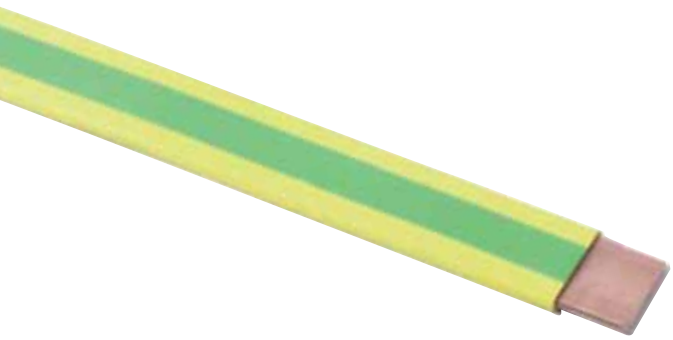
Size W x H mm	Colour	C.S.A. mm²	Weight per Metre kg	Standard Coil Sizes m	Part Number
12.5 x 1.5	Black	18.75	0.21	100	**TP 121 BL**
25 x 3	Brown	75	0.77	25 & 50	**TP 253 B**
	Black				**TP 253 BL**
	Grey				**TP 253 G**
	Green				**TP 253 GR**
	Stone				**TP 253 S**
	White				**TP 253 W**
25 x 6	Green	150	1.33	40	**TP 256 GR**
50 x 3	Green	150	1.33	40	**TP 503 GR**
50 x 6	Green	300	2.68	20	**TP 506 GR**

Material: Copper to BS EN 13601 (formerly BS 1432).
PVC colours to BS 5252 except green to BS 6746C.





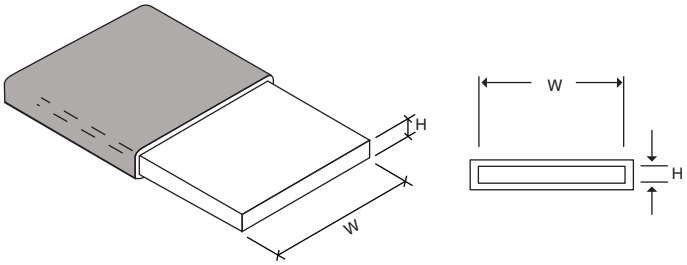


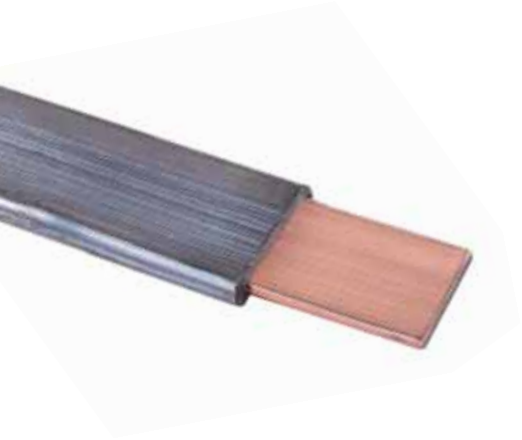


Green & Yellow PVC Insulated Copper Tape

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
25 x 3	75	0.79	25 & 50	**TP 253 GY**

Material: Copper to BS EN 13601 (formerly BS 1432).
PVC colour to BS 6746C.

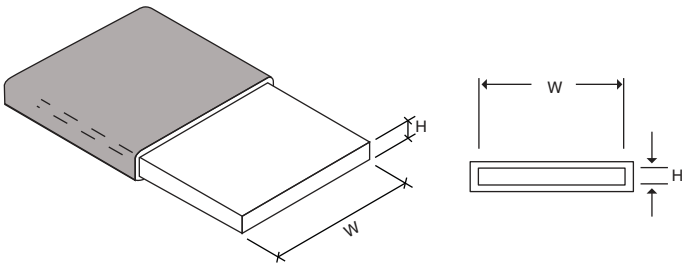


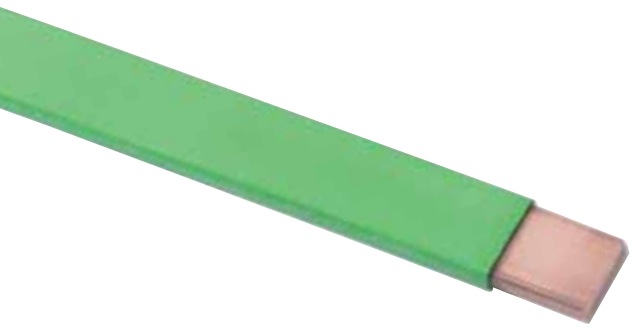


Lead Covered Copper Tape

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
25 x 3	75	2.56	25	**TL 253**

Material: Copper to BS EN 13601 (formerly BS 1432).



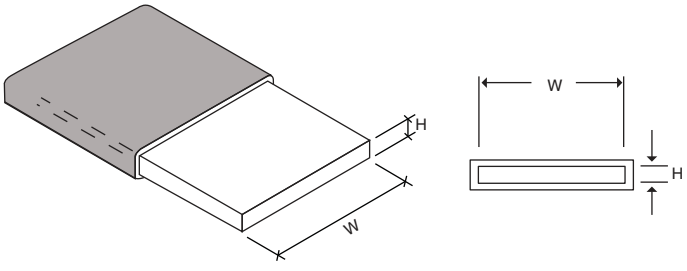


TP 253 GRLSF

LSOH Covered Copper Tapes

Size W x H mm	Colour	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
25 x 3	Green	75	0.77	25 & 50	**TP 253 GRLSF**
25 x 6		150	1.53	40	**TP 256 GRLSF**
50 x 6		300	2.95	20	**TP 506 GRLSF**

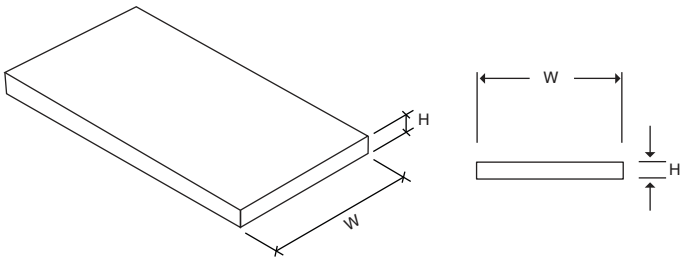
Material: Copper to BS EN 13601 (formerly BS 1432).
PVC colours to BS 6746C.

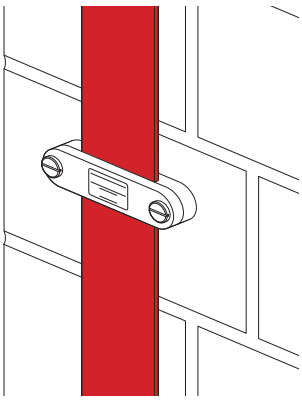


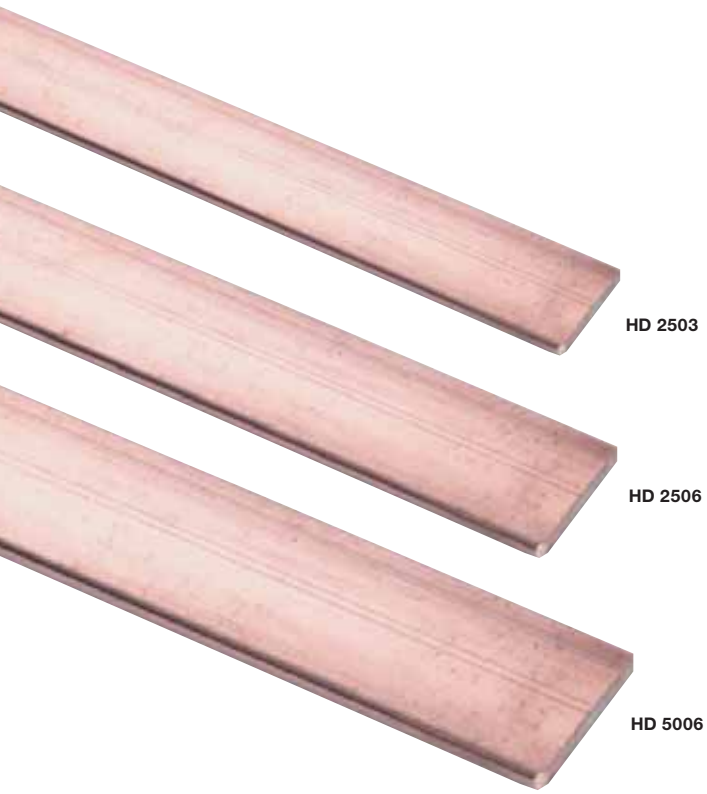
Tinned Copper Tapes

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
12.5 x 1.5	18.75	0.17	100	**TT 121**
12.5 x 3	37.5	0.33	100	**TT 123**
20 x 1.5	30	0.27	100	**TT 201**
20 x 3	60	0.53	100	**TT 203**
25 x 1.5	37.5	0.33	100	**TT 251**
25 x 3	75	0.67	50	**TT 253**
25 x 4	100	0.89	50	**TT 254**
25 x 6	150	1.33	40	**TT 256**
30 x 2	60	0.53	50	**TT 302**
30 x 3	90	0.80	50	**TT 303**
30 x 4	120	1.07	40	**TT 304**
30 x 5	150	1.33	40	**TT 305**
31 x 3	93	0.83	50	**TT 313**
31.5 x 4	126	1.13	40	**TT 3154**
31 x 6	186	1.65	30	**TT 316**
38 x 3	114	1.01	50	**TT 383**
38 x 5	190	1.69	30	**TT 385**
38 x 6	228	2.02	25	**TT 386**
40 x 3	120	1.06	40	**TT 403**
40 x 4	160	1.42	30	**TT 404**
40 x 5	200	1.78	25	**TT 405**
40 x 6	240	2.16	25	**TT 406**
40 x 6.3	252	2.24	25	**TT 4063**
50 x 3	150	1.33	40	**TT 503**
50 x 4	200	1.78	30	**TT 504**
50 x 5	250	2.22	20	**TT 505**
50 x 6	300	2.68	20	**TT 506**
50 x 6.3	315	2.80	20	**TT 5063**
50 x 8	400	3.60	15	**TT 508**

Material: Copper to BS EN 13601 (formerly BS 1432).



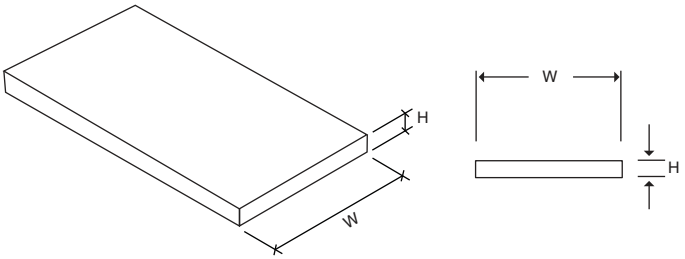


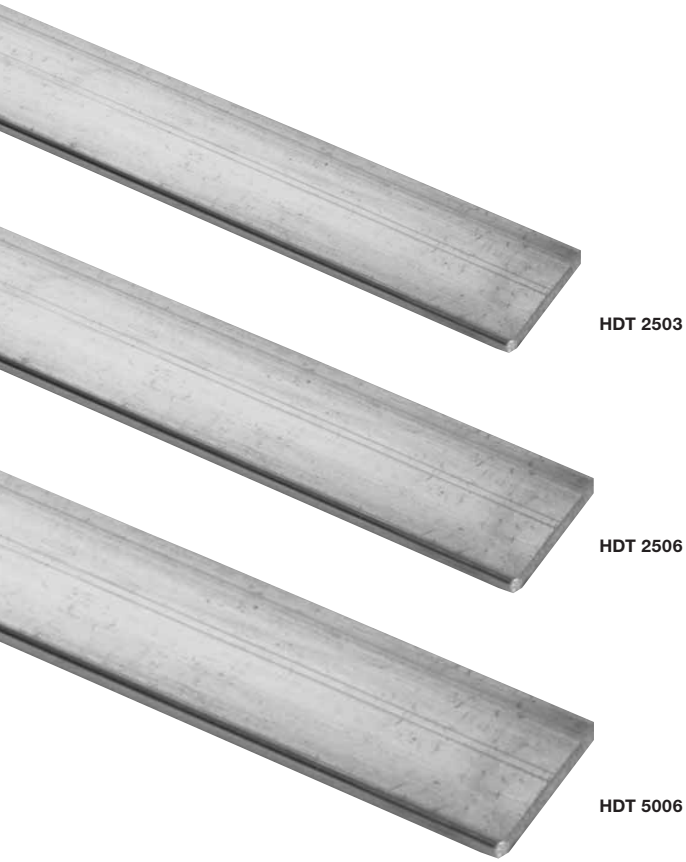


Bare Hard Drawn Copper Bars

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Length m	Part Number
20 x 3	60	0.53	4	**HD 2003**
25 x 3	75	0.67		**HD 2503**
25 x 4	100	0.89		**HD 2504**
25 x 6	150	1.33		**HD 2506**
38 x 6	228	2.03		**HD 3806**
50 x 6	300	2.68		**HD 5006**
75 x 6	450	4.02		**HD 7506**
100 x 5	500	4.48		**HD 10005**
100 x 6	600	5.38		**HD 10006**

Material: Copper to BS EN 12163 (formerly BS 2874).

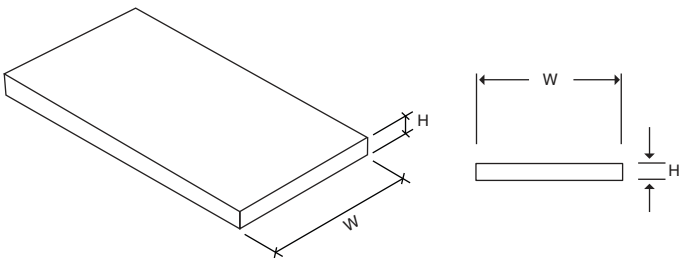




Tinned Hard Drawn Copper Bars

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Length m	Part Number
25 x 3	75	0.67	4	**HDT 2503**
25 x 6	150	1.33		**HDT 2506**
50 x 6	300	2.68		**HDT 5006**

Material: Copper to BS EN 12163 (formerly BS 2874).



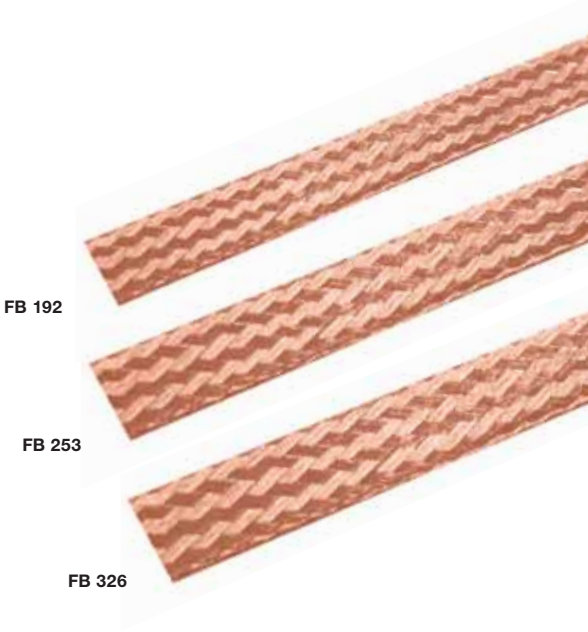
Bare Copper Flat Braids

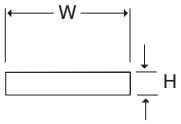
Wallis copper braids are utilised as flexible earth bonding leads.

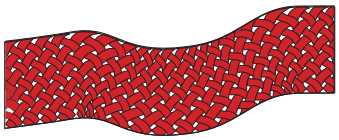
Other sizes and constructions are available on request. Please contact our sales office for further information.

Nominal C.S.A. mm²	Nominal Size W x H mm	Braid Construction	Current Rating Amps	Weight per Metre kg	Standard Coil Size m	Part Number
6	12 x 1.0	24/8/0.2mm	66	0.06	100	**FB 121**
10	15 x 1.5	48/7/0.2mm	90	0.10	50	**FB 151**
16	19 x 2.5	48/11/0.2mm	120	0.16	50	**FB 192**
25	23 x 2.0	48/17/0.2mm	160	0.25	50	**FB 232**
35	25 x 3.5	48/23/0.2mm	200	0.34	50	**FB 253**
50	30 x 5.0	48/33/0.2mm	250	0.48	50	**FB 305**
70	32 x 6.0	48/46/0.2mm	300	0.63	50	**FB 326**

Material: Copper wire to BS EN 13602 (formerly BS 4109).







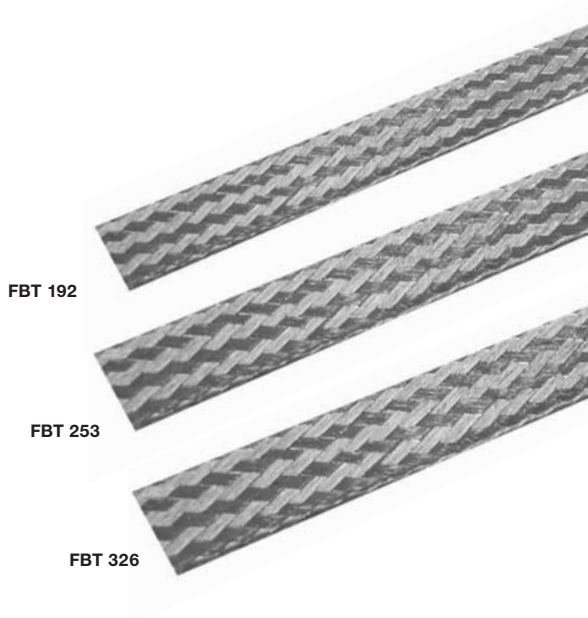
Tinned Copper Flat Braids

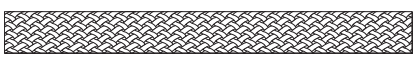
Wallis tinned copper braids are utilised as flexible earth bonding leads with additional corrosion protection

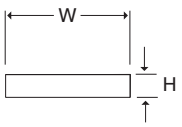
Other sizes, materials and constructions are available on request. Please contact our sales office for further information.

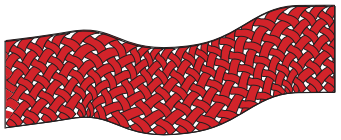
Nominal C.S.A. mm²	Nominal Size W x H mm	Braid Construction	Current Rating Amps	Weight per Metre kg	Standard Coil Size m	Part Number
6	12 x 1.0	24/8/0.2mm	66	0.06	100	**FBT 121**
10	15 x 1.5	48/ 7/0.2mm	90	0.10	50	**FBT 151**
16	19 x 2.5	48/11/0.2mm	120	0.16	50	**FBT 192**
25	23 x 2.0	48/17/0.2mm	160	0.25	50	**FBT 232**
35	25 x 3.5	48/23/0.2mm	200	0.34	50	**FBT 253**
50	30 x 5.0	48/33/0.2mm	250	0.48	50	**FBT 305**
70	32 x 6.0	48/46/0.2mm	300	0.63	50	**FBT 326**

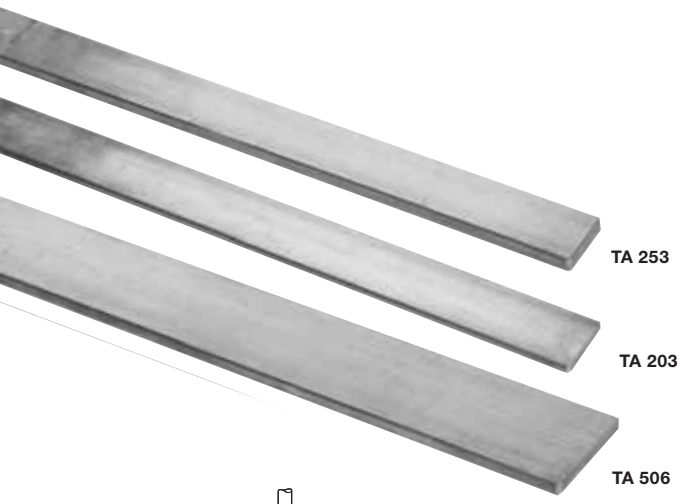
Material: Copper wire to BS EN 13602 (formerly BS 4109).

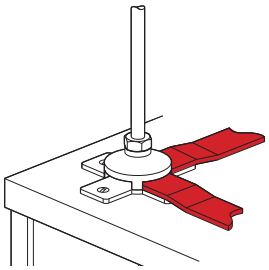










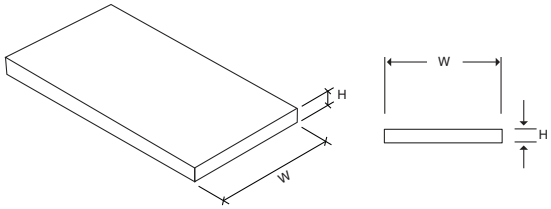


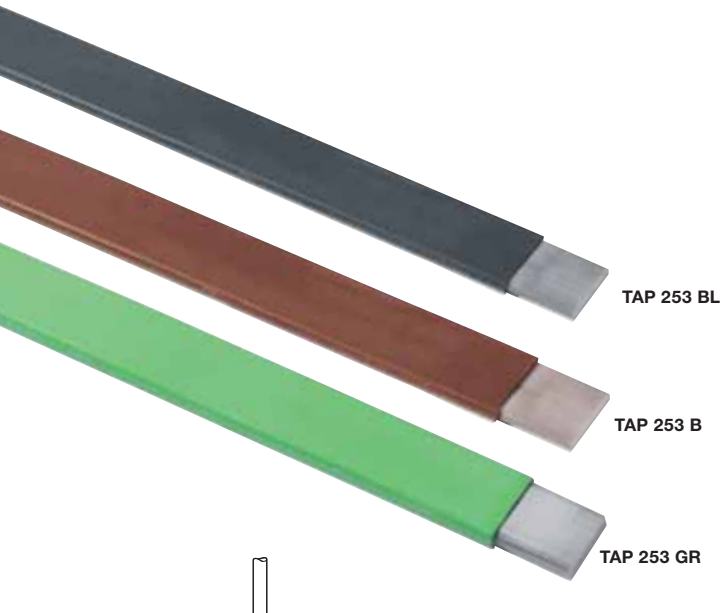
Bare Aluminium Tapes

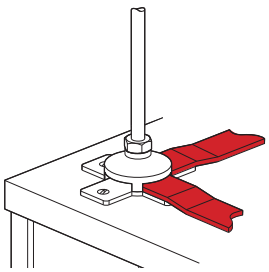
Wallis bare aluminium tapes are used on lightning protection system applications. The aluminium is annealed for ease of use and has radiused edges.

Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
12.5 x 1.5	18.75	0.05	50	**TA 121**
20 x 3	60	0.15		**TA 203**
25 x 3	75	0.21		**TA 253**
30 x 3	90	0.25		**TA 303**
25 x 6	150	0.42		**TA 256**
40 x 6	240	0.67		**TA 406**
50 x 6	300	0.85		**TA 506**

Material: Aluminium to BS2898.







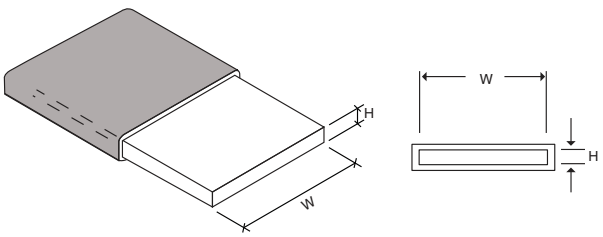
PVC Covered Aluminium Tapes

Wallis PVC covered aluminium tapes are available in a choice of six standard colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All PVC coverings are UV stabilised although some discolouration may occur over time.

Other PVC colours are also available to order. These may be subject to minimum order quantities and lead times. Please contact our sales office for further information.

Size W x H mm	Colour	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
12.5 x 1.5	Black	18.75	0.09	50	**TAP 121 BL**
20 x 3	Black	60	0.25	50	**TAP 203 BL**
25 x 3	Brown	75	0.30	50	**TAP 253 B**
	Black				**TAP 253 BL**
	Grey				**TAP 253 G**
	Green				**TAP 253 GR**
	Stone				**TAP 253 S**
	White				**TAP 253 W**

Material: Aluminium to BS 2898.
PVC colours to BS 5252 except green to BS 6746C.



Anti-Vandal Tape Guards

Wallis anti-vandal tape guards provide protection from accidental damage, vandalism and theft for flat tapes up to 40mm wide.

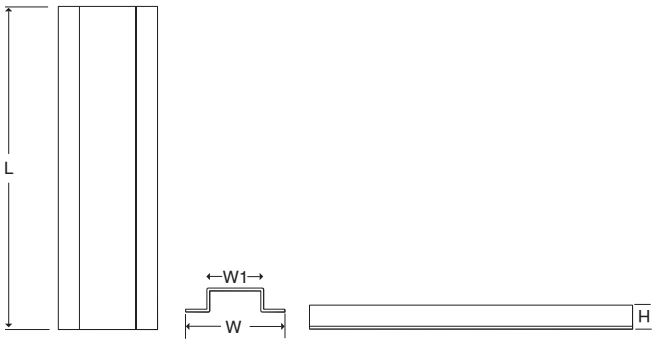
Easy to secure, the guard has a low profile and the galvanised finish offers long lasting resistance to corrosion.

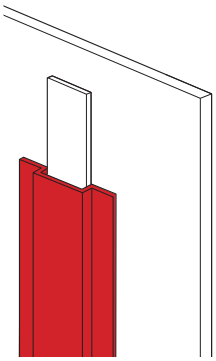
L mm	W mm	W1 mm	H mm	Unit Weight kg	Pack Quantity	Part Number
2000	72	40	17	1.98	1	**AVG**
3000				2.72		**AVG 3**

Material: Galvanised Steel.

L mm	W mm	W1 mm	H mm	Unit Weight kg	Pack Quantity	Part Number
2000	72	40	17	1.98	1	**AVP**
3000				2.72		**AVP 3**

Material: Galvanised Steel with black powder coating.



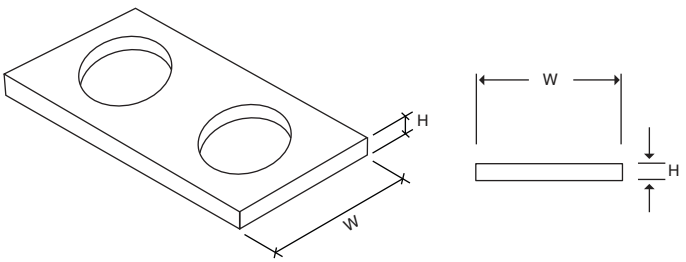


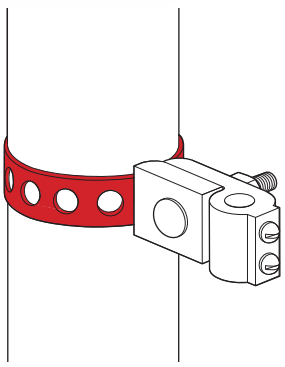
Bare Perforated Copper Tape

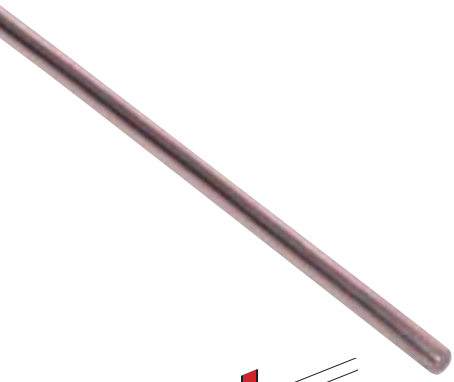
Wallis perforated copper tape is used for bonding of lightning protection systems. It is annealed for ease of use and has radiused edges.

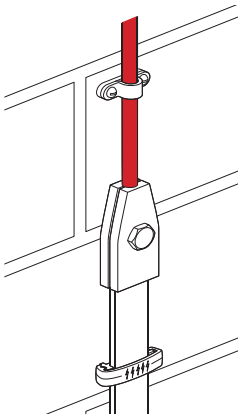
Size W x H mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
25 x 1.5	37.5	0.33	100	**PCT 251**

Material: Copper to BS EN 13601 (formerly BS 1432).







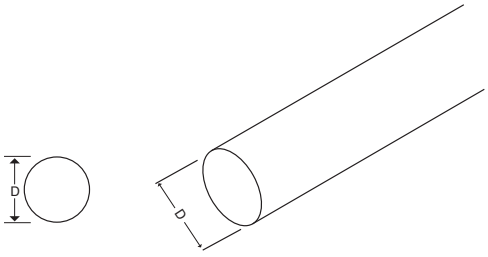


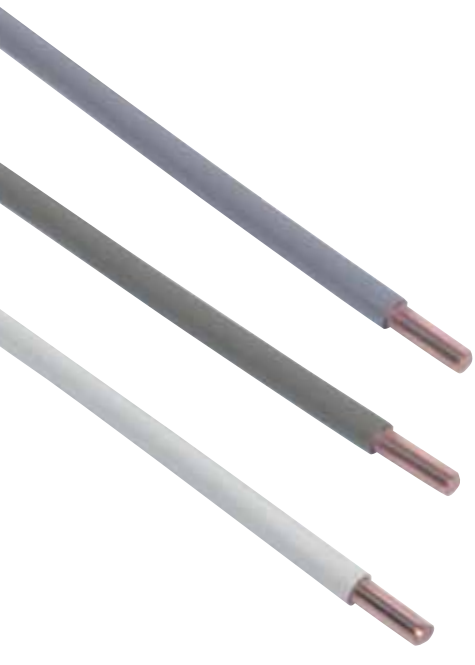
Bare Solid Circular Copper Conductor

Wallis bare 8mm diameter solid circular copper conductor is used on lightning protection systems. It is annealed for ease of use.

D mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
8	50.27	0.44	50	**CSC 08**

Material: Copper to BS EN 13601 (formerly BS 1433).





CPC 08G

CPC 08S

CPC 08W

PVC Covered Solid Circular Copper Conductors

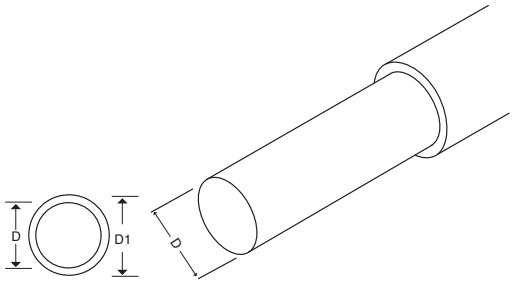
Wallis PVC covered 8mm diameter copper conductors are mainly used as down conductors on a building's structural lightning protection system.

There is a choice of five standard PVC colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All the PVC coverings are UV stabilised although some discolouration may occur over time.

Other PVC colours are available to order but may be subject to minimum order quantities and lead-times. Please contact our sales office for further information.

D mm	Colour	C.S.A. mm²	D1 mm	Weight per Metre kg	Standard Coil Size m	Part Number
8	Brown	50.27	10	0.49	50	**CPC 08 B**
	Black					**CPC 08 BL**
	Grey					**CPC 08 G**
	Stone					**CPC 08 S**
	White					**CPC 08 W**

Material: Copper to BS EN 13601 (formerly BS 1433).
PVC colours to BS 5252.

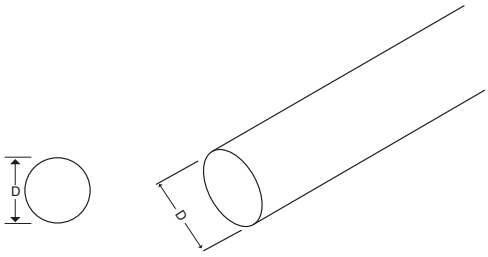


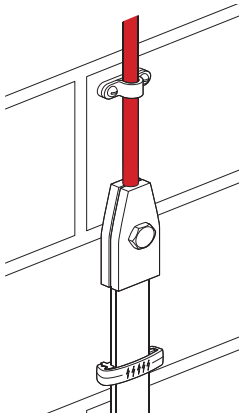
Bare Solid Circular Aluminium Conductor

Wallis bare 8mm diameter solid circular aluminium conductor is used on lightning protection systems. It is annealed for ease of use.

D mm	C.S.A. mm²	Weight per Metre kg	Standard Coil Size m	Part Number
8	50.27	0.12	50	**CSA 08**

Material: Aluminium to BS 2898.





PVC Covered Solid Circular Aluminium Conductors

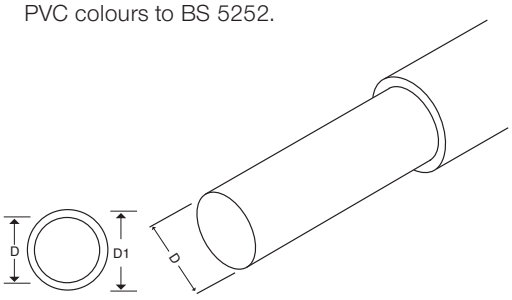
Wallis PVC covered 8mm diameter aluminium conductors are used as down conductors on a building's structural lightning protection system.

There is a choice of five standard PVC colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All the PVC coverings are UV stabilised although some discolouration may occur over time.

Other PVC colours are available to order but may be subject to minimum order quantities and lead-times. Please contact our sales office for further information.

D mm	Colour	C.S.A. mm²	D1 mm	Weight per Metre kg	Standard Coil Size m	Part Number
8	Brown	50.27	10	0.18	50	**CPA 08 B**
	Black					**CPA 08 BL**
	Grey					**CPA 08 G**
	Stone					**CPA 08 S**
	White					**CPA 08 W**

Material: Aluminium to BS 2898.
PVC colours to BS 5252.



Bare Stranded Copper Conductors

Wallis bare stranded copper conductor is used on both lightning protection and earthing systems.
Available as soft drawn (copper wire that has been heat treated) and hard drawn (copper wire that has not been annealed after drawing).

Soft Drawn

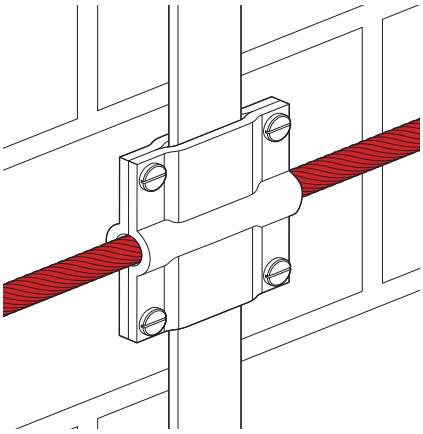
C.S.A. mm²	Stranding No. x Ø mm	Nominal Ø mm	Maximum Resistance @ 20°C Ω/km	Weight per Metre kg	Part Number
6	7 x 1.04	3.12	3.080	0.05	**CBS 006**
10	7 x 1.35	4.05	1.830	0.09	**CBS 010**
16	7 x 1.70	5.10	1.150	0.15	**CBS 016**
25	7 x 2.14	6.42	0.727	0.23	**CBS 025**
35	19 x 1.53	7.65	0.524	0.32	**CBS 035**
50	19 x 1.78	8.90	0.387	0.43	**CBS 050**
70	19 x 2.14	10.70	0.268	0.62	**CBS 070**
95	19 x 2.52	12.60	0.193	0.86	**CBS 095**
120	37 x 2.03	14.21	0.153	1.09	**CBS 120**
150	37 x 2.25	15.75	0.124	1.33	**CBS 150**
185	37 x 2.52	17.64	0.099	1.67	**CBS 185**
240	61 x 2.25	20.25	0.075	2.20	**CBS 240**
300	61 x 2.52	22.68	0.060	2.76	**CBS 300**
400	61 x 2.85	25.65	0.047	3.53	**CBS 400**

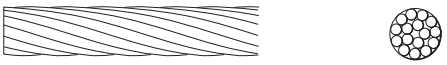
Material: Copper to BS 6360.

Hard Drawn

C.S.A. mm²	Stranding No. x Ø mm	Nominal Ø mm	Maximum Resistance @ 20°C Ω/km	Weight per Metre kg	Part Number
35	7 x 2.52	7.65	0.540	0.32	**CHS 035**
50	7 x 3.00	8.90	0.399	0.43	**CHS 050**
70	7 x 3.55	10.72	0.276	0.62	**CHS 070**
95	37 x 1.78	12.60	0.199	0.86	**CHS 095**

Material: Copper to BS 6360.



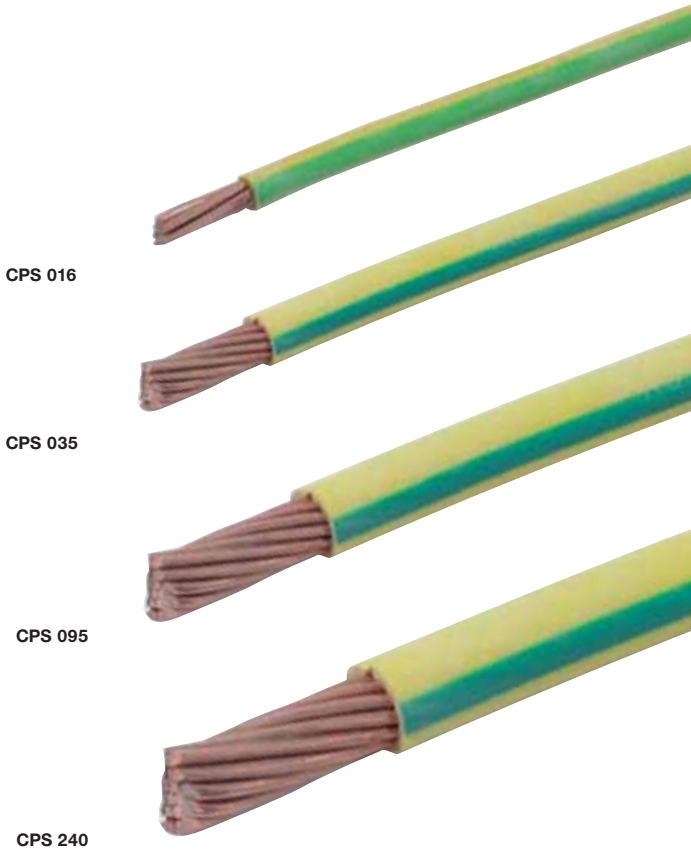


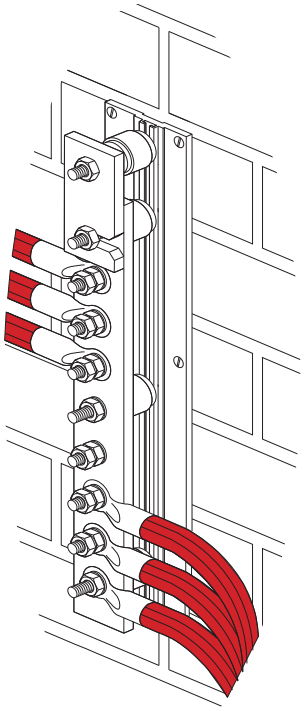
Green & Yellow PVC Insulated Stranded Copper Conductors

A range of single core stranded class 2 plain annealed copper conductors with a heat resistant polyvinyl chloride (PVC) outer sheath. These non-armoured single insulation cables are often referred to as 6491X and are manufactured in accordance with specification BS 6004. Harmonised code H07V-R. Voltage rating 450/750V (designated suitable 600/1000V systems). Heat resistant PVC insulation complying with BS 7655 Type TI 1. Operating temperatures 0°C to +70°C. Installation is not recommended for PVC below 0°C as the compound may become brittle.

C.S.A. mm²	Stranding No. x Ø mm	Nominal Ø mm	Maximum Resistance @ 20°C Ω/km	Weight per Metre kg	Part Number
6	7 x 1.04	4.8	3.800	0.07	**CBS 006**
10	7 x 1.35	6.1	1.830	0.12	**CBS 010**
16	7 x 1.70	7.1	1.150	0.19	**CBS 016**
25	7 x 2.14	8.9	0.727	0.29	**CBS 025**
35	19 x 1.53	10.1	0.524	0.41	**CBS 035**
50	19 x 1.78	11.8	0.387	0.53	**CBS 050**
70	19 x 2.14	13.6	0.268	0.73	**CBS 070**
95	19 x 2.52	15.9	0.193	1.00	**CBS 095**
120	37 x 2.03	17.5	0.153	1.16	**CBS 120**
150	37 x 2.25	19.4	0.124	1.54	**CBS 150**
185	37 x 2.52	21.7	0.099	2.01	**CBS 185**
240	61 x 2.25	24.5	0.075	2.49	**CBS 240**
300	61 x 2.52	27.5	0.060	3.05	**CBS 300**
400	61 x 2.85	30.9	0.047	3.90	**CBS 400**

Material: Copper to BS 6360.
PVC Colour to BS 6746C.

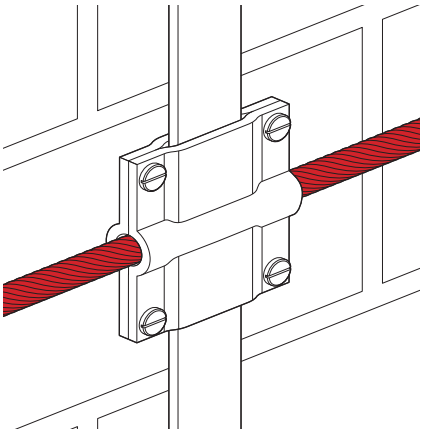


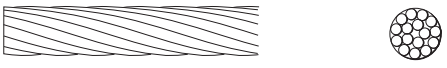


Tinned Stranded Copper Conductors

C.S.A. mm²	Stranding No. x Ø mm	Nominal Ø mm	Maximum Resistance @ 20°C Ω/km	Weight per Metre kg	Part Number
6	7 x 1.04	3.12	3.110	0.05	**CTS 006**
10	7 x 1.35	4.05	1.840	0.09	**CTS 010**
16	7 x 1.70	5.10	1.160	0.15	**CTS 016**
25	7 x 2.14	6.42	0.734	0.23	**CTS 025**
35	19 x 1.53	7.65	0.529	0.32	**CTS 035**
50	19 x 1.78	8.90	0.391	0.43	**CTS 050**
70	19 x 2.14	10.70	0.270	0.62	**CTS 070**
95	19 x 2.52	12.60	0.195	0.86	**CTS 095**
120	37 x 2.03	14.21	0.154	1.09	**CTS 120**
150	37 x 2.25	15.75	0.126	1.33	**CTS 150**
185	37 x 2.52	17.64	0.100	1.67	**CTS 185**
240	61 x 2.25	20.25	0.076	2.20	**CTS 240**
300	61 x 2.52	22.68	0.061	2.76	**CTS 300**
400	61 x 2.85	25.65	0.048	3.53	**CTS 400**

Material: Copper to BS 6360.





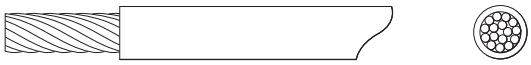
Lead Covered Stranded Copper Conductors

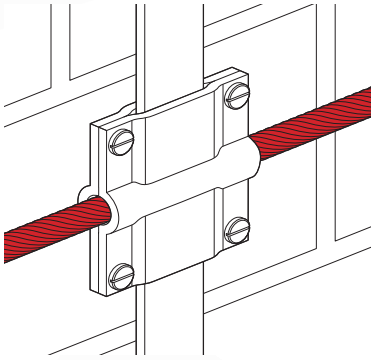
C.S.A. mm²	Stranding No. x Ø mm	Nominal Diameter mm	Weight per Metre kg	Part Number
185	37 x 2.52	21.64	2.71	**CLS 185**
240	61 x 2.25	24.25	3.58	**CLS 240**
300	61 x 2.52	26.68	4.49	**CLS 300**
400	61 x 2.85	29.65	5.74	**CLS 400**

Material: Copper to BS 6360.

CLS 185

CLS 240





Anti-Vandal Cable Guards

Wallis anti-vandal cable guards provide protection from accidental damage, vandalism and theft for cables up to 50mm diameter.

For installation on walls etc.
These guards have flat flanges and are supplied with screw fixing holes for ease of installation.

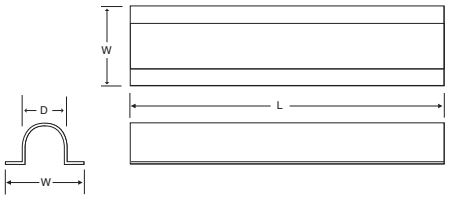
L mm	W mm	D mm	Colour	Unit Weight kg	Pack Quantity	Part Number
3000	105	50	Grey	2.40	1	**AVC 001**

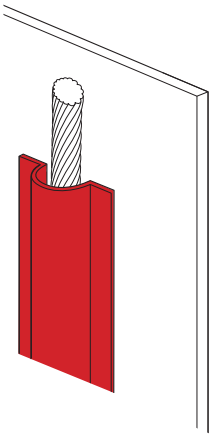
Material: Plastic.

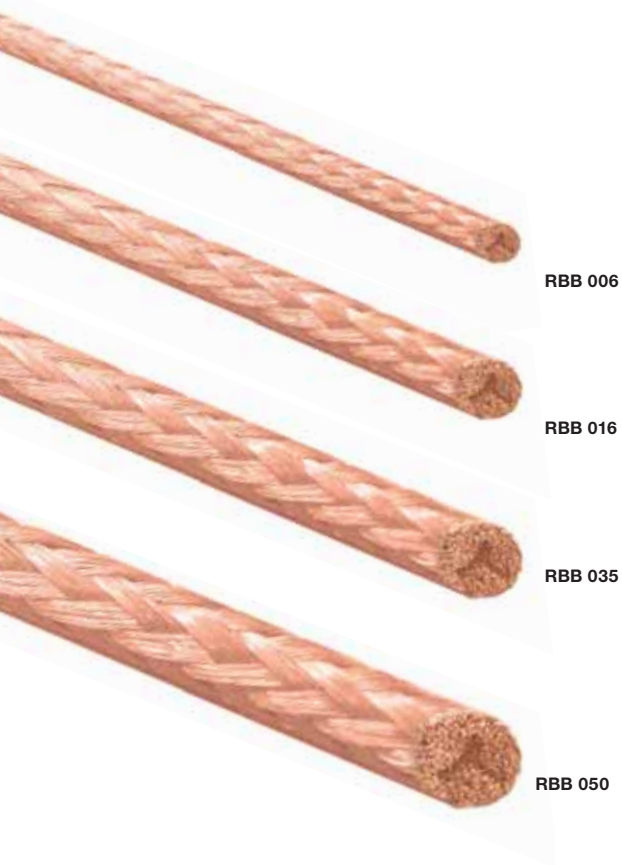
For installation on wooden telegraph poles
These guards have angled flanges and are supplied with screw fixing holes for ease of installation.

L mm	W mm	D mm	Colour	Unit Weight kg	Pack Quantity	Part Number
3000	95	50	Black	2.40	1	**AVC 002**

Material: Plastic.







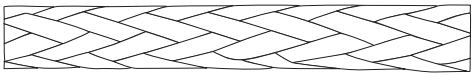
Bare Copper Round Braids

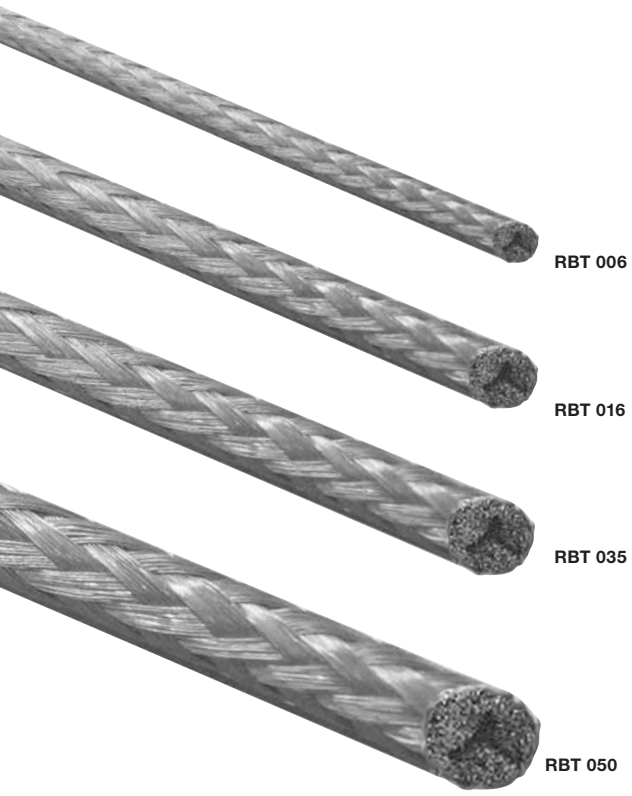
Wallis copper round braids are utilised as flexible earth bonding leads.

Other sizes and constructions are available on request. Please contact our sales office for further information

Nominal C.S.A. mm²	Nominal Ø mm	Wire Strand Ø mm	Current Rating Amps	Weight per Metre kg	Standard Coil Size m	Part Number
6	5.0	0.15	69	0.05	100	**RBB 006**
10	7.0		97	0.08	50	**RBB 010**
16	8.0		132	0.13	50	**RBB 016**
25	10.0		178	0.22	50	**RBB 025**
35	12.0		223	0.30	50	**RBB 035**
50	15.0		282	0.44	50	**RBB 050**

Material: Copper wire to BS EN 13602 (formerly BS 4109).





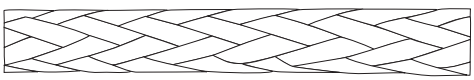
Tinned Copper Round Braids

Wallis tinned copper round braids are utilised as flexible earth bonding leads with additional corrosion protection.

Other sizes and constructions are available on request. Please contact our sales office for further information.

Nominal C.S.A. mm²	Nominal Ø mm	Wire Strand Ø mm	Current Rating Amps	Weight per Metre kg	Standard Coil Size m	Part Number
6	5.0	0.15	69	0.05	100	**RBT 006**
10	7.0		97	0.08	50	**RBT 010**
16	8.0		132	0.13	50	**RBT 016**
25	10.0		178	0.22	50	**RBT 025**
35	12.0		223	0.30	50	**RBT 035**
50	15.0		282	0.44	50	**RBT 050**

Material: Copper wire to BS EN 13602 (formerly BS 4109).



FASTENERS & FIXINGS

Hexagon Head Set Screws

Phosphor Bronze

Thread Size	Length mm	Weight per 100 kg	Pack Quantity	Part Number
M6	10	1.20	100	**OSP 0610**
	12	1.30		**OSP 0612**
	16	1.50		**OSP 0616**
	20	1.90		**OSP 0620**
M8	16	1.75	100	**OSP 0816**
	20	2.00		**OSP 0820**
	25	2.30		**OSP 0825**
	30	2.90		**OSP 0830**
M10	16	1.95	100	**OSP 1016**
	20	2.20		**OSP 1020**
	25	2.75		**OSP 1025**
	30	3.10		**OSP 1030**
	35	3.40		**OSP 1035**
M12	25	4.50	100	**OSP 1225**
	30	4.75		**OSP 1230**
	35	5.00		**OSP 1235**
	40	5.70		**OSP 1240**
	50	6.30		**OSP 1250**

Material: Phosphor Bronze.

Brass

Thread Size	Length mm	Weight per 100 kg	Pack Quantity	Part Number
M6	10	1.20	100	**OSB 0610**
	12	1.30		**OSB 0612**
	16	1.50		**OSB 0616**
	20	1.90		**OSB 0620**
M8	16	1.75	100	**OSB 0816**
	20	2.00		**OSB 0820**
	25	2.30		**OSB 0825**
	30	2.90		**OSB 0830**
M10	16	1.95	100	**OSB 1016**
	20	2.20		**OSB 1020**
	25	2.75		**OSB 1025**
	30	3.10		**OSB 1030**
	35	3.40		**OSB 1035**
M12	25	4.50	100	**OSB 1225**
	30	4.75		**OSB 1230**
	35	5.00		**OSB 1235**
	40	5.70		**OSB 1240**
	50	6.30		**OSB 1250**

Material: Brass.

Hexagon Head Set Screws (continued)

Stainless Steel

Thread Size	Length mm	Weight per 100 kg	Pack Quantity	Part Number
M6	10	1.20	100	**OSS 0610**
	12	1.30		**OSS 0612**
	16	1.50		**OSS 0616**
	20	1.90		**OSS 0620**
M8	16	1.75	100	**OSS 0816**
	20	2.00		**OSS 0820**
	25	2.30		**OSS 0825**
	30	2.90		**OSS 0830**
M10	16	1.95	100	**OSS 1016**
	20	2.20		**OSS 1020**
	25	2.75		**OSS 1025**
	30	3.10		**OSS 1030**
	35	3.40		**OSS 1035**
M12	25	4.50	100	**OSS 1225**
	30	4.75		**OSS 1230**
	35	5.00		**OSS 1235**
	40	5.70		**OSS 1240**
	50	6.30		**OSS 1250**

Material: Stainless Steel.

Hexagon Nuts

Phosphor Bronze

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.35	100	**ONP 06**
M8	0.90		**ONP 08**
M10	1.15		**ONP 10**
M12	1.65		**ONP 12**

Material: Phosphor Bronze.

Brass

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.25	100	**ONB 06**
M8	0.80		**ONB 08**
M10	1.15		**ONB 10**
M12	1.65		**ONB 12**

Material: Brass.

Stainless Steel

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.25	100	**ONS 06**
M8	0.80		**ONS 08**
M10	1.15		**ONS 10**
M12	1.65		**ONS 12**

Material: Stainless Steel.

Flat Washers

Phosphor Bronze

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.05	100	**OWP 06**
M8	0.15		**OWP 08**
M10	0.25		**OWP 10**
M12	0.50		**OWP 12**

Material: Phosphor Bronze.

Brass

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.05	100	**OWB 06**
M8	0.15		**OWB 08**
M10	0.25		**OWB 10**
M12	0.50		**OWB 12**

Material: Brass.

Stainless Steel

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.05	100	**OWS 06**
M8	0.15		**OWS 08**
M10	0.25		**OWS 10**
M12	0.50		**OWS 12**

Material: Stainless Steel.

Spring Washers

Phosphor Bronze

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.04	100	**OTP 06**
M8	0.10		**OTP 08**
M10	0.20		**OTP 10**
M12	0.20		**OTP 12**

Material: Phosphor Bronze.

Stainless Steel

Thread Size	Weight per 100 kg	Pack Quantity	Part Number
M6	0.04	100	**OTS 06**
M8	0.10		**OTS 08**
M10	0.20		**OTS 10**
M12	0.20		**OTS 12**

Material: Stainless Steel.

Countersunk Wood Screws

Brass

Size	Weight per 100 kg	Pack Quantity	Part Number
1 1/4" x No. 10	0.20	100	**OAB 132**
1 1/4" x No. 12	0.30		**OAB 133**
1 1/2" x No. 10	0.50		**OAB 138**
1 1/2" x No. 12	0.60		**OAB 139**
2" x No. 10	0.80		**OAB 151**
2" x No. 12	1.00		**OAB 152**

Material: Brass.

Stainless Steel

Size	Weight per 100 kg	Pack Quantity	Part Number
1 1/4" x No. 10	0.20	100	**OAS 132**
1 1/4" x No. 12	0.30		**OAS 133**
1 1/2" x No. 10	0.50		**OAS 138**
1 1/2" x No. 12	0.60		**OAS 139**
2" x No. 10	0.80		**OAS 151**
2" x No. 12	1.00		**OAS 152**

Material: Stainless Steel.

Round Head Wood Screws

Brass

Size	Weight per 100 kg	Pack Quantity	Part Number
1 1/4" x No. 10	0.20	100	**ORB 132**
1 1/4" x No. 12	0.30		**ORB 133**
1 1/2" x No. 10	0.50		**ORB 138**
1 1/2" x No. 12	0.60		**ORB 139**
2" x No. 10	0.80		**ORB 151**
2" x No. 12	1.00		**ORB 152**

Material: Brass.

Stainless Steel

Size	Weight per 100 kg	Pack Quantity	Part Number
1 1/4" x No. 10	0.20	100	**ORS 132**
1 1/4" x No. 12	0.30		**ORS 133**
1 1/2" x No. 10	0.50		**ORS 138**
1 1/2" x No. 12	0.60		**ORS 139**
2" x No. 10	0.80		**ORS 151**
2" x No. 12	1.00		**ORS 152**

Material: Stainless Steel.

Countersunk Machine Screws

Brass

Thread Size	Length mm	Weight per 100 kg	Pack Quantity	Part Number
M6	12	0.30	100	OMB 0612
	16	0.40		OMB 0616
	20	0.50		OMB 0620
M8	16	0.45	100	OMB 0816
	20	0.55		OMB 0820
	25	0.65		OMB 0825
M10	25	0.75	100	OMB 1025
	30	0.85		OMB 1030
	35	0.95		OMB 1035

Material: Brass.

Stainless Steel

Thread Size	Length mm	Weight per 100 kg	Pack Quantity	Part Number
M6	12	0.30	100	OMS 0612
	16	0.40		OMS 0616
	20	0.50		OMS 0620
M8	16	0.45	100	OMS 0816
	20	0.55		OMS 0820
	25	0.65		OMS 0825
M10	25	0.75	100	OMS 1025
	30	0.85		OMS 1030
	35	0.95		OMS 1035

Material: Stainless Steel.

Plastic Wall Plugs

Screw Size	Colour	Weight per 100 kg	Pack Quantity	Part Number
No. 10 – 14	Black	0.15	100	OP10 BLA
	Blue			OP10 BLU
	Brown			OP10 BRO
	Red			OP10 RED

Material: Plastic.

Round Head Copper Nails

Length mm	Weight per 100 kg	Pack Quantity	Part Number
50	0.70	100	**OCN 050**

Material: Copper.

Round Head Rivets

Copper

Size mm	Weight per 100 kg	Pack Quantity	Part Number
5 x 12	0.35	100	**ORC 512**
5 x 20	0.45		**ORC 520**

Material: Copper.

Aluminium

Size mm	Weight per 100 kg	Pack Quantity	Part Number
5 x 12	0.12	100	**ORA 512**
5 x 20	0.15		**ORA 520**

Material: Aluminium.

PART NUMBER INDEX

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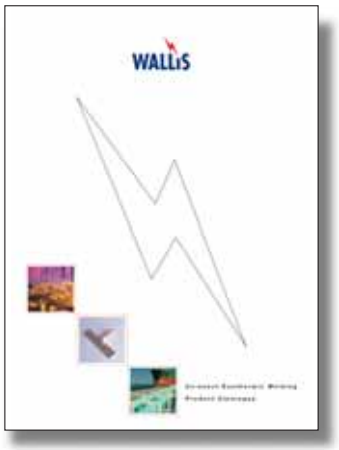
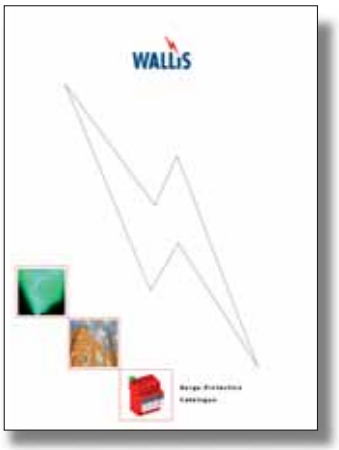
Other Literature



Cu-nnect Exothermic Welding Catalogue.

A simple and economical method of making permanent, high quality electrical connections.



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A range of products designed to protect sensitive electronic equipment from damage caused by transient over-voltages.

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