

WALLIS



THORNE &
DERRICK
INTERNATIONAL

Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com



**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, petrochemical 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.



Introduction	2 – 3
Product Locator	4 – 5
Alphabetical Product Index	6 – 8
Earthing	9 – 40
Lightning Protection	41 – 86
Conductors	87 – 104
Fasteners & Fixings	105 – 111
Part Number Index	112 – 115
How to Order	116



**THORNE &
DERRICK**
INTERNATIONAL

Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com

Welcome to Wallis



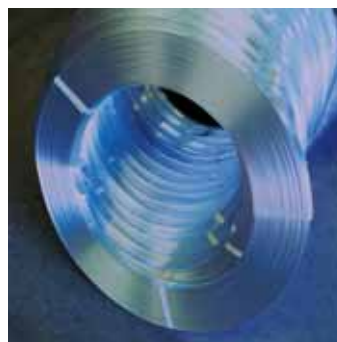
Founded over 60 years ago, we have a long tradition of providing first class earthing and lightning protection products. What's more, we believe we have as wide a range of products as can be found in the industry.



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.



INTRODUCTION



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.

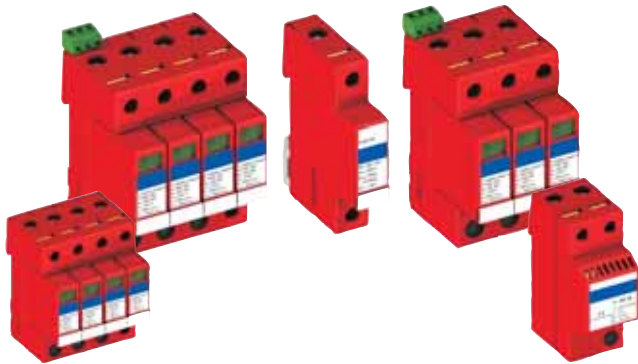
Such is our reputation for high standards that Wallis equipment is used around the world, including the Middle East and Far East, with stocking distributors in key areas.

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.

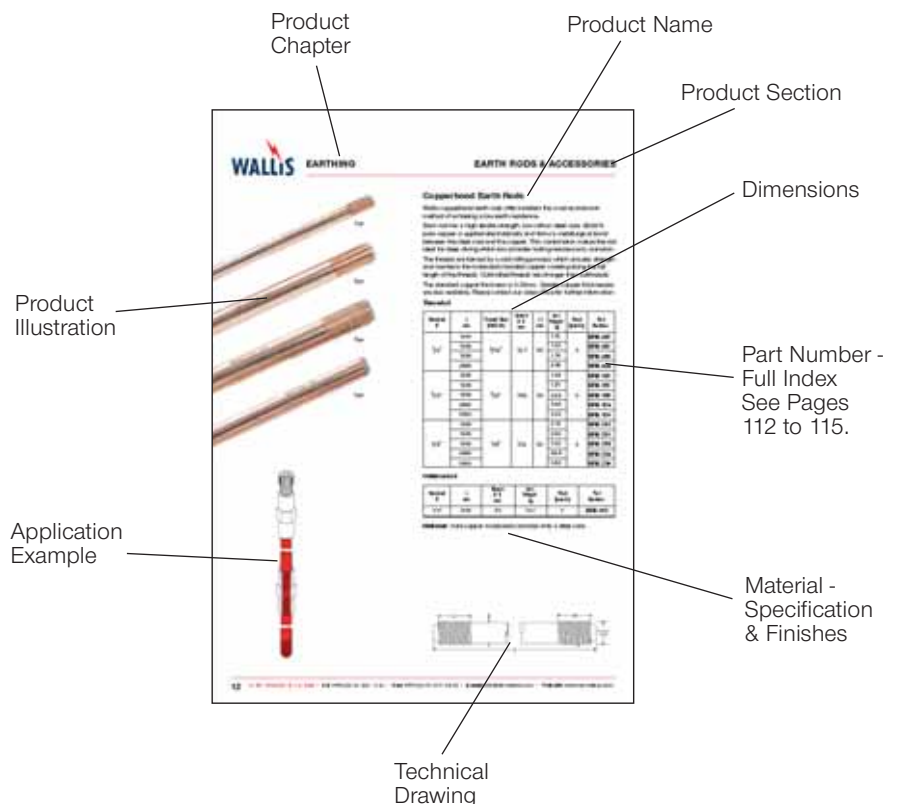
We also offer a comprehensive range of surge protection devices for mains power, data, signal and telephone lines, to protect sensitive electronic equipment from damage caused by transient over-voltages.

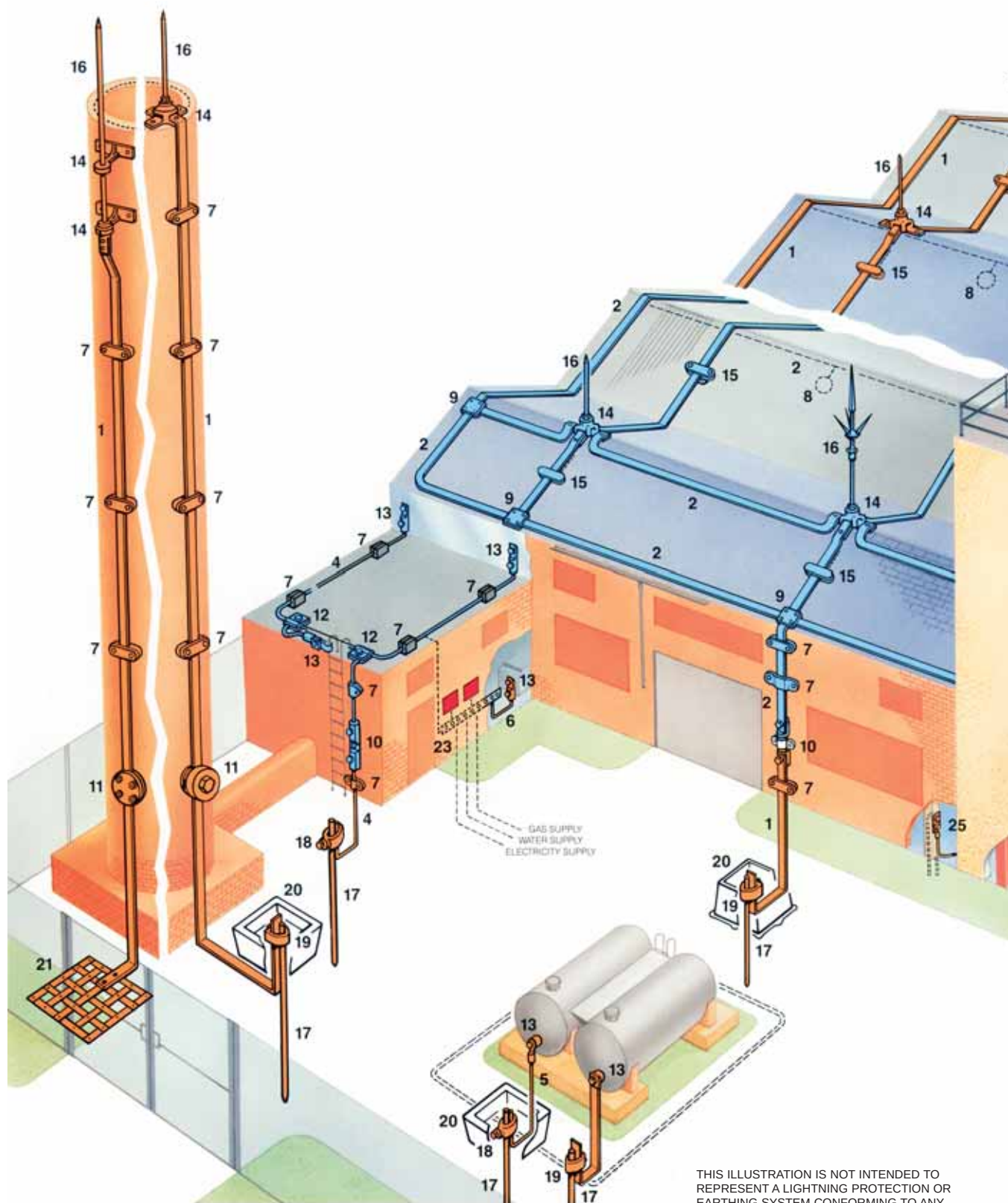
Please contact our sales office for further details.



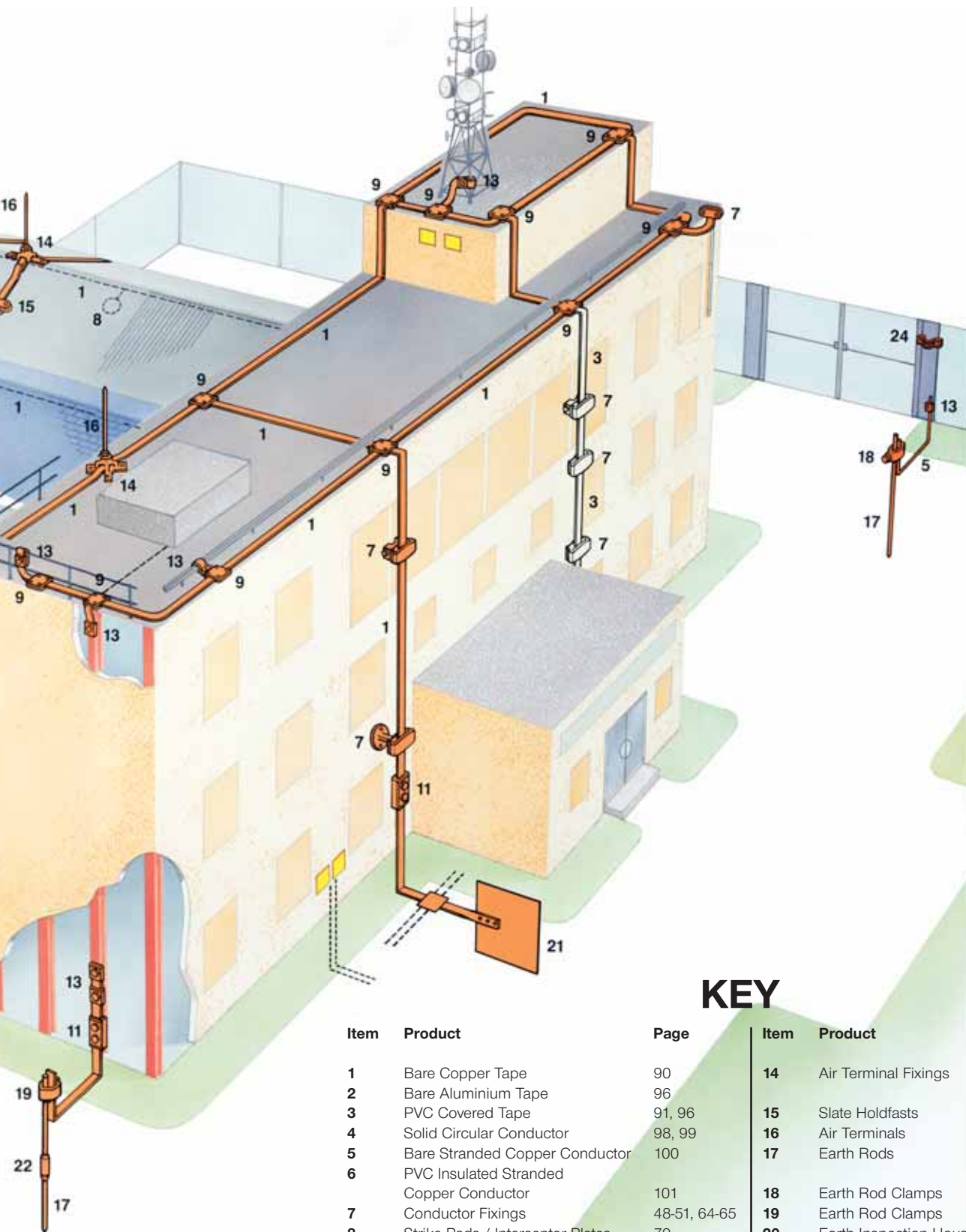
Using This Catalogue

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



KEY

Item	Product	Page	Item	Product	Page
1	Bare Copper Tape	90	14	Air Terminal Fixings	45-47, 62, 72-74
2	Bare Aluminium Tape	96	15	Slate Holdfasts	15
3	PVC Covered Tape	91, 96	16	Air Terminals	44, 62, 72
4	Solid Circular Conductor	98, 99	17	Earth Rods	12, 14, 16, 18-19
5	Bare Stranded Copper Conductor	100	18	Earth Rod Clamps	21
6	PVC Insulated Stranded Copper Conductor	101	19	Earth Rod Clamps	20
7	Conductor Fixings	48-51, 64-65	20	Earth Inspection Housings	27-29
8	Strike Pads / Interceptor Plates	79	21	Earth Plates & Lattice Mats	25
9	Square Tape Clamps	57	22	Earth Rod Couplings	13, 15, 17
10	Bi-Metallic Connectors	60, 68	23	Earth Bars & Disconnecting Link	32-33
11	Test Clamps	58-59	24	Flexible Copper Braid Bonds	36
12	'MV' Clamps	66	25	Earth Bonding Points	31
13	Bonding Clamps	60-61, 68-71			

A

'A' Clamps 20
 Adhesive DC Clips 54
 Air Rod Brackets, Side Mounting 47
 Air Rod Saddles
 Cable 74
 Flat 46
 Free-Standing 85
 Light Duty 45
 Multi-Purpose 62
 Ridge 46
 Air Rods 44, 62, 72, 84
 Air Terminal Saddles
 Cable 74
 Flat 46
 Free-Standing 85
 Light Duty 45
 Multi-Purpose 62
 Ridge 46
 Air Terminals 44, 62, 72, 84
 Aluminium Conductors, Solid Circular 98-99
 Aluminium Tapes 96
 Anti-Vandal
 Cable Guards 103
 Tape Guards 97

B

'B' Bonds 60, 69, 70
 Back Plate Holdfasts 56
 Bare
 Aluminium Tapes 96
 Copper Flat Braids 95
 Copper Round Braids 104
 Copper Tapes 90
 Hard Drawn Copper Bars 94
 Perforated Copper Tape 97
 Solid Circular Conductors 98-99
 Stranded Copper Conductors 100
 Bentonite 26
 Bi-Metallic Connectors 60, 68
 Bitumen Felt
 DC Clips 55
 Roll 82
 Blocks, Earth 34
 Bonding Clamps
 'B' Bonds 60
 Circular 'B' Bonds 69
 Metalwork Bonding 68
 Multi-Purpose 'B' Bonds 70
 Parallel Groove 35
 Rainwater Pipe 61, 69
 Tower Earth 35, 70, 78
 Watermain Pipe Bond 61
 Bonding Points 31
 Bosses, Earth 34
 Brackets, Side Mounting Air Rod 47, 73
 Braid Bonds 36
 Braids
 Flat 95
 Round 104

C

'C' Crimp Connectors 38
 Cable Guards, Anti-Vandal 103
 Cable Shoes 74
 Cable to Tape Connectors 78
 Circular 'B' Bonds 69
 Circular Conductors 98-99
 Circular Conductor Shoes 71
 Clamps
 'A' Type 20
 'B' Bonds 60

'G' Type 21
 'MV' Type 66
 'U' Bolt 22
 Interface Test 67
 Metalwork Bonding 68
 Multi-Purpose 'B' Bonds 70
 Oblong Test 58
 Parallel Groove 35
 Plate Type Test 59
 Screw Down Test
 Split Connector 23
 Square Cable 77
 Square Tape 57
 'T' Connector 66
 Tower Earth 35, 70, 78
 Cleaning Solution 55
 Clips
 Adhesive DC 54
 Bitumen Felt DC 55
 Metallic Cable 76
 Metallic Conductor 64
 Metallic DC 48
 Non-Metallic DC 49
 Non-Metallic DC with Plug 50
 Non-Metallic Down Conductor 65
 One Hole 64
 Push-In Roof Conductor 65
 Tape 51
 Weldable DC 53
 Compound, Low-Resistance Earthing 26
 Compression Connectors
 'C' Crimp 38
 Terminals 39, 40
 Concrete
 Bases 86
 Earth Inspection Housings 29
 Conductors
 Solid Circular 98-99
 Stranded Copper 100-103
 Connectors
 'C' Crimp 38
 'T' Clamp 66
 Bi-Metallic 60, 68
 Cable to Tape 78
 Solid Circular to Tape 67
 Universal Cable 77
 Copperbond Earth Rods 12
 Copper Bars 94
 Copper Conductors
 Solid Circular 98-99
 Stranded 100-103
 Copper Braids
 Flat 95
 Round 104
 Copper Nails, Round Head 111
 Copper Tapes
 Bare 90
 Green & Yellow PVC Insulated 92
 Lead Covered 92
 LSOH Covered 92
 Perforated Bare 97
 PVC Covered 91
 Tinned 93
 Couplings
 Rod to Cable 74
 Rod to Tape 47
 Threaded 13
 Countersunk
 Machine Screws 110
 Wood Screws 109
 Coupling Dowels 15, 17
 Crimp Connectors 38
 Cross-Profile Galvanised Steel Earth Rod 19

D

- DC Clips
 - Adhesive DC 54
 - Bitumen Felt DC 55
 - Metallic 48
 - Non-Metallic DC 49
 - Non-Metallic DC with Plug 50
 - Non-Metallic Down Conductor 65
 - Push-In Roof Conductor 65
 - Weldable DC 53
- Disconnecting Link 33
- Down Conductor Clips, Non-Metallic 65
- Dowels
 - for Solid Copper Earth Rods 15
 - for Stainless Steel Earth Rods 17
- Driving Heads
 - for Copperbond Earth Rods 13
 - for Solid Copper Earth Rods 15
 - for Stainless Steel Earth Rods 17
- Driving Spikes
 - for Solid Copper Earth Rods 15
 - for Stainless Steel Earth Rods 17

E

- Earth Bar Insulators 30
- Earth Bar Link 33
- Earth Bars
 - for Earth Inspection Housings 27, 28, 29
 - Standard Range 32, 33
 - Static 37
- Earth Blocks 34
- Earth Bonding Points 31
- Earth Bosses 34
- Earth Clamps
 - 'A' Type 20
 - 'G' Type 21
 - 'U' Bolt Type 22
 - Split Connector Type 24
 - Parallel Groove Type 35
 - Tower Earth Type 35, 70
- Earth Inspection Housings
 - Concrete 29
 - Heavy Duty Plastic 27
 - Light Duty Plastic 28
- Earth Receptacle, Static 37
- Earth Rod Clamps
 - 'A' Type 20
 - 'G' Type 21
 - 'U' Bolt Type 22
 - Split Connector Type 24
- Earth Rod Seals 30
- Earth Plates, Solid Copper 25
- Earth Rods
 - Copperbond 12
 - Solid Copper 14
 - Stainless Steel 16
- Earthing Compound
 - Bentonite 26
 - Low-Resistance 26
- Eyebolts 37

F

- Flat Air Rod Saddles 46
- Flat
 - Braids 95
 - Washers 108
- Flexible Copper Braid Bonds 36
- Flux 83
- Free-Standing Air Terminal Supports 85
- Free-Standing Air Terminals 84

G

- 'G' Clamps 21
- Galvanised Steel Earth Rods

- Cross-Profile 19
- Galvanised Steel Earth Rod Set 18
- Glazing Bar Holdfasts 56
- Green & Yellow Insulating Tape 82
- Green & Yellow PVC Insulated
 - Copper Tapes 92
 - Stranded Copper Conductors 101
- Guards, Anti-Vandal
 - Cable 103
 - Tape 97

H

- Heavy Duty Earth Inspection Housings 27
- Hexagon
 - Head Set Screws 106-107
 - Nuts 107
- Hard Drawn Copper Bars 94
- Holdfasts
 - Back Plate 56
 - Glazing Bar 56
 - Pyramid 71
 - Slate 52, 63

I

- Inhibiting Compound 80
- Inspection Housings
 - Concrete 29
 - Heavy Duty 27
 - Light Duty 28
- Inspection Housing Earth Bars
 - Concrete 29
 - Heavy Duty 27
 - Light Duty 28
- Insulators 30
- Insulating Tape Green & Yellow 82
- Interceptor Plates 79
- Interface Test Clamps 67

J

- Junction Clamps 57, 59, 66, 67, 77, 78

L

- Lattice Mats 25
- Lead Covered
 - Copper Tapes 92
 - Stranded Copper Conductors 103
- Light Duty
 - Air Rod Saddles 45
 - Earth Inspection Housings 28
- Link, Disconnecting 33
- Low-Resistance Earthing Compound 26
- LSOH Covered Copper Tapes 92

M

- 'MV' Clamps 66
- Mats, Solid Copper Lattice 25
- Metallic Cable Clips 76
- Metallic Conductor Clips 64
- Metallic DC Clips 48
- Metalwork Bonding Clamps 68
- Multi-Point 45, 72
- Multi-Purpose 'B' Bonds 70
- Multi-Purpose Air Rod Saddles 62

N

- Nails, Copper Round Head 111
- Non-Metallic DC Clips 49
- Non-Metallic DC Clips with Plug 50
- Non-Metallic Down Conductor Clips 65

O

- Oblong Test Clamps 58
- One Hole Cable Clips 75

One Hole Conductor Clips 64
Oxide Inhibiting Compound 80

P

Parallel Groove Clamps 35
Perforated Copper Tape 97
Pipe Bonds
 Rainwater 61, 69
 Watermain 61
Plate Type Test Clamps 59
Plates
 Interceptor 79
 Solid Copper 25
Plastic Inspection Housings
 Heavy Duty 27
 Light Duty 28
 Wall Plugs 110
Primer, Surface 55
Protective Pad 86
Puddle Flanges 80
Push-In Roof Conductor Clips 65
PVC Covered
 Aluminium Tapes 96
 Copper Tapes 91
 Solid Circular Conductors 98-99
PVC Insulated Green & Yellow
 Copper Tapes 92
 Stranded Copper Conductors 101
Pyramid Holdfast 71

R

Rainwater Pipe Bonds 61, 69
Re-bar Clamps 23
Receptacle, Static Earth 73
Ridge Saddles, Air Rod 46
Rivets, Round Head 111
Rod to Cable Couplings 74
Rod to Tape Couplings 47
Rods, Earth
 Copperbond 12
 Solid Copper 14
 Stainless Steel 16
Roof Conductor Clips, Push-In 65
Round Head
 Copper Nails 111
 Rivets 111
 Wood Screws 109

S

Saddles, Air Rod
 Cable 74
 Flat 46
 Light Duty 45
 Multi-Purpose 62
 Ridge 46
Screw Down Test Clamp 59
Screws 109-110
Sealing Tape 81
Seals 30
Set Screws, Hexagon Head Set 106-107
Side Mounting Air Rod Brackets 47, 73
Silfos 81
Slate Holdfasts 52, 63
Solder Tinmans 83
Solid Circular Conductors 98-99
Solid Circular to Tape Connectors 67
Solid Copper
 Earth Plates 25
 Earth Rods 14
 Lattice Mats 25
Solution, Cleaning 55
Solvent, Universal Welding 55
Spikes
 for Solid Copper Earth Rods 15
 for Stainless Steel Earth Rods 17

Split Bolt Connectors 36
Split Connector Clamps 24
Spring Washers 108
Square Cable Clamps 77
Square Junction Clamps 57
Square Tape Clamps 57
Stainless Steel Earth Rods 16
Static
 Earth Bar 37
 Earth Receptacle 37
Stranded Copper Conductors 100-103
Strike Pads 79
Surface Primer 55

T

'T' Connector Clamps 66
Tape
 Bare Aluminium 96
 Bare Copper 90
 Bare Perforated Copper 97
 Green & Yellow PVC Insulated Copper 92
 Lead Covered Copper 92
 LSOH Covered Copper 92
 PVC Covered Aluminium 96
 PVC Covered Copper 91
 Tinned Copper 93
Tape Clamps
 'A' Type 20
 'U' Bolt 22
 Square 57
Tape Clips 51
Tape Guards, Anti-Vandal 97
Taper Pointed Air Rods 44, 72
Terminals, Compression 39, 40
Test Clamps
 Interface 67
 Oblong 58
 Plate Type 59
 Screw Down 59
Threaded
 Copperbond Earth Rods 12
 Couplings 13
 Driving Heads 13
Tinmans Solder 83
Tinned
 Copper Flat Braids 95
 Copper Tapes 93
 Hard Drawn Copper Bars 94
 Stranded Copper Conductors 103
Tower Earth Clamps 35, 70, 78

U

'U' Bolt Clamps 22
Universal Cable Connectors 77
Universal Welding Solvent 55
Unthreaded Copperbond Earth Rod 12

V

Vandal Guards
 Cable 103
 Tape 97

W

Wall Plugs 110
Wallis Sealing Tape 81
Washers, Flat & Spring 108
Watermain Pipe Bond 61
Weldable DC Clips 53
Welding Solvent 55
Wood Screws 109

EARTHING

Introduction 10 – 11

Earth Rods & Accessories 12 – 19

Earthing Products 20 – 36

Static Earthing Products 37

Compression Connectors 38 – 40

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 needed 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.

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.



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.

Joints

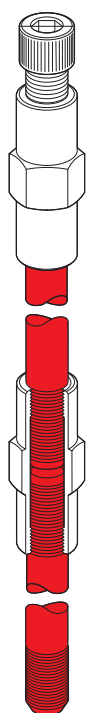
Joints should be mechanically effective, all joints other than welded ones are a potential discontinuity, and care should be taken to ensure contact surfaces are clean and that fixing

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

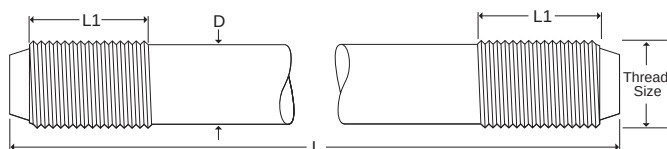
Nominal Size	L mm	Thread Size (UNC-2A)	Shank D mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
1/2"	1200	9/16"	12.7	30	1.18	5	ERB 412
	1500				1.55		ERB 415
	1800				1.76		ERB 418
	2400				2.36		ERB 424
5/8"	1200	5/8"	14.2	30	1.53	5	ERB 112
	1500				1.88		ERB 115
	1800				2.29		ERB 118
	2400				3.00		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

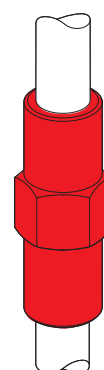
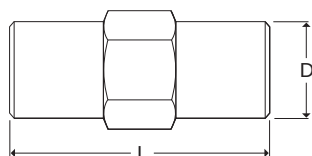
These Wallis high-strength couplings are used for joining copperbond threaded earth rods together. They facilitate deep driving and ensure continual contact between the rods both during and after installation.

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.

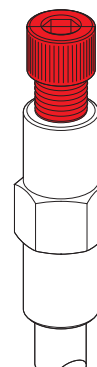
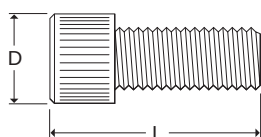


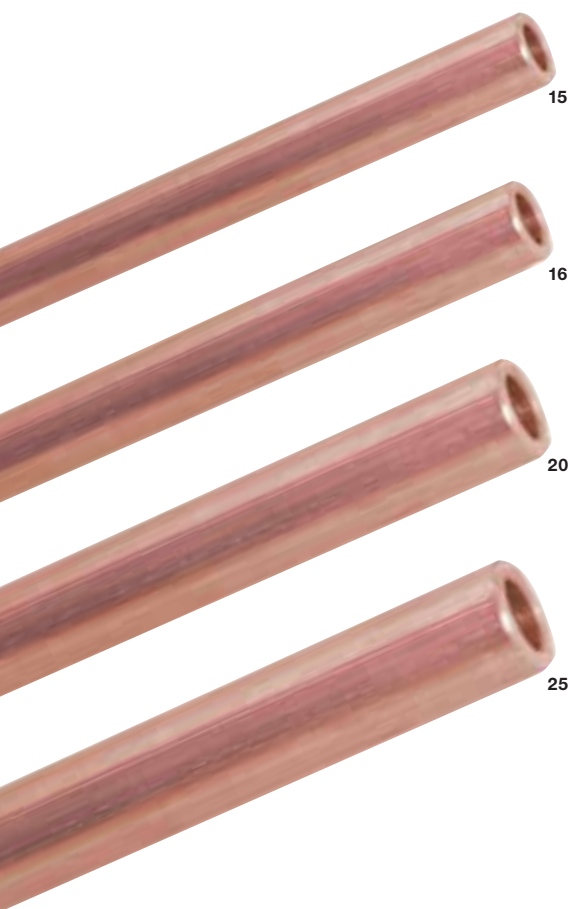
Threaded Driving Heads

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.



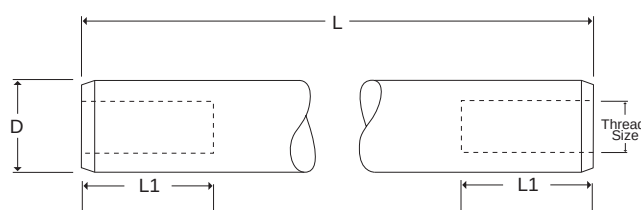
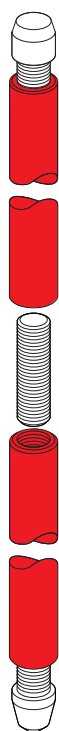


Solid Copper Earth Rods

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
25	3000	M12	25	8.40	5	ERC 230
	1200			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.

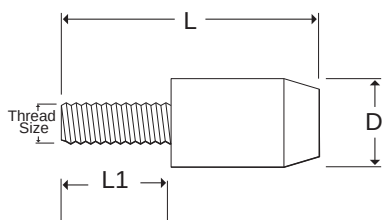


Driving Heads

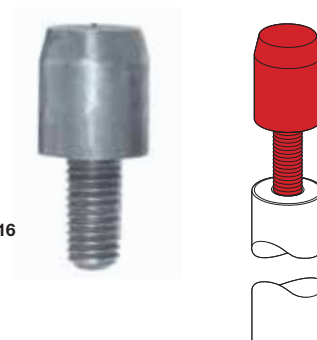
The driving head protects the internal thread and the top of the solid copper earth rod from damage when being driven into the ground.

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

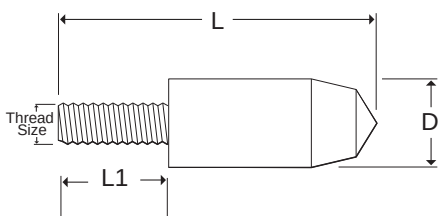


Driving Spikes

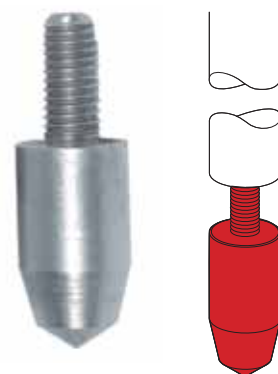
These driving spikes enable solid copper earth rods to be driven easily into the ground.

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

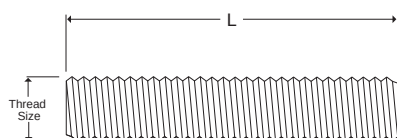


Coupling Dowels

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



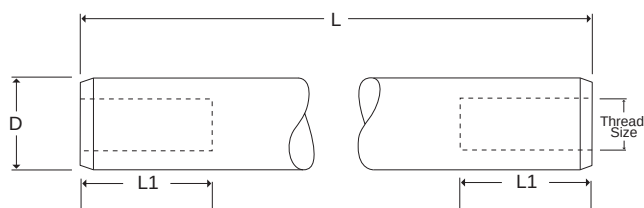
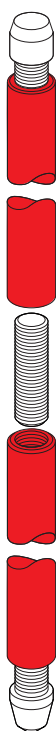


Stainless Steel Earth Rods

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.

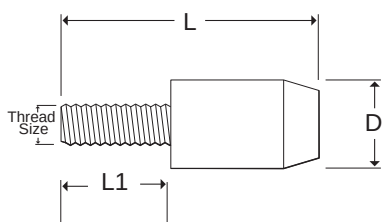


Driving Heads

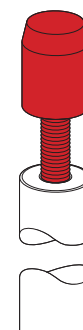
The driving head protects the internal thread and the top of the stainless steel earth rod from damage when being driven into the ground.

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.



ERCD 16

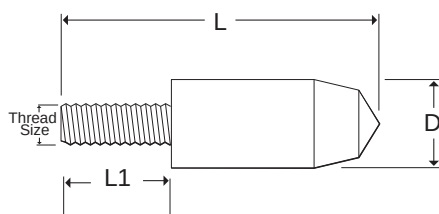


Driving Spikes

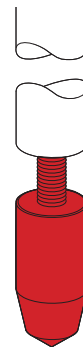
These driving spikes enable stainless steel earth rods to be driven easily into the ground.

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.



ERCS 16

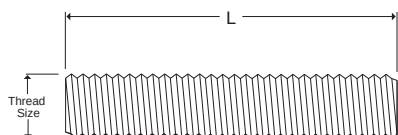


Coupling Dowels

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.



ERD 16



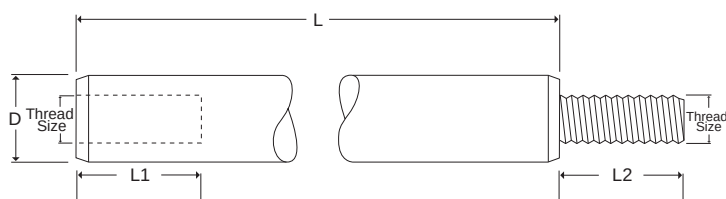
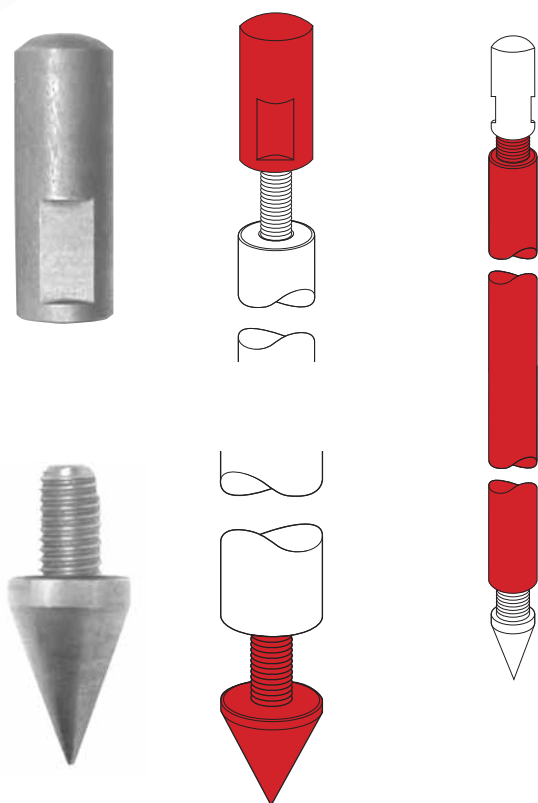
Galvanised Steel Earth Rod Set

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.



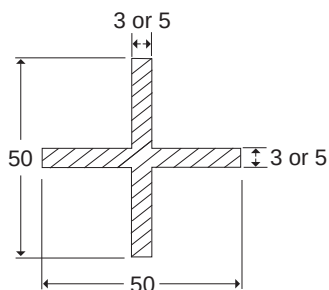
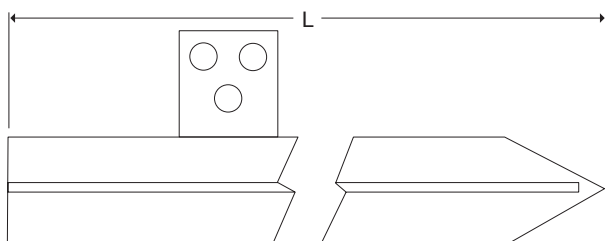
Cross Profile Galvanised Steel Earth Rods

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.



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.

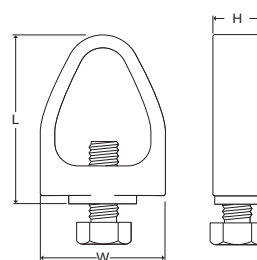
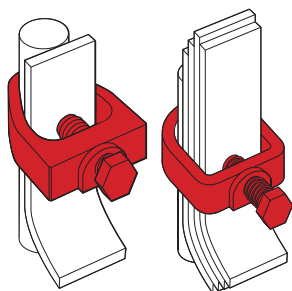
The aluminium version is mainly used for connecting aluminium tape to a puddle flange rod as part of a lightning protection system.

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.



ERR 1035



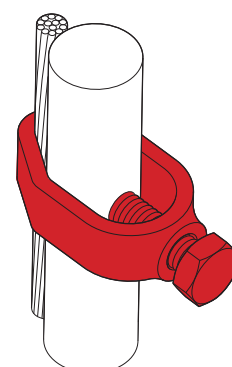
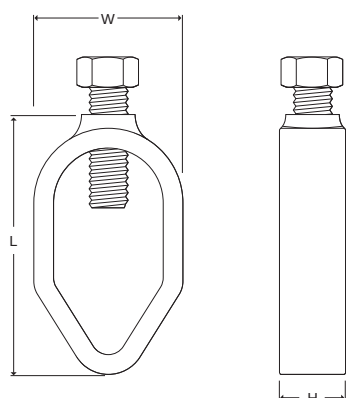
ERR 1635



ERR 1670



ERR 2095



‘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.

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

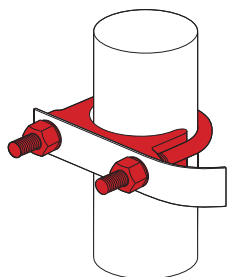
Material: Gunmetal plate with M10 threaded Copper ‘U’ Bolt.

Double Plate Type for Vertical Stranded Cables

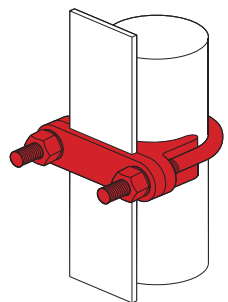
Used to connect stranded cables in a vertical and horizontal position on the rod.

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

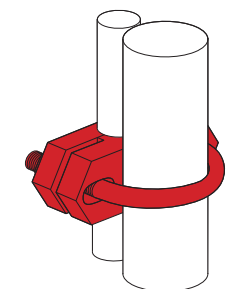
Material: Gunmetal plates with M10 threaded Copper ‘U’ Bolt.



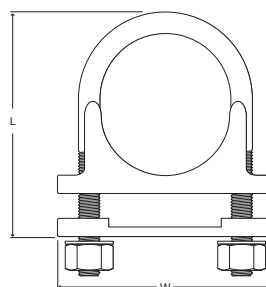
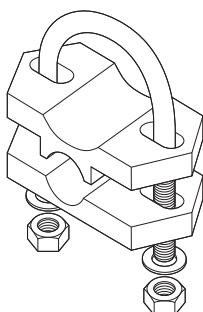
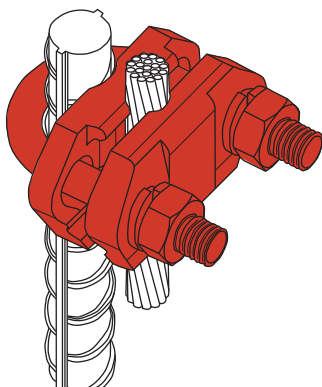
ERU 025



ERU 216



ERU 470

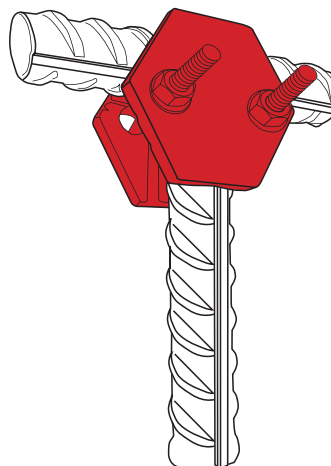
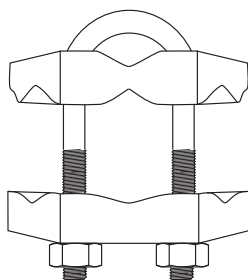
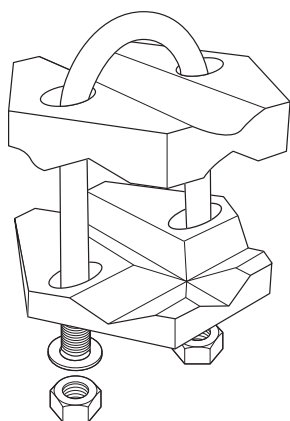


Re-bar Clamps

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.

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.



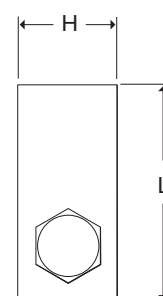
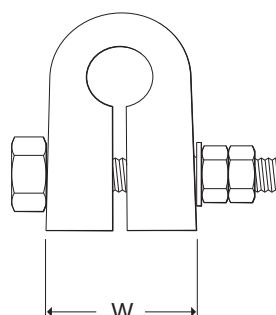
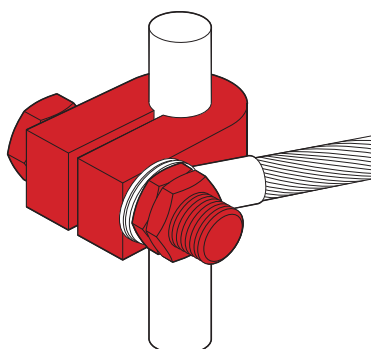
ERS 016



ERC 24



ERSS 20

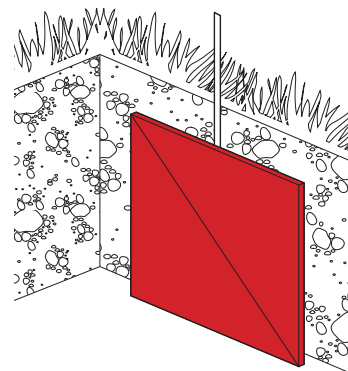
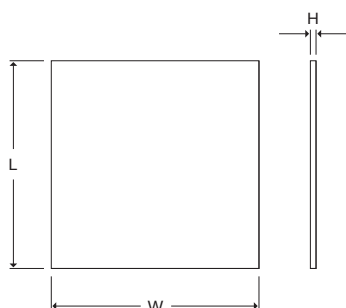


Solid Copper Earth Plates

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).



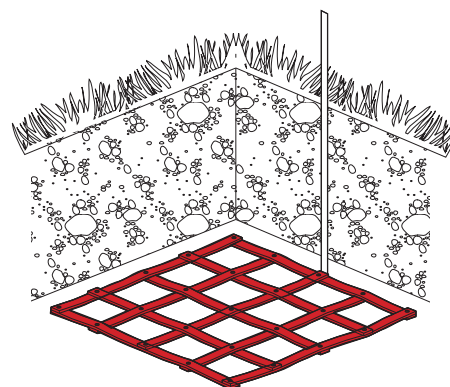
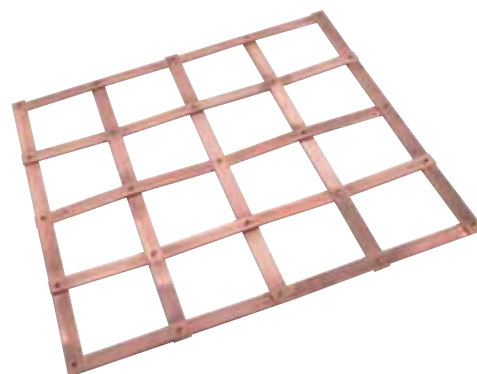
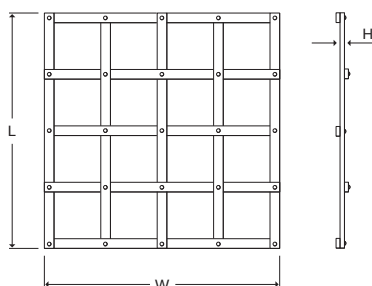
Solid Copper Lattice Mats

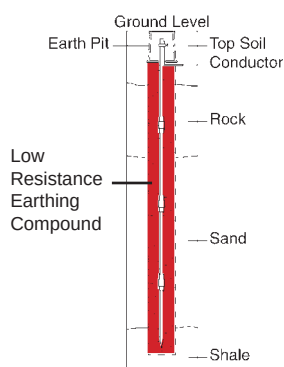
Solid copper lattice mats offer a more economical cost option to installing solid copper plates.

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).



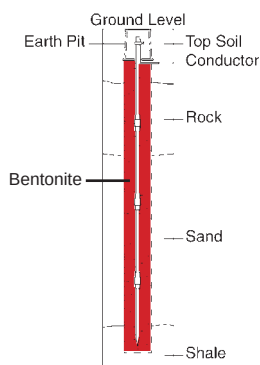


Low-Resistance Earthing Compound

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

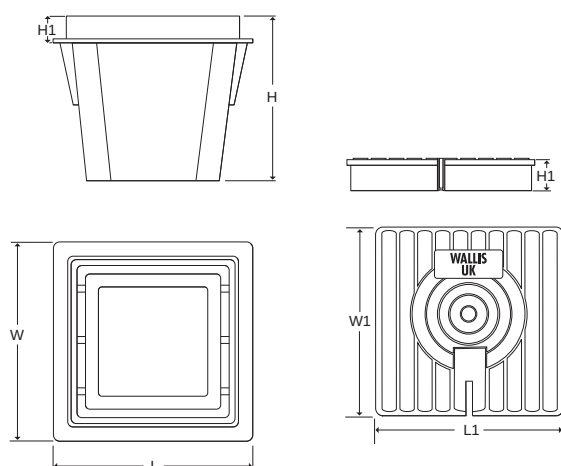
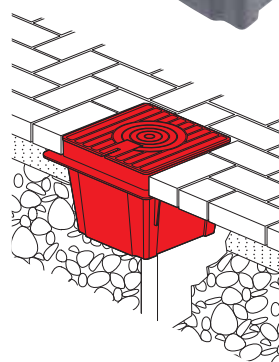
Material: Polypropylene base with GRP lid.



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.

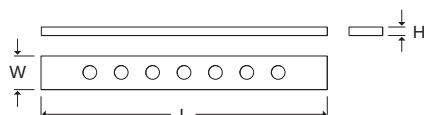
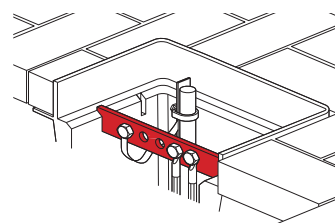
No. Holes	Hole Ø mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
5	11	203	25	6	0.24	1	EBC 35
7					0.22		EBC 37

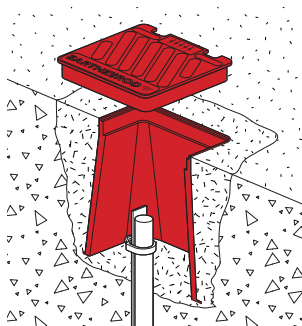
Material: Copper to BS EN 13601.



EBC 35

EBC 37





Light Duty Earth Inspection Housings

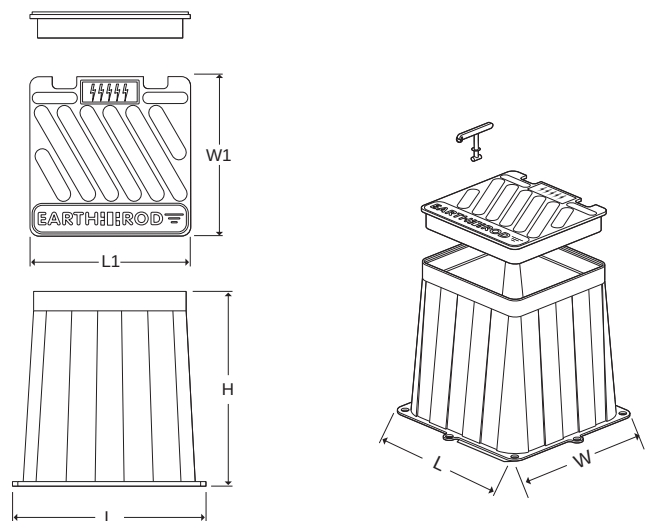
The Wallis light duty earth inspection housing has a maximum safe working load of 2,000 kilograms. It is UV stabilised against degradation by sunlight and non-brittle to prevent cold weather damage.

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.

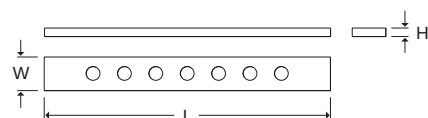
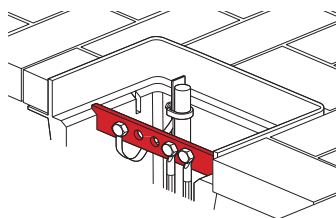
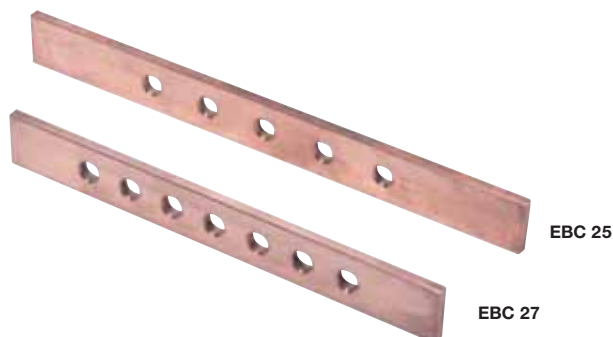


Inspection Housing Earth Bars (for Light Duty Earth Inspection Housings)

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.

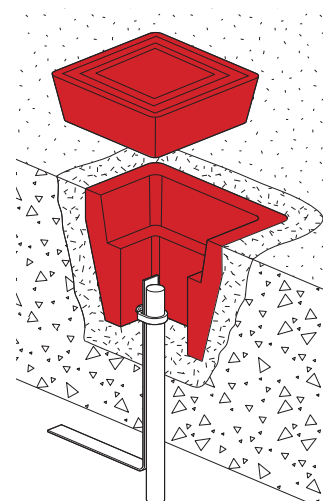
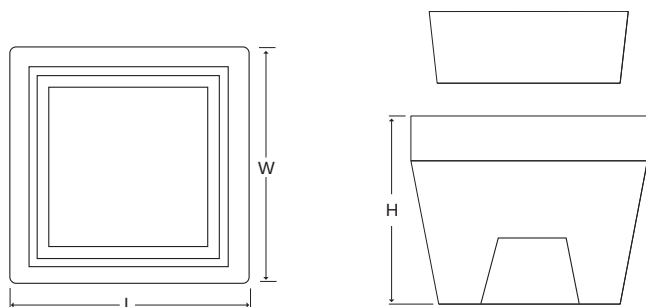


Concrete Earth Inspection Housing

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.

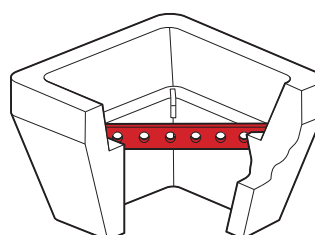
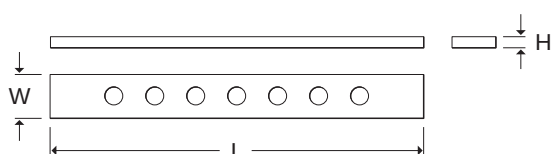


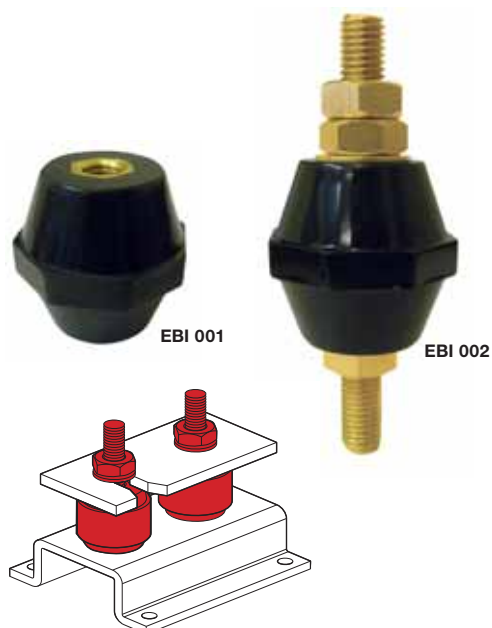
Inspection Housing Earth Bars (for Concrete Earth Inspection Housings)

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.



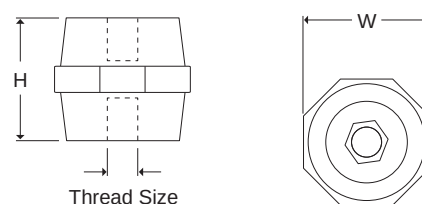


Insulators

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.



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

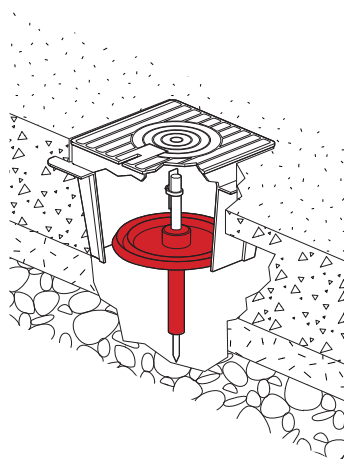
Earth Rod Type	Flange Ø mm	Pipe Length mm	Unit Weight kg	Pack Quantity	Part Number
15mm Ø	366	300	2.00	1	PES 001-15
16mm Ø					PES 001-16
20mm Ø					PES 001-20
5/8" UNC Threaded					PES 001-58
3/4" UNC Threaded					PES 001-34

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.



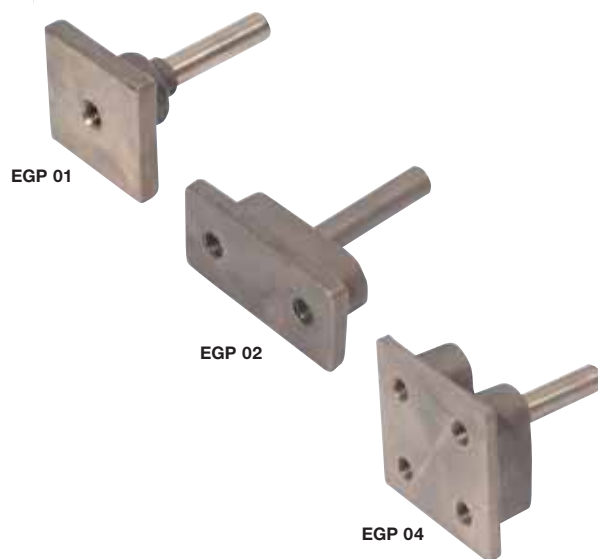
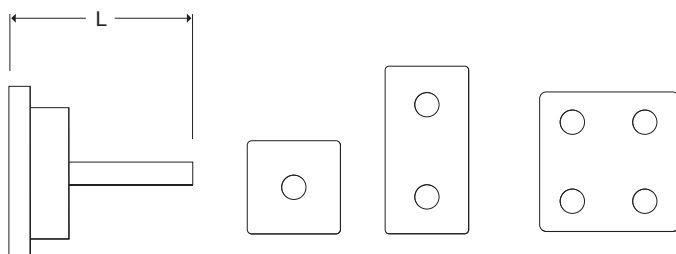
Earth Bonding Points

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 (70mm ²)	75	0.16	10	EPG 01
2		70 x 35			0.29		EPG 02
4		65 x 65			0.54		EPG 04

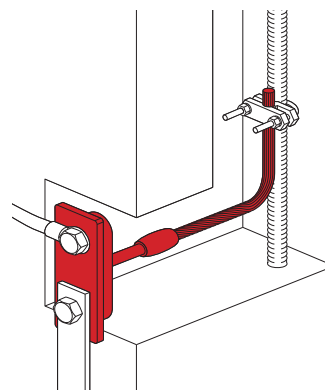
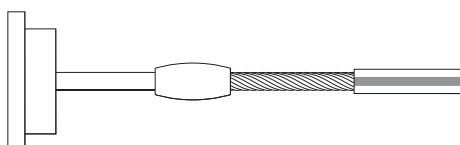
Material: Gunmetal.



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 70mm ² PVC insulated cable	0.64	1	EGP 01 500
2	EGP 02 with pre-welded 500mm long tail of 70mm ² PVC insulated cable	0.77	1	EGP 02 500
	EGP 02 with pre-welded 1000mm long tail of 70mm ² PVC insulated cable	1.14		EGP 02 1000
	EGP 02 with pre-welded 1500mm long tail of 70mm ² PVC insulated cable	1.50		EGP 02 1500
4	EGP 04 with pre-welded 500mm long tail of 70mm ² PVC insulated cable	1.02	1	EGP 04 500
	EGP 04 with pre-welded 1000mm long tail of 70mm ² PVC insulated cable	1.39		EGP 04 1000
	EGP 04 with pre-welded 1500mm long tail of 70mm ² 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.

Earth Bars

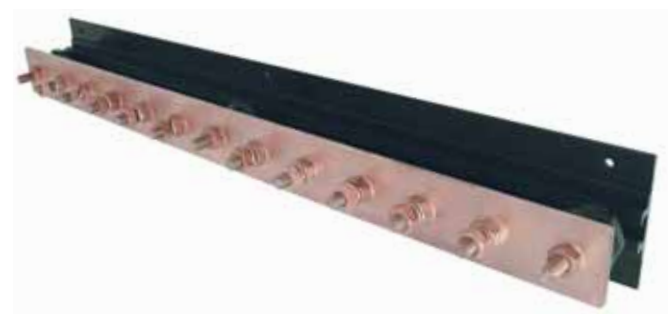
No. Terminations	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	400	90	60	2.00	1	EBC 006
8	500			2.30		EBC 008
10	650			3.20		EBC 010
12	750			4.00		EBC 012
14	850			4.90		EBC 014
16	950			5.80		EBC 016
18	1100			6.70		EBC 018
20	1250			7.60		EBC 020
22	1300			8.50		EBC 022
24	1400			9.40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



EBC 006



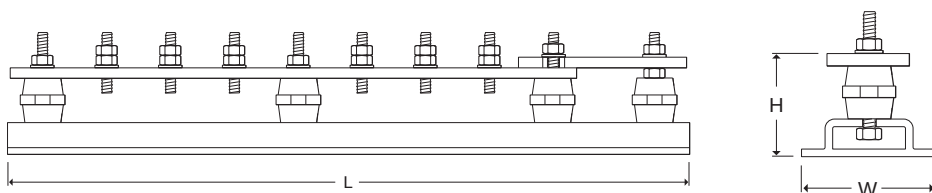
EBC 010



EBC 106



EBC 108



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:

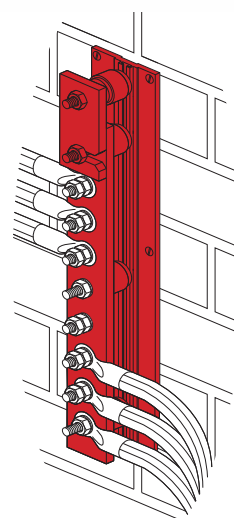
Bar: 50 x 6mm hard drawn copper bar to BS EN 13601.

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

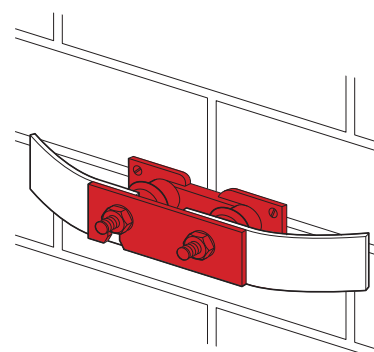
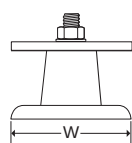
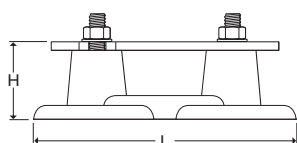
Material:

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

Base: Plastic.



EBC 100



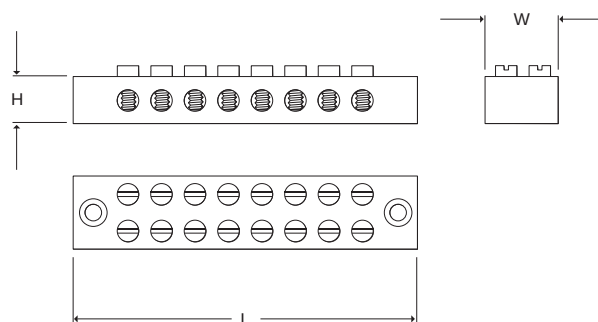
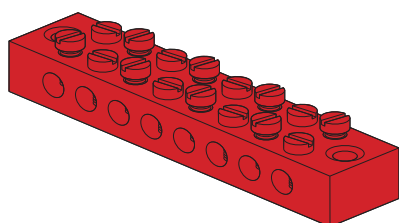


Earth Blocks

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.

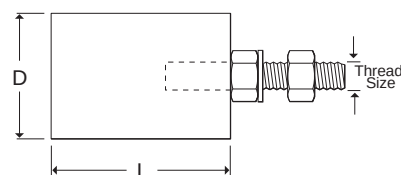
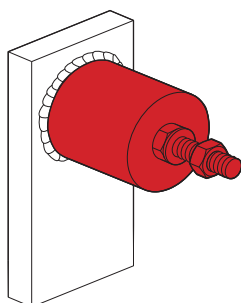


Earth Bosses

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.



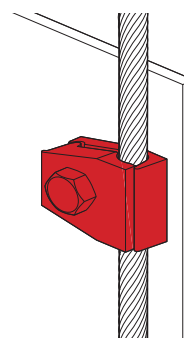
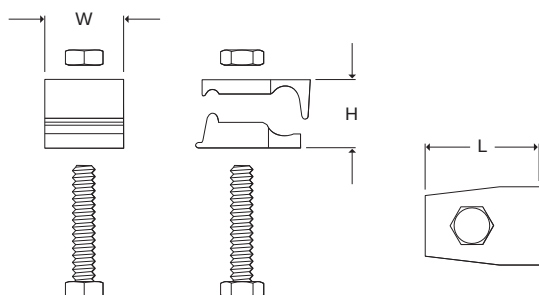
Tower Earth Clamps

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 mm ²	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.

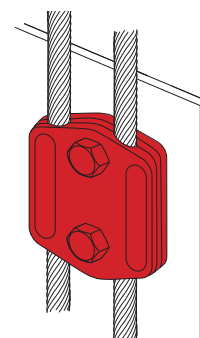
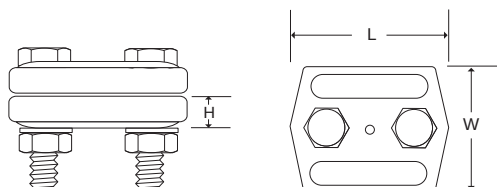


Parallel Groove Clamps

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 mm ²	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.



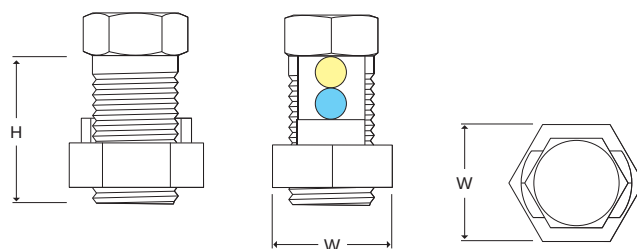
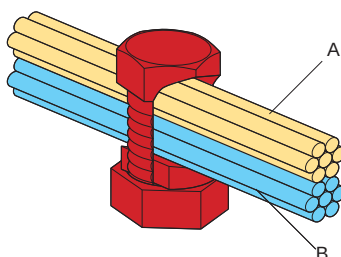
Split Bolt Connectors

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



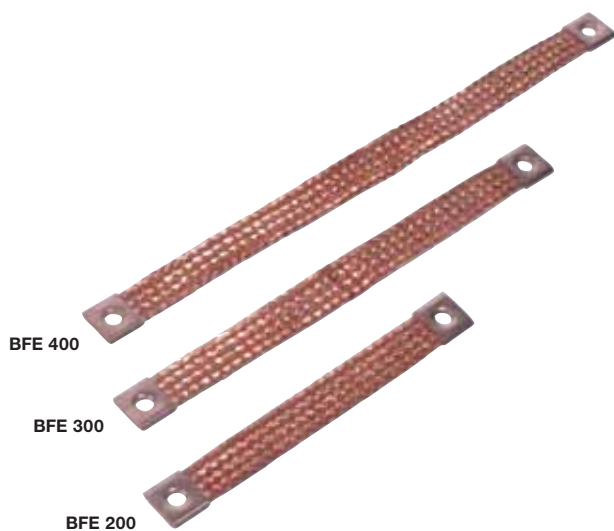
Main Conductor A mm²	Tap Conductor B mm²	H mm	W mm	Unit Weight kg	Pack Quantity	Part Number
10	1.5 - 10	20	4.1	0.02	200	SBC 010
16	2.5 - 16	23	5.3	0.03	150	SBC 016
25	2.5 - 25	28	6.8	0.04	100	SBC 025
35	2.5 - 35	29	7.9	0.05	80	SBC 035
50	2.5 - 50	35	9.5	0.08	50	SBC 050
70	2.5 - 70	39	10.7	0.12	35	SBC 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.



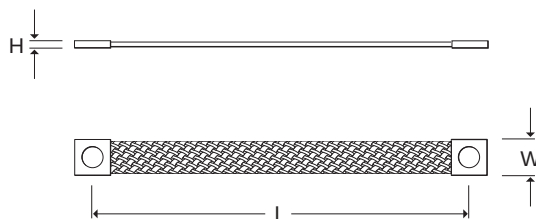
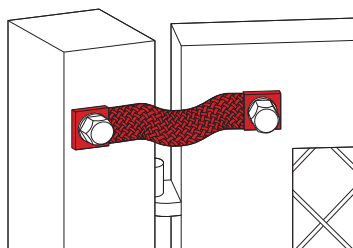
Flexible Copper Braid Bonds

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.

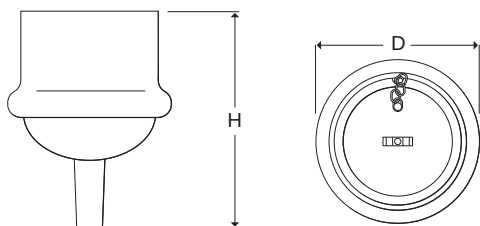


Static Earth Receptacle

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.

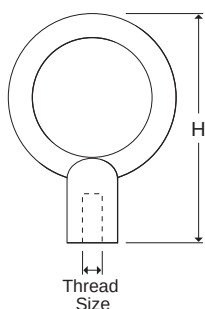


Eyebolts

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.

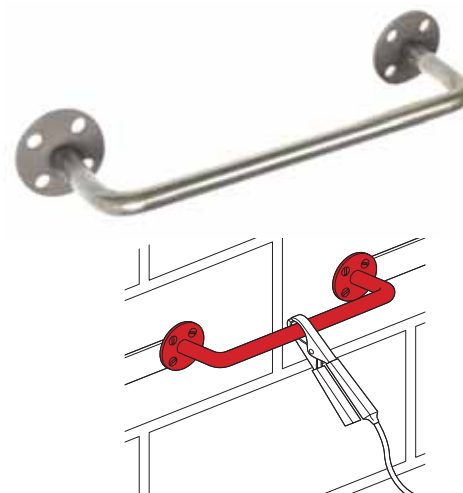


Static Earth Bar

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.



‘C’ Crimp Connectors

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



CCC 035



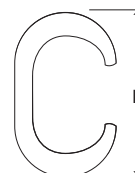
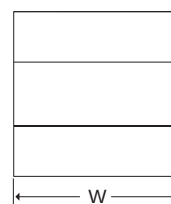
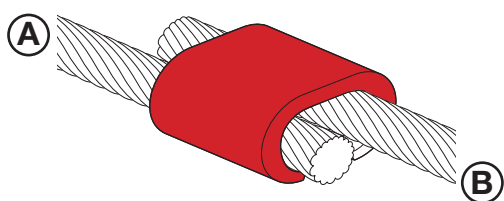
CCC 070



CCC 240

Main Conductor A mm ²	Tap Conductor B mm ²	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 500mm² and chamfered entry for cables 500mm² to 1000mm².

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



CLG 68



CLG 1010



CLG 258



CLG 506



CLG 9510

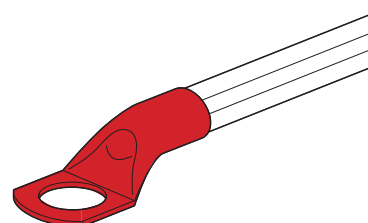


Table continues on page 40.

Compression Terminals (continued)

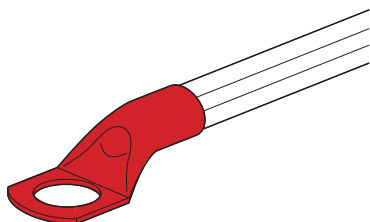
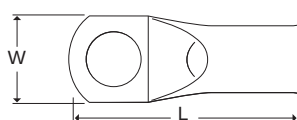
Conductor Size mm ²	Palm Hole Size mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
120	8	50	27	0.07	25	CLG 1208
	10	56	27			CLG 12010
	12	56	27			CLG 12012
	14	56	27			CLG 12014
	16	60	27			CLG 12016
	20	66	27			CLG 12020
150	8	66	30	0.09	25	CLG 1508
	10	68	30			CLG 15010
	12	68	30			CLG 15012
	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.

CLG 1208

CLG 15012

CLG 24014

CLG 30016


LIGHTNING PROTECTION

Introduction 42 – 43

Flat Tape System 44 – 61

Solid Circular System 62 – 71

Cable & Wire System 72 – 78

Miscellaneous Products 79 – 83

Free-Standing Air Terminals 84 – 86

Structural Lightning Protection

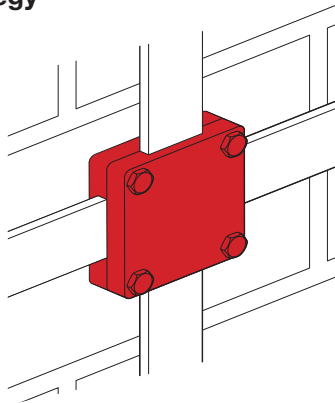
Introduction

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 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 electrode's 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 building's 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



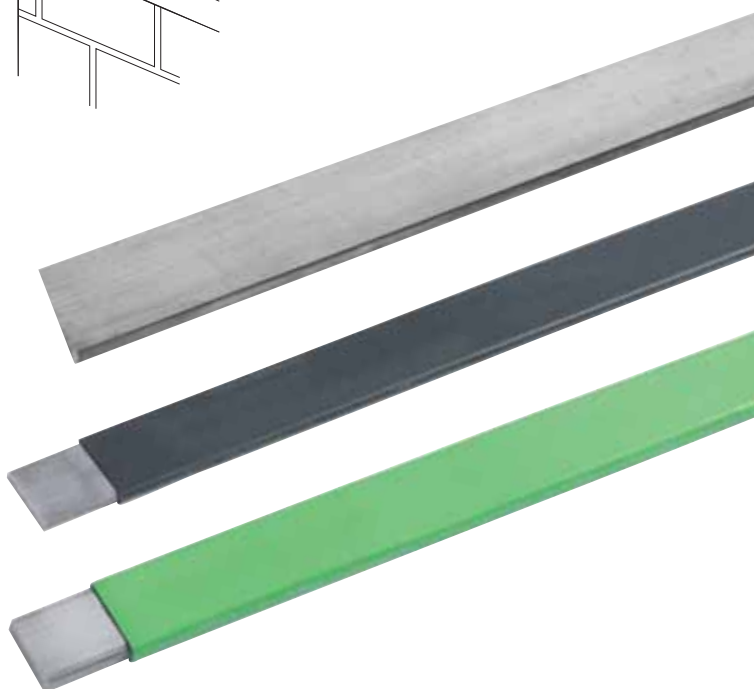
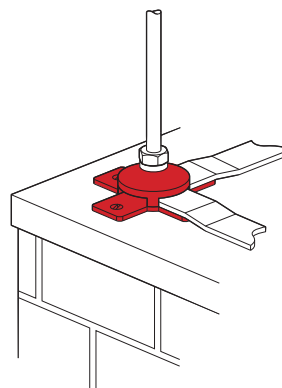
clamps are tight and well protected from corrosion, which can occur if dissimilar metals are joined. Ideally there should be as few joints as possible in an LPS design.

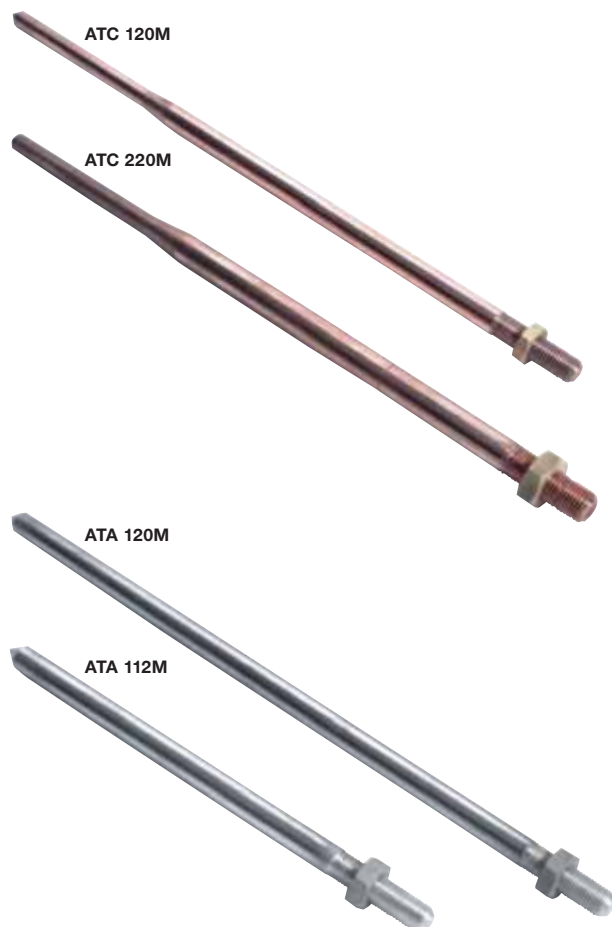
Maintenance & Life of an LPS

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

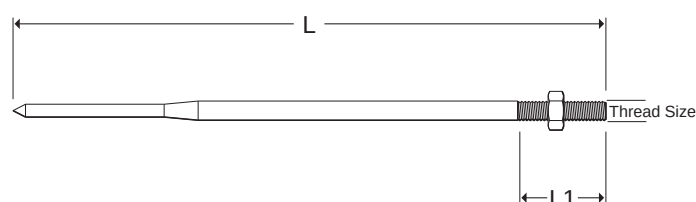
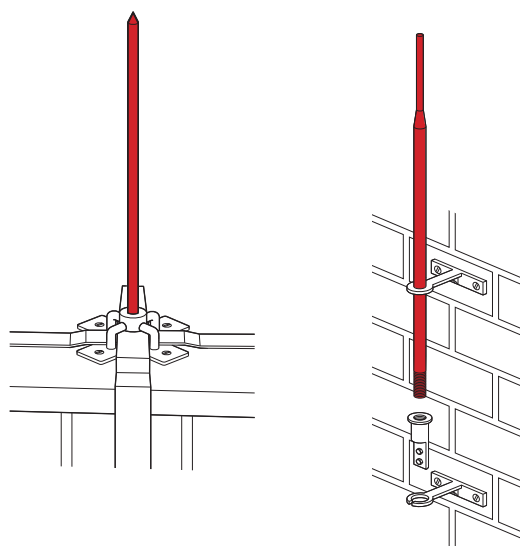
Thread Size	L mm	L1 mm	Unit Weight kg	Pack Quantity	Part Number
M16	300	41	0.53	5	ATC 112M
	500		0.85		ATC 120M
	1000		1.70		ATC 139M
	1500		2.59		ATC 160M
	2000		3.47		ATC 179M
M20	300	41	0.80	5	ATC 212M
	500		1.34		ATC 220M
	1000		2.68		ATC 239M
	1500		4.02		ATC 260M
	2000		5.36		ATC 279M

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.

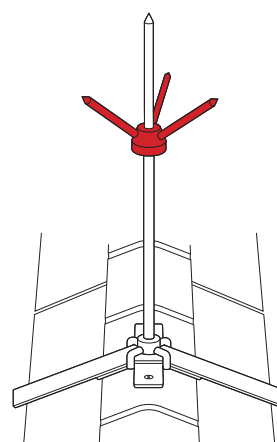
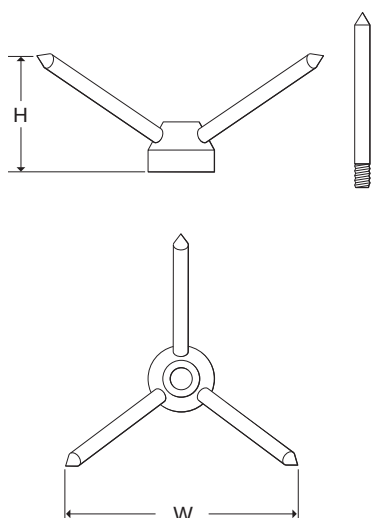


Multi-Point

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

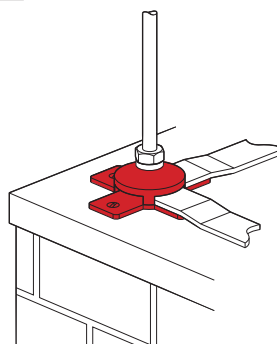
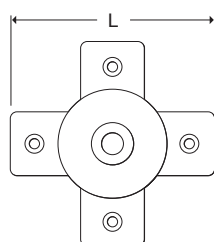
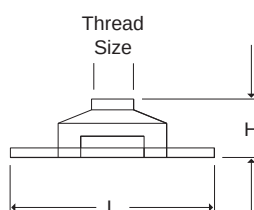
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	101	37	0.15	5	ASAL 16M

Material: Aluminium.

ASGL 16M



ASAL 16M

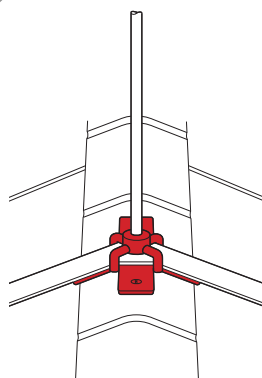




ASGR 16M



ASAR 16M



Air Rod Ridge Saddles

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

For use with Copper Air Rods

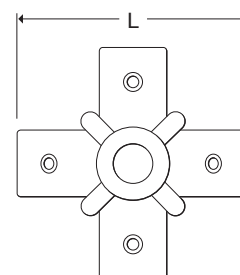
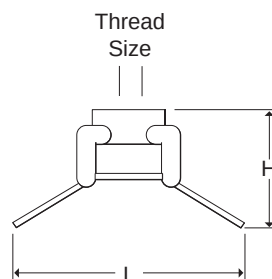
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	34	0.70	5	ASGR 16M

Material: Gunmetal.

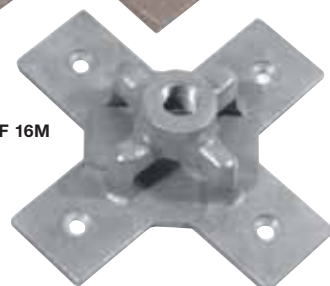
For use with Aluminium Air Rods

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

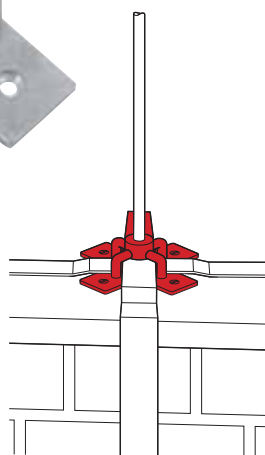
Material: Aluminium.



ASGF 16M



ASAF 16M



Flat Air Rod Saddles

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

For use with Copper Air Rods

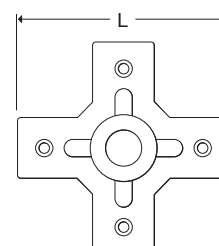
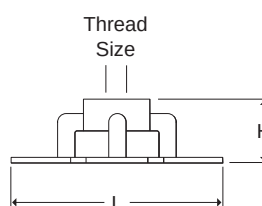
Thread Size	L mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M16	137	40	0.60	5	ASGF 16M

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

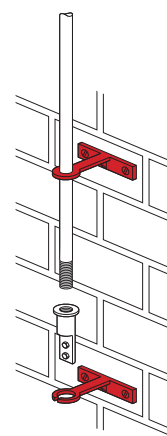
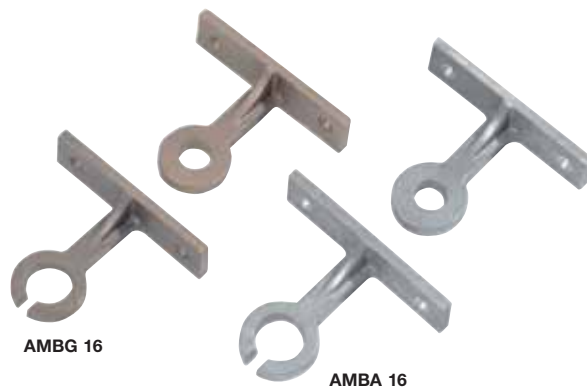
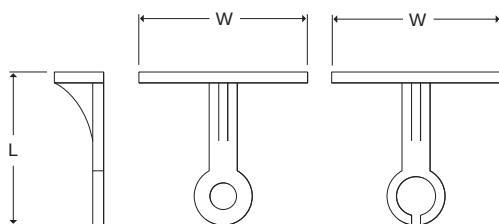
Rod Ø mm	L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
16	97	120	0.39	5	AMBG 16
20			0.43		AMBG 20

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

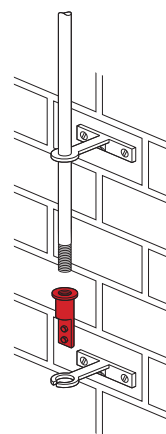
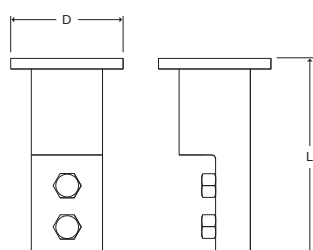
Thread Size	L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
M16	80	40	0.22	5	AOG 16M
M20					AOG 20M

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 1½" 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

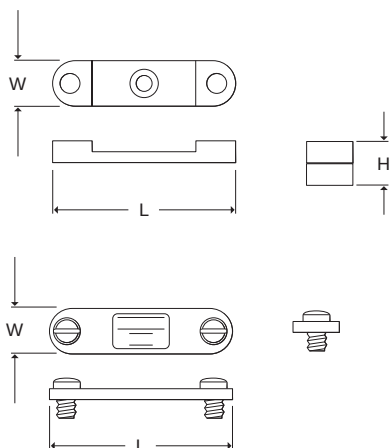
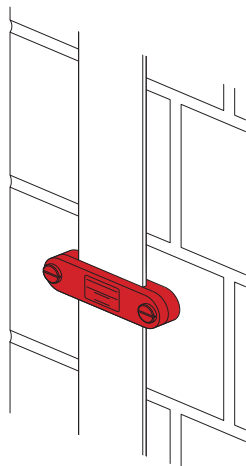
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
25 x 3	55	20	10	0.02	25	DCA 253
25 x 6	50		13	0.03		DCA 256
50 x 6	80		16	0.04		DCA 506

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



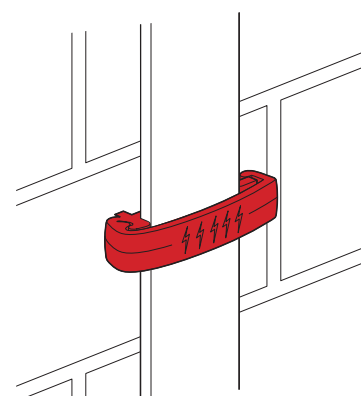
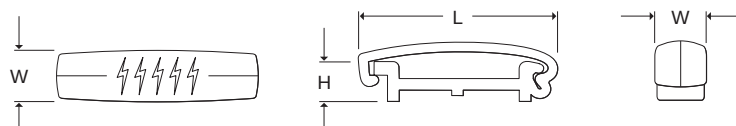
NP 253 GR



NP 253 B



NP 253 S



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 1 1/2" 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.



NPP 253 BL



NPP 253 W



NPP 253 G



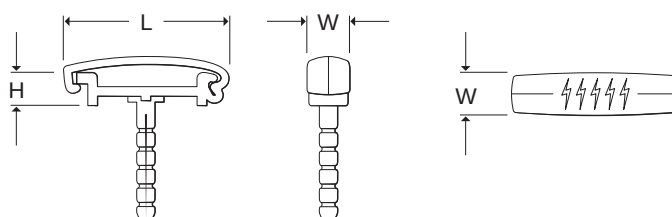
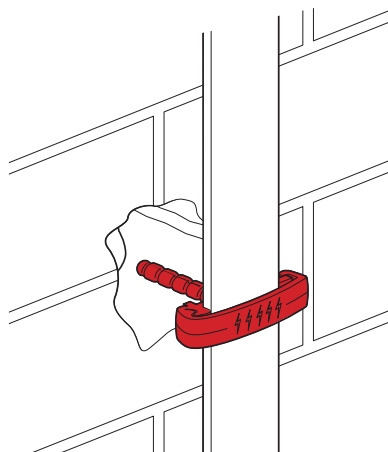
NPP 253 GR



NPP 253 B



NPP 253 S



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.

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.

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.

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.

MTB 253



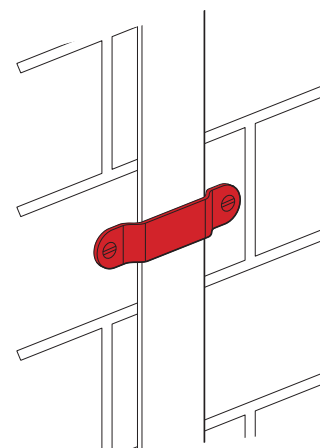
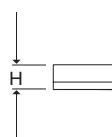
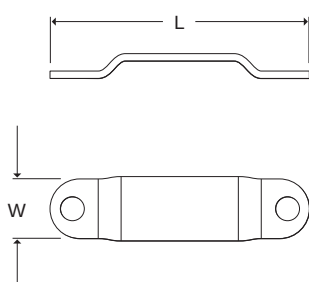
MPB 253



MTA 253



MAP 253





HSAL 253BL



HSAL 253G



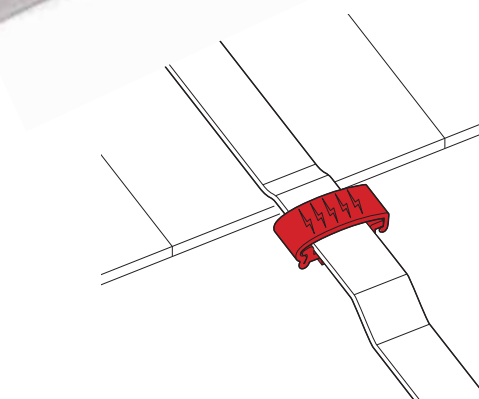
HSAL 253B



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

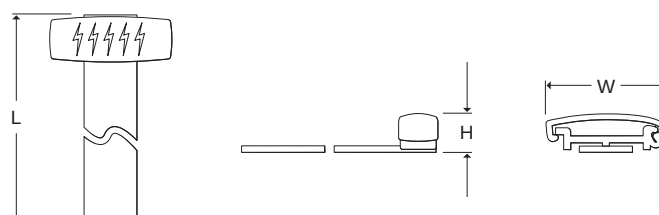
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	300	50	16	Brown	0.04	50	HSAL 253 BM
				Grey			HSAL 253 GM

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.

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

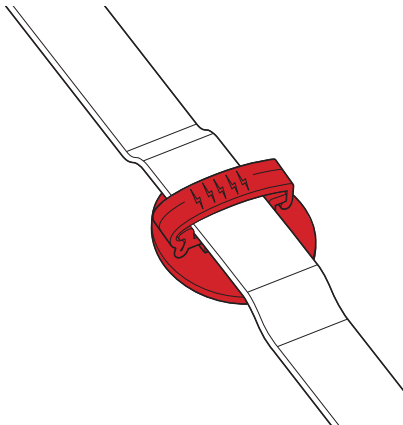
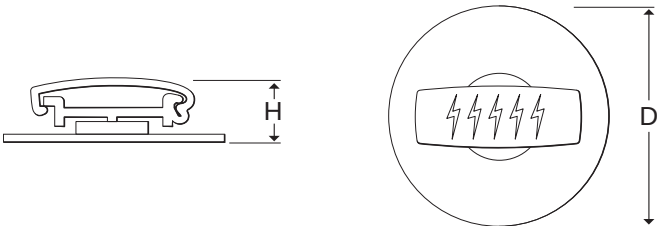
Material: PVC base with Polypropylene clip.



WDC 080



WDC 120



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

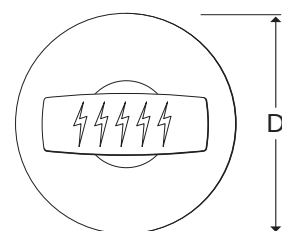
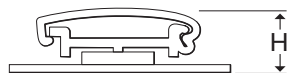
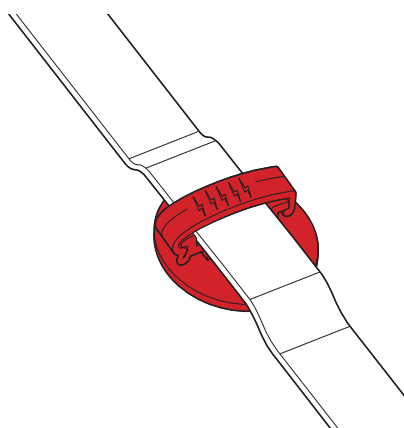
Conductor Size mm	D mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
25 x 3	65	23	Brown	0.03	50	ADC 060
			Grey			ADC 080

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.



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.

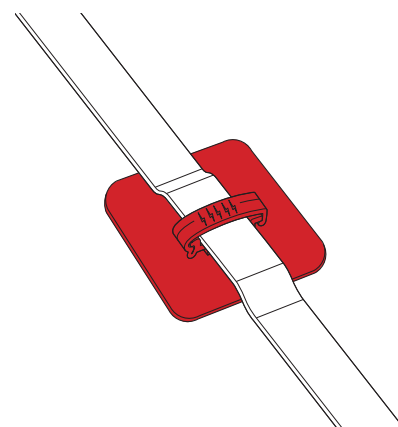
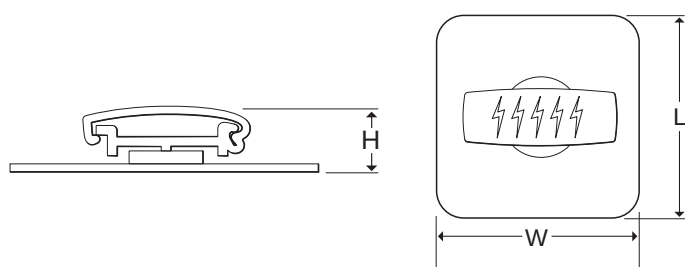
For use with PVC Covered Copper & Aluminium Tapes

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

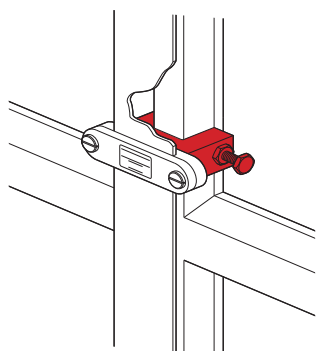
Material: Bitumen Felt base with Polypropylene clip.



BDC 060




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

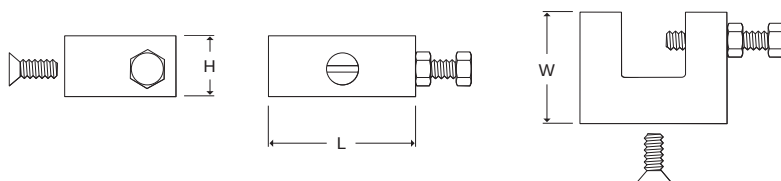
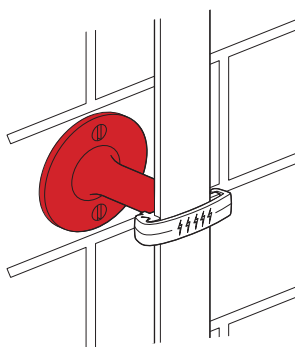
L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
35	22	20	0.12	10	HGG 253

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

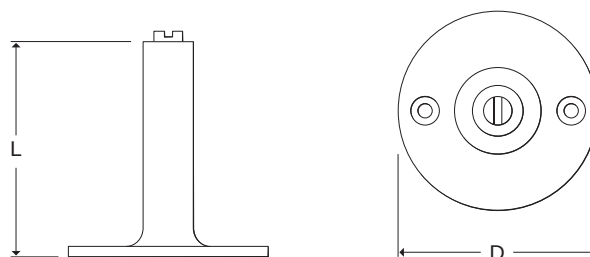
L mm	D mm	Unit Weight kg	Pack Quantity	Part Number
74	63	0.33	5	HBG 001

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



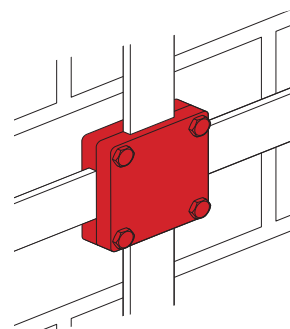
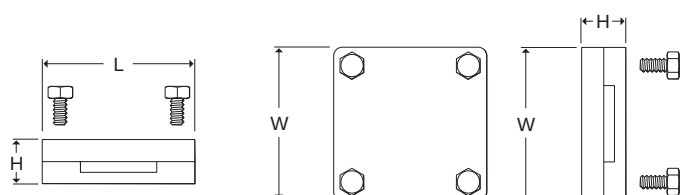
JG 506



JPB 253L



JA 253



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.



JGO 253 W



JGO 506 W



JPBO 253 L



JAO 253

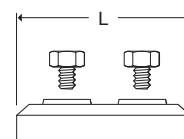
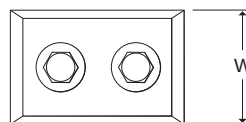
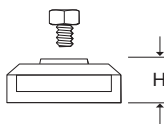
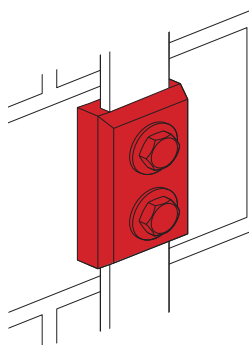


Plate Type Test Clamps

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.

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

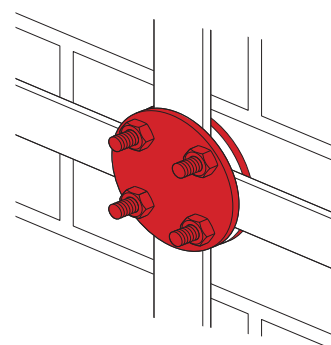
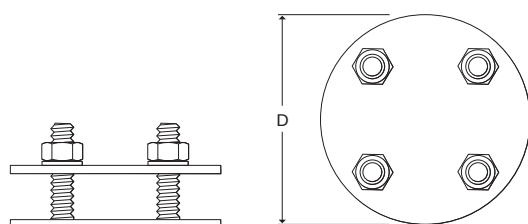
Material: Aluminium.



JPA 253



JPG 253



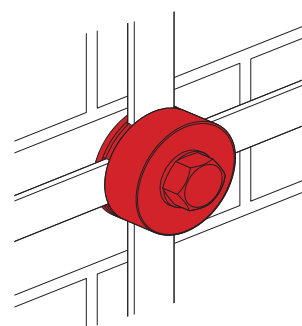
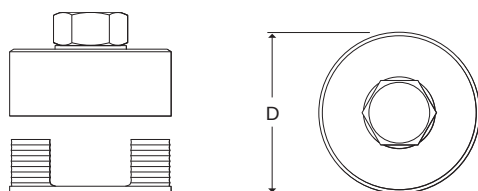
Screw Down Test Clamp

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

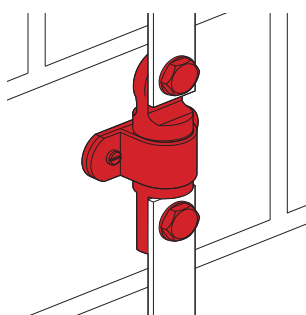
Material: Gunmetal.





BSS 253

BIM 253

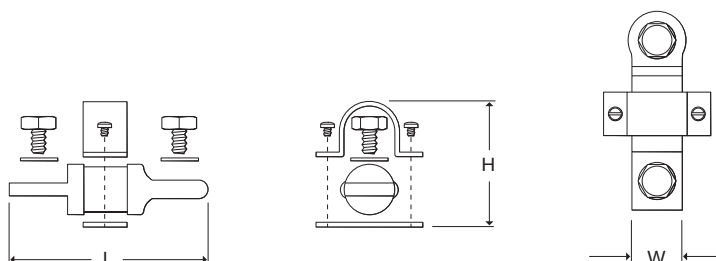


Bimetallic Connectors

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.

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

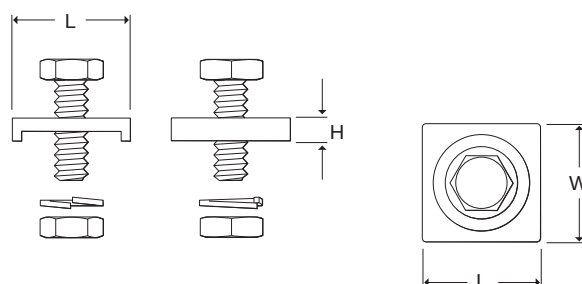
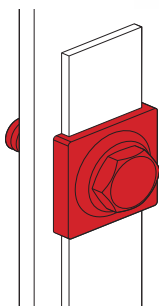
Material: Aluminium with M10 x 35mm Stainless Steel Set Screw.



BBG 253 SS



BBA 253



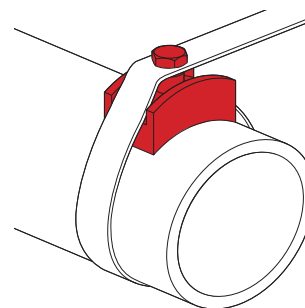
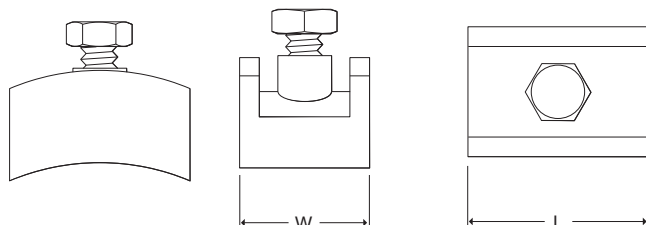
Watermain Pipe Bond

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.

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.

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

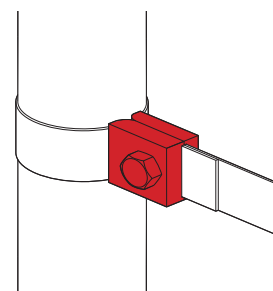
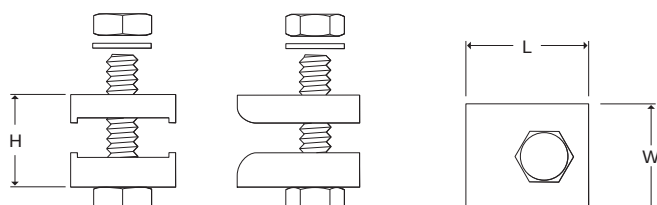
Material: Aluminium with M10 x 40mm Stainless Steel Set Screw.

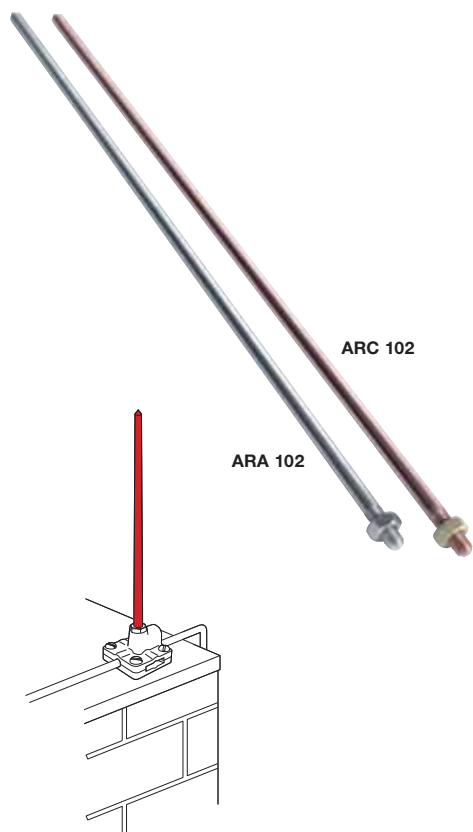


BRG 253



BRA 253





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

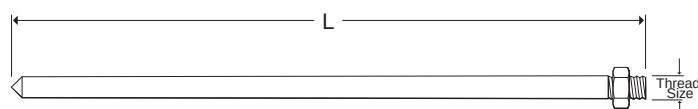
Thread Size	L mm	Unit Weight kg	Pack Quantity	Part Number
M10	500	0.35	5	ARC 102
	1000	0.70		ARC 105

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

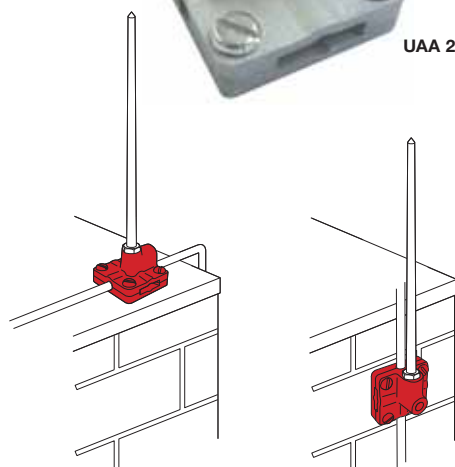
Material: Aluminium.



UAG 253



UAA 253



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

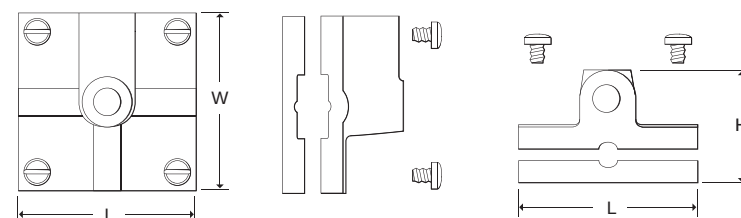
Thread Size	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
M10	54	54	38	0.30	5	UAG 253

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.

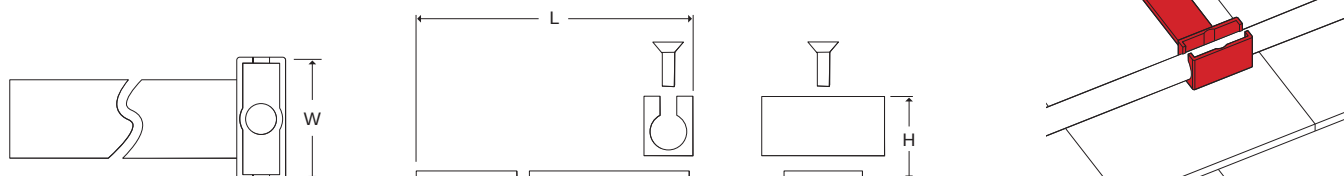
HA 08 B

HA 10 BL

HA 10 G

HA 10 S

HA 10 W

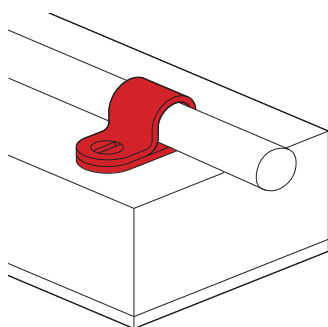




PCC 001



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

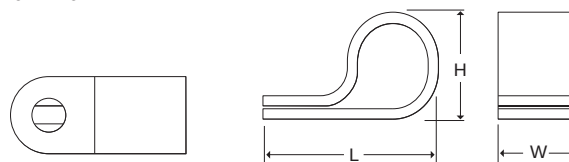
Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	31	12	12	0.01	50	PCC 001
8mm PVC	41	20	15			PCC 002

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

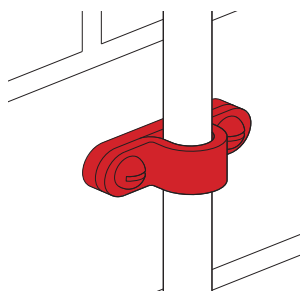
Material: Aluminium.



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

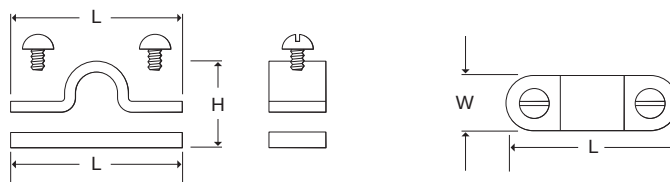
Conductor Size & Type	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8mm Bare	48	17	20	0.06	25	DCG 810
8mm PVC						DCG 815

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

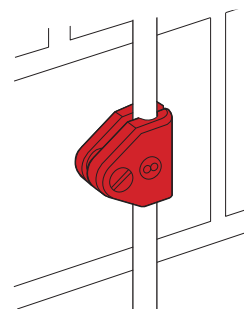
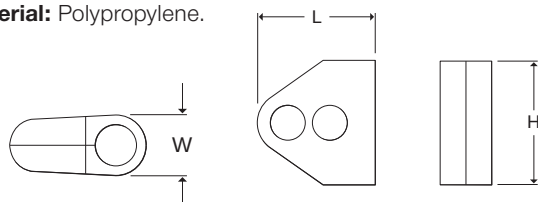
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	34	23	33	Brown	0.01	100	CM 08 B
				Grey			CM 08 G

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

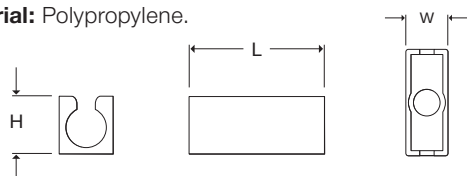
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	29	18	14	Brown	0.01	100	RM 08 B
				Grey			RM 08 G

Material: Polypropylene.

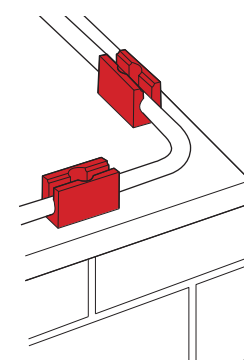
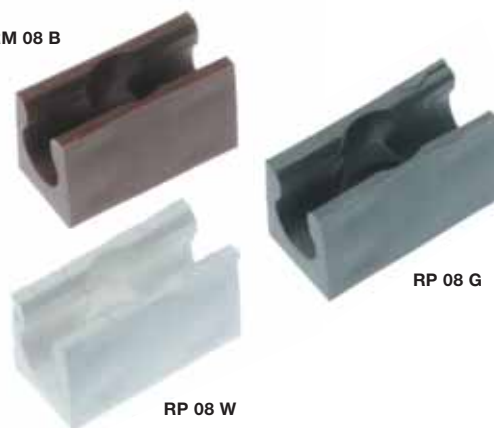
For use with PVC Covered Solid Circular Conductors

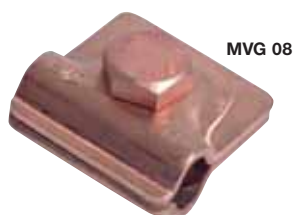
Conductor Size mm	L mm	W mm	H mm	Clip Colour	Unit Weight kg	Pack Quantity	Part Number
8	29	18	14	Brown	0.01	100	RP 08 B
				Black			RP 08 BL
				Grey			RP 08 G
				Stone			RP 08 S
				White			RP 08 W

Material: Polypropylene.



RM 08 B





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

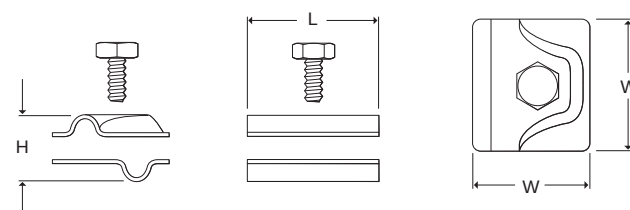
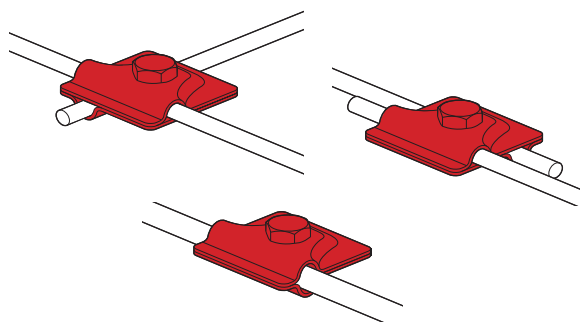
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	40	40	18	0.05	10	MVG 08

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

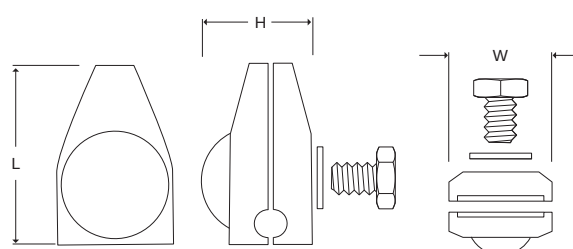
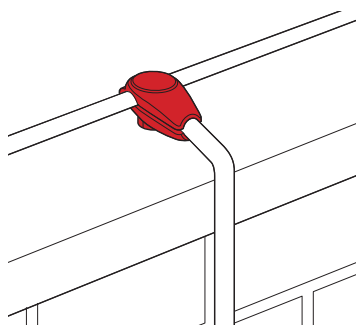
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	45	45	19	0.11	10	TCG 08

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

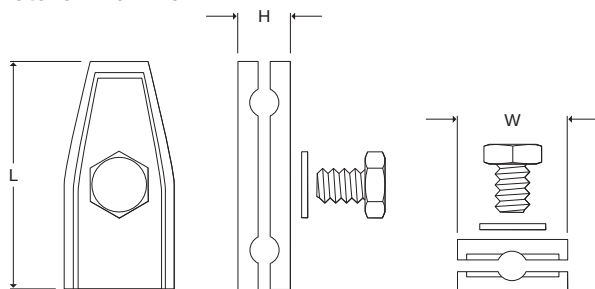
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	70	34	15	0.25	25	JYG 08

Material: Gunmetal.

For use with Bare Aluminium Conductors

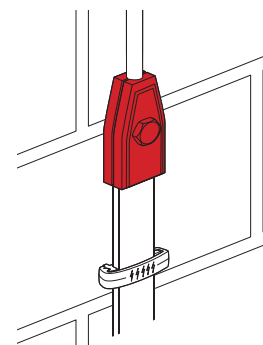
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	70	34	15	0.09	25	JYA 08

Material: Aluminium.



JYA 08

JYG 08



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

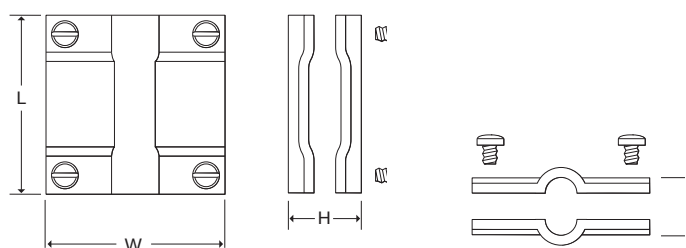
Conductor Sizes mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	52	52	14	0.28	25	JOM 253

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

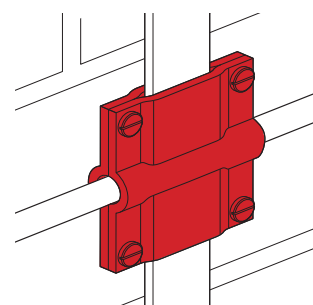
Material: Aluminium.



JOM 253



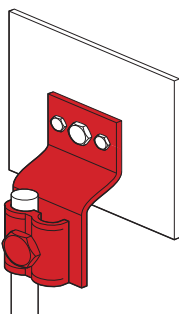
JOA 253





MBG 08

MBA 08



Metalwork Bonding Clamps

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

For use with Bare Solid Circular Copper Conductor

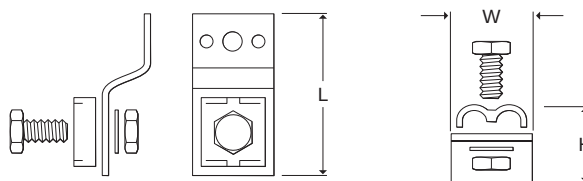
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	82	40	25	0.14	10	MBG 08

Material: Copper.

For use with Bare Solid Circular Aluminium Conductor

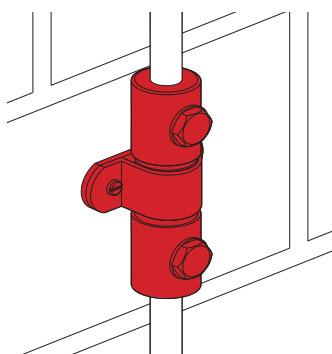
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	82	40	25	0.09	10	MBA 08

Material: Aluminium.



BIM 25308

BIM 08



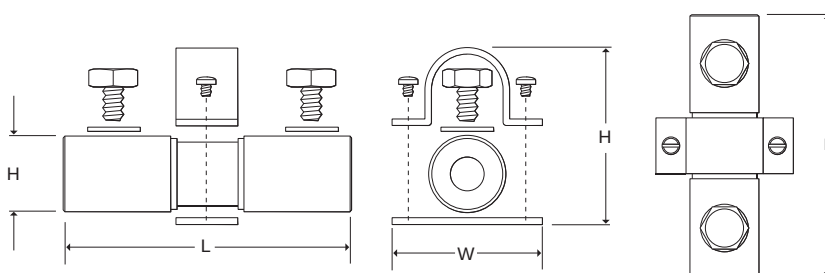
Bimetallic Connectors

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.

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.

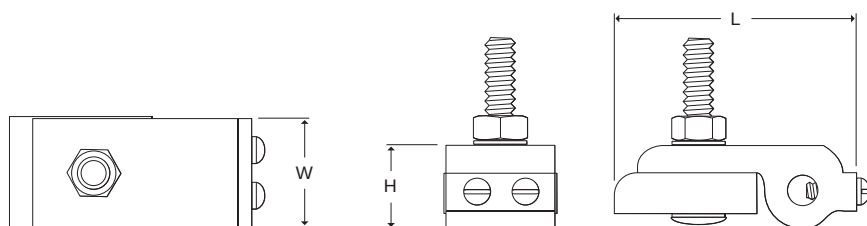
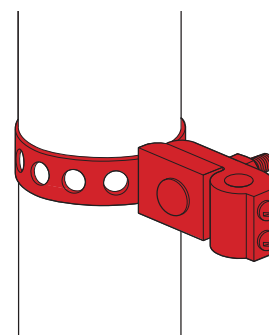
For use with Bare Solid Circular Aluminium Conductor

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.



BRG 08



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

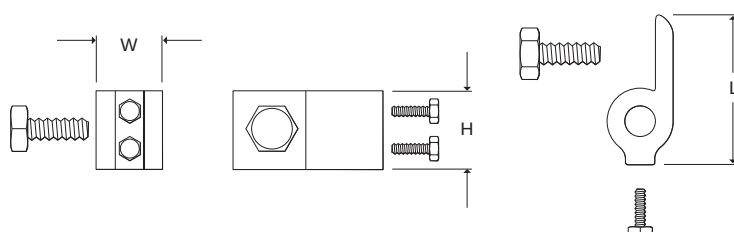
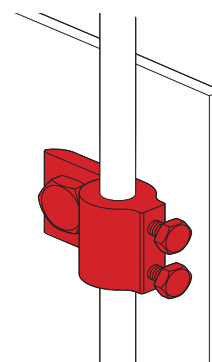
Conductor Size mm	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
8	52	33	18	0.09	10	BBA 08

Material: Aluminium.



BBA 08

BBG 08





BTC 008

Tower Earth Clamps

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

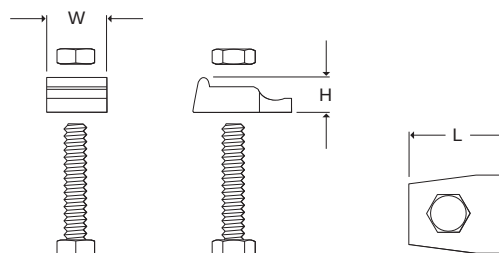
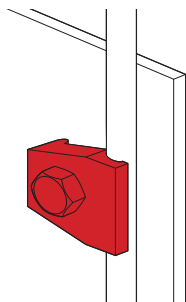
Conductor Size mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8	34	23	33	M10 x 50mm	0.09	10	BTC 008

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.



BBG 25308



BBA 25308

Multi-Purpose 'B' Bonds

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

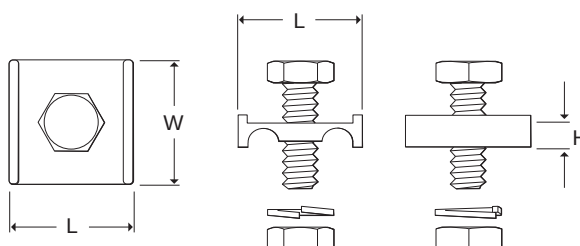
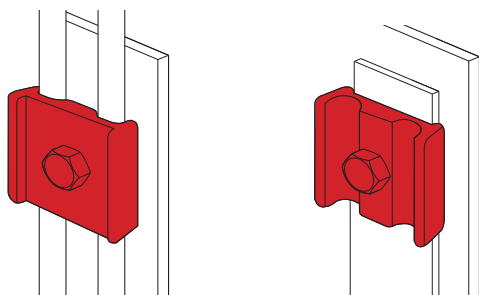
Conductor Sizes mm	L mm	W mm	H mm	Set Screw	Unit Weight kg	Pack Quantity	Part Number
8 & 25 x 3	34	34	13	M8 x 25mm	0.09	25	BBG 25308

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

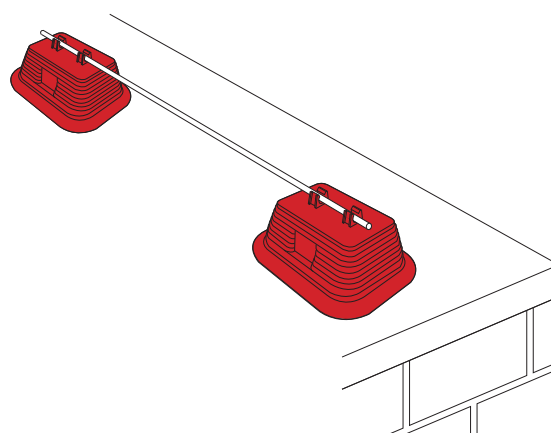
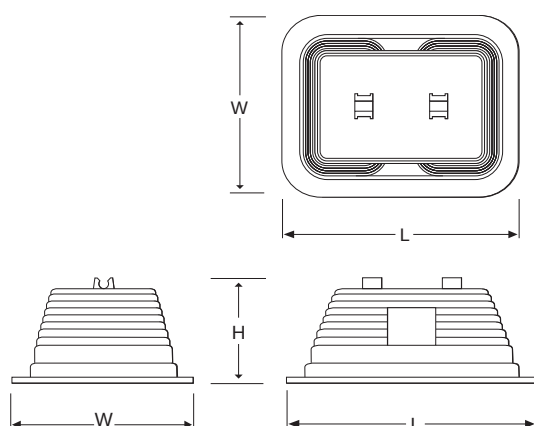
The Pyramid Holdfast is designed to support 8mm diameter bare solid circular conductors on flat roofs.

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

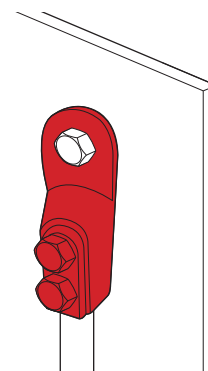
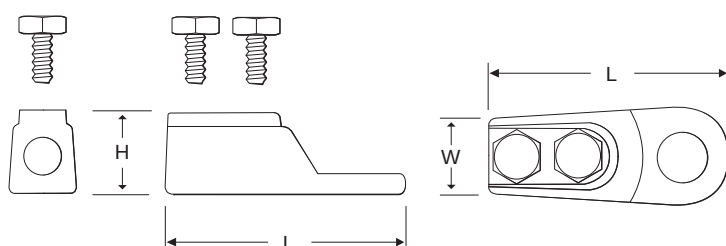
Conductor Size mm	Palm Hole Ø mm	L mm	W mm	H mm	Set Screws	Unit Weight kg	Pack Quantity	Part Number
8	12	61	23	25	M6 x 12mm	0.10	25	GCS 008

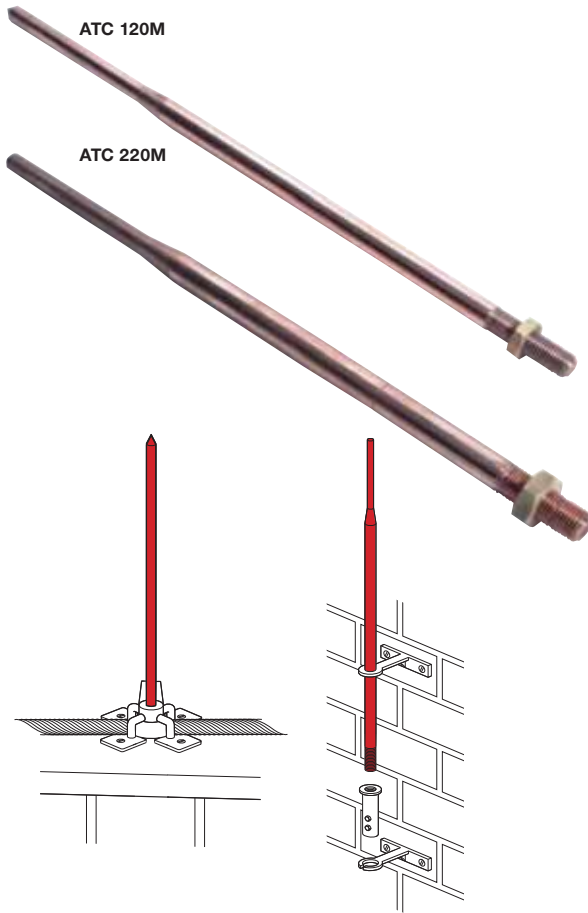
Material: Gunmetal.

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.



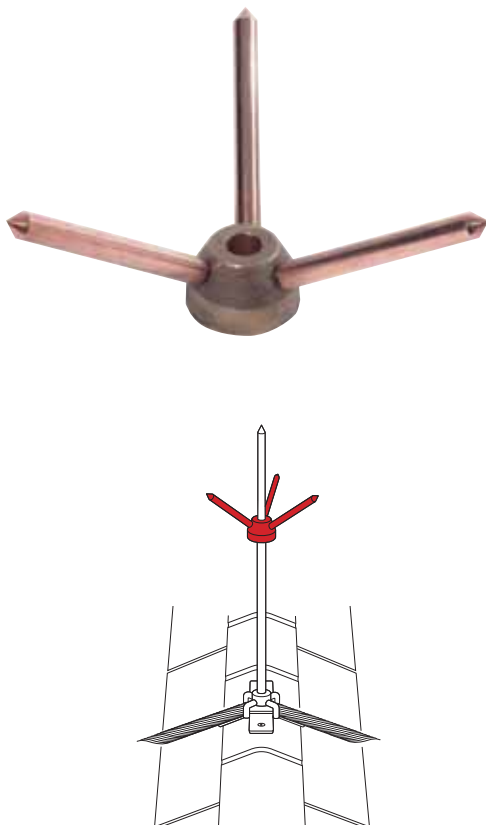
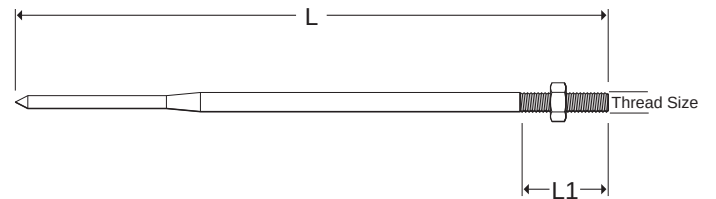


Taper Pointed Air Rods

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.

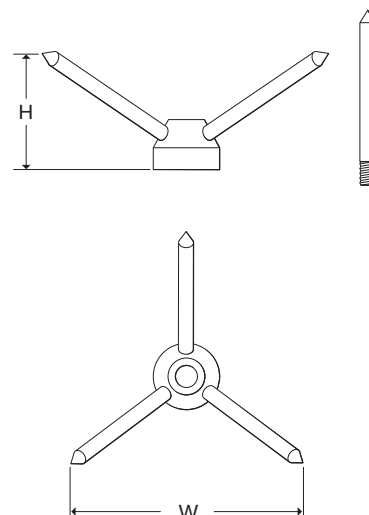


Multi-Point

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.

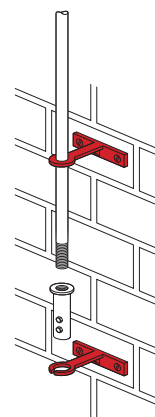
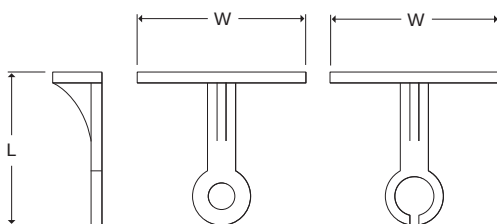
For use with Copper Air Rods

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

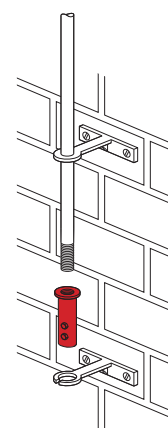
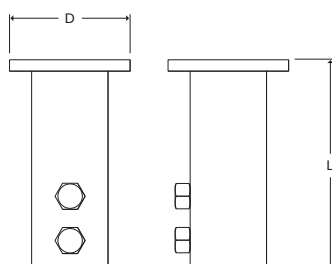
Enables the stranded cable to be connected to the air rod. Used in conjunction with the side mounting air rod brackets.

Conductor Size mm ²	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



Air Rod Cable Saddles

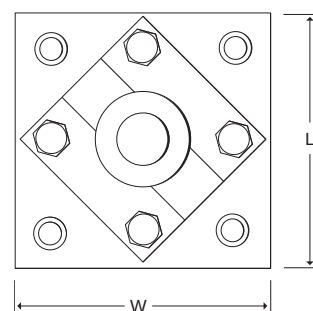
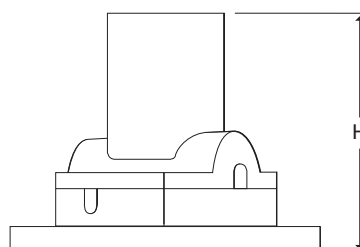
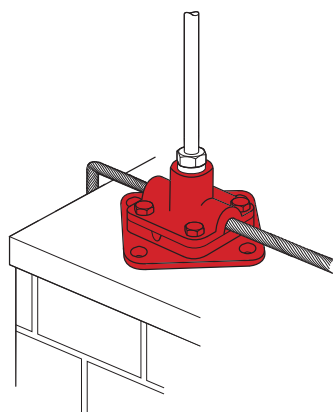
These saddles are used to support the copper taper pointed air rods on flat roof surfaces.

Conductor Size mm ²	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.



ASGF 050

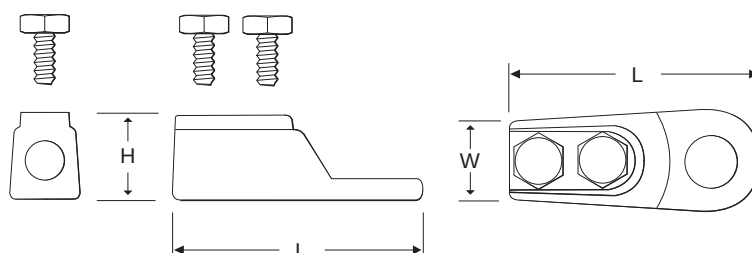
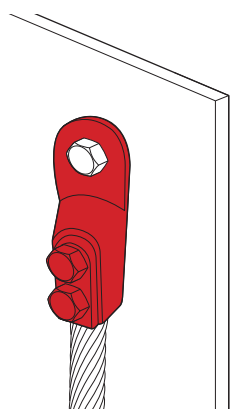


Cable Shoes

Used to bond stranded copper conductors to metal surfaces.

Conductor Size mm ²	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 mm ²	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.

For use with PVC Insulated Stranded Copper Conductors

Conductor Size mm ²	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.



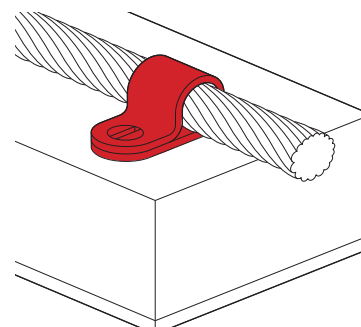
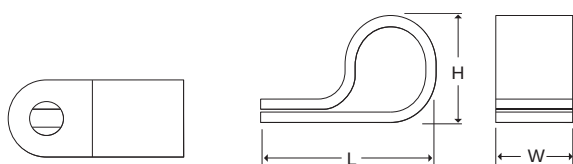
PCC 010



PCC 050



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 1 1/2" x No. 10 and No. 10 wall plug.

For use with Bare Stranded Copper Conductors

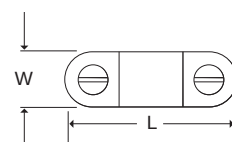
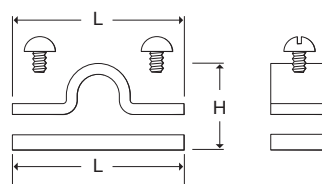
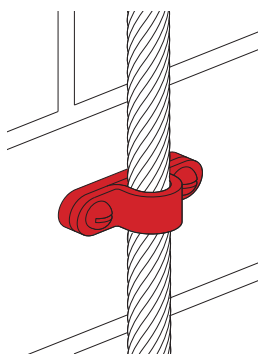
Conductor Size mm ²	L mm	W mm	H mm	Unit Weight kg	Pack Quantity	Part Number
6	35	15	12	0.03	50	DCG 006
10	35	15	12	0.03	50	DCG 010
16	35	15	15	0.04	50	DCG 016
25	35	15	15	0.04	50	DCG 025
35	46	17	17	0.05	50	DCG 035
50	46	17	17	0.05	50	DCG 050
70	46	17	19	0.06	25	DCG 070
95	46	17	21	0.06	25	DCG 095
120	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 mm ²	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

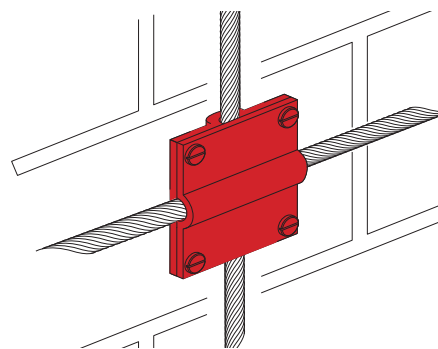
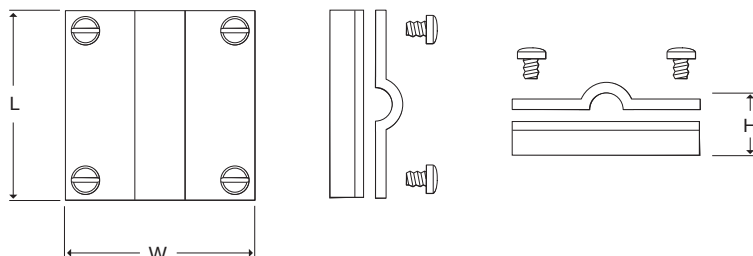
These Wallis four-way connectors are suitable for making cross, straight through or tee joints in stranded copper conductor.

Conductor Size mm ²	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.

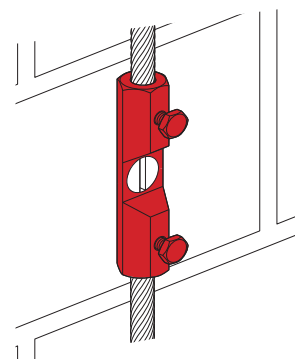
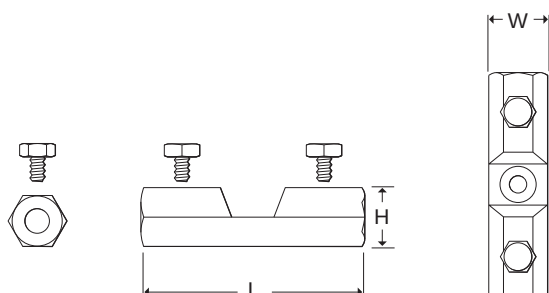
The base has a countersunk hole in the middle for securing the connector to the building surface. Fix using countersunk woodscrew 1 1/2" x No. 10 and No. 10 wall plug.

Conductor Size mm ²	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



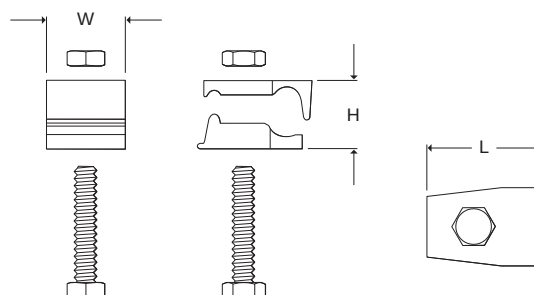
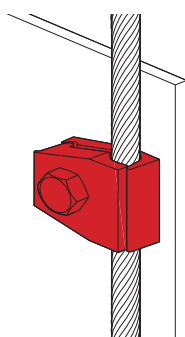


Tower Earth Clamps

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.

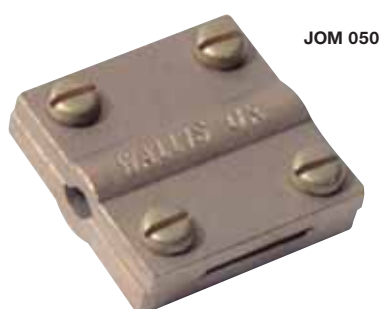
Conductor Range mm ²	L mm	W mm	H mm	Set Screw	Unit Weight	Pack Qty	Part Number
16 - 70	45	30	17	M10 x 50mm	0.12	10	BTC 070
70 - 120	48	35	22	M12 x 60mm	0.23		BTC 120

Material: Gunmetal.



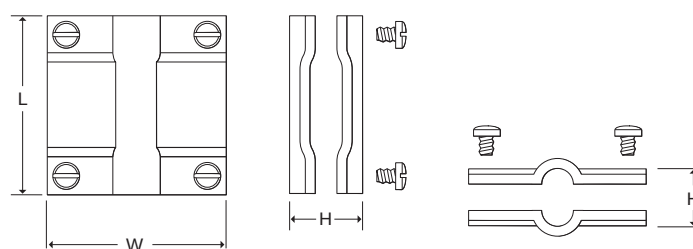
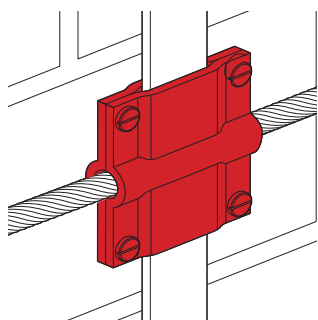
Cable to Tape Connectors

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 mm ²	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.

For use with Copper Conductor

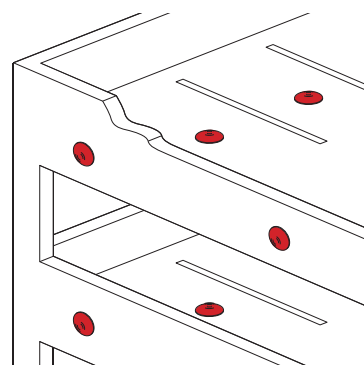
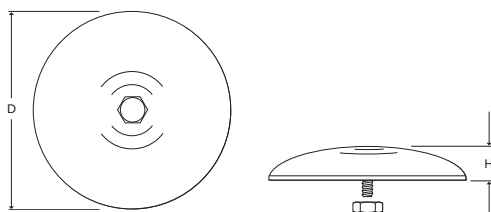
D mm	H mm	Unit Weight kg	Pack Quantity	Part Number
122	40	0.60	5	SC 01

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

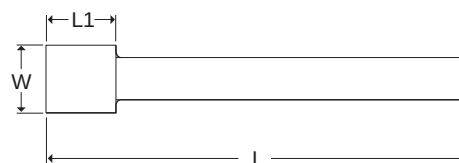
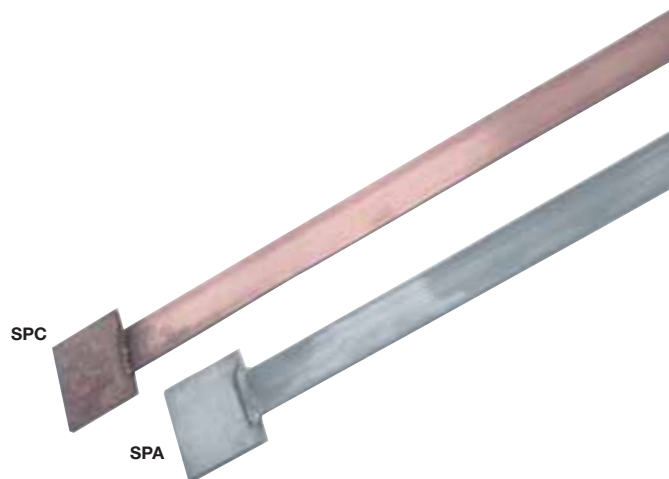
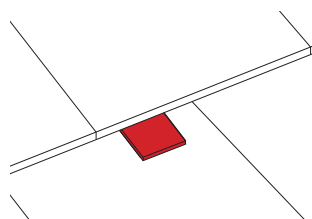
L mm	L1 mm	W mm	Unit Weight kg	Pack Quantity	Part Number
500	50	50	0.40	5	SPC

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

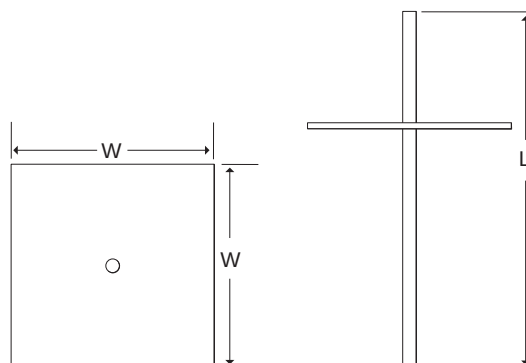
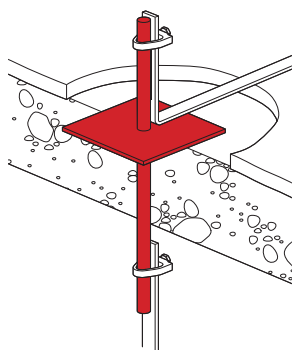
L mm	W mm	Unit Weight kg	Pack Quantity	Part Number
600	150 x 150	1.68	1	PFC 01

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

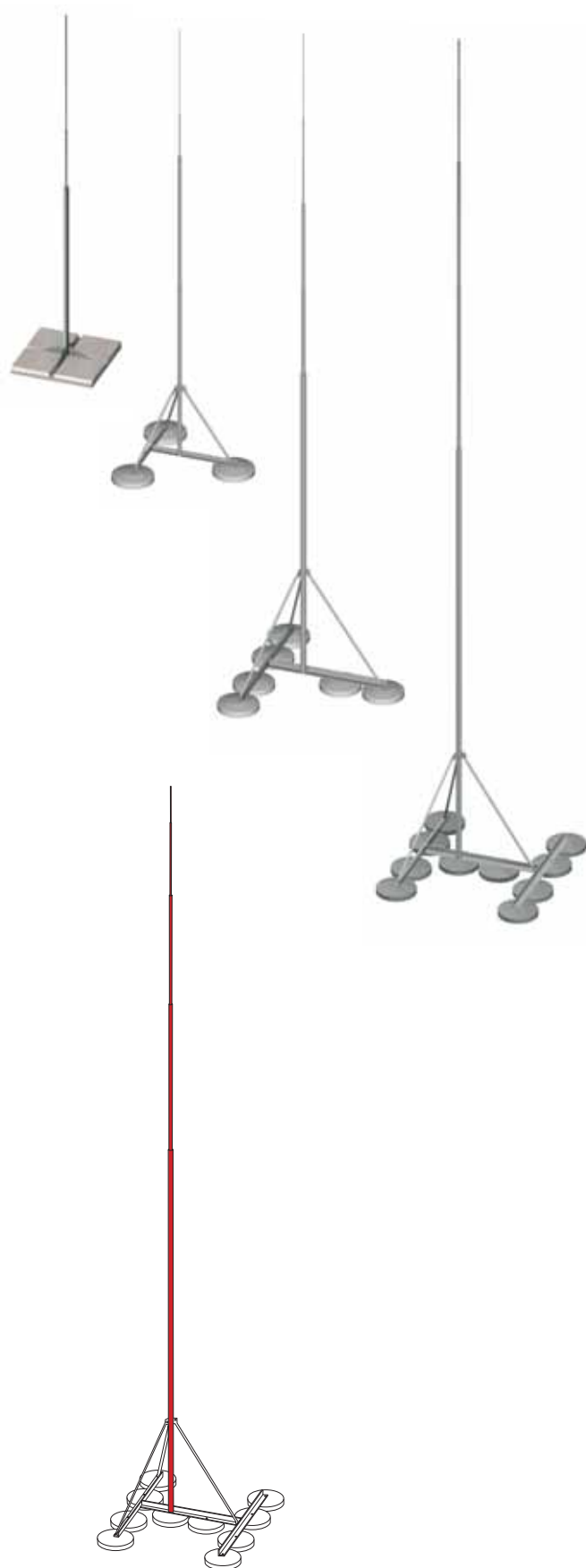


Free-Standing Air Terminals

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	1	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		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.

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

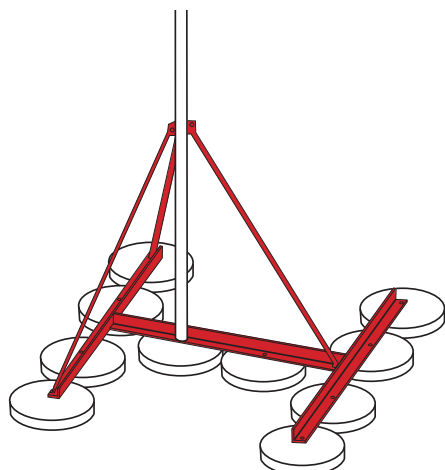
Material: Stainless Steel.

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.



ATS 001



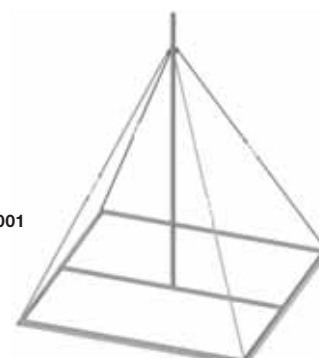
ATT 001



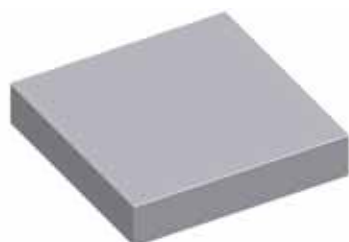
ATT 002



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.

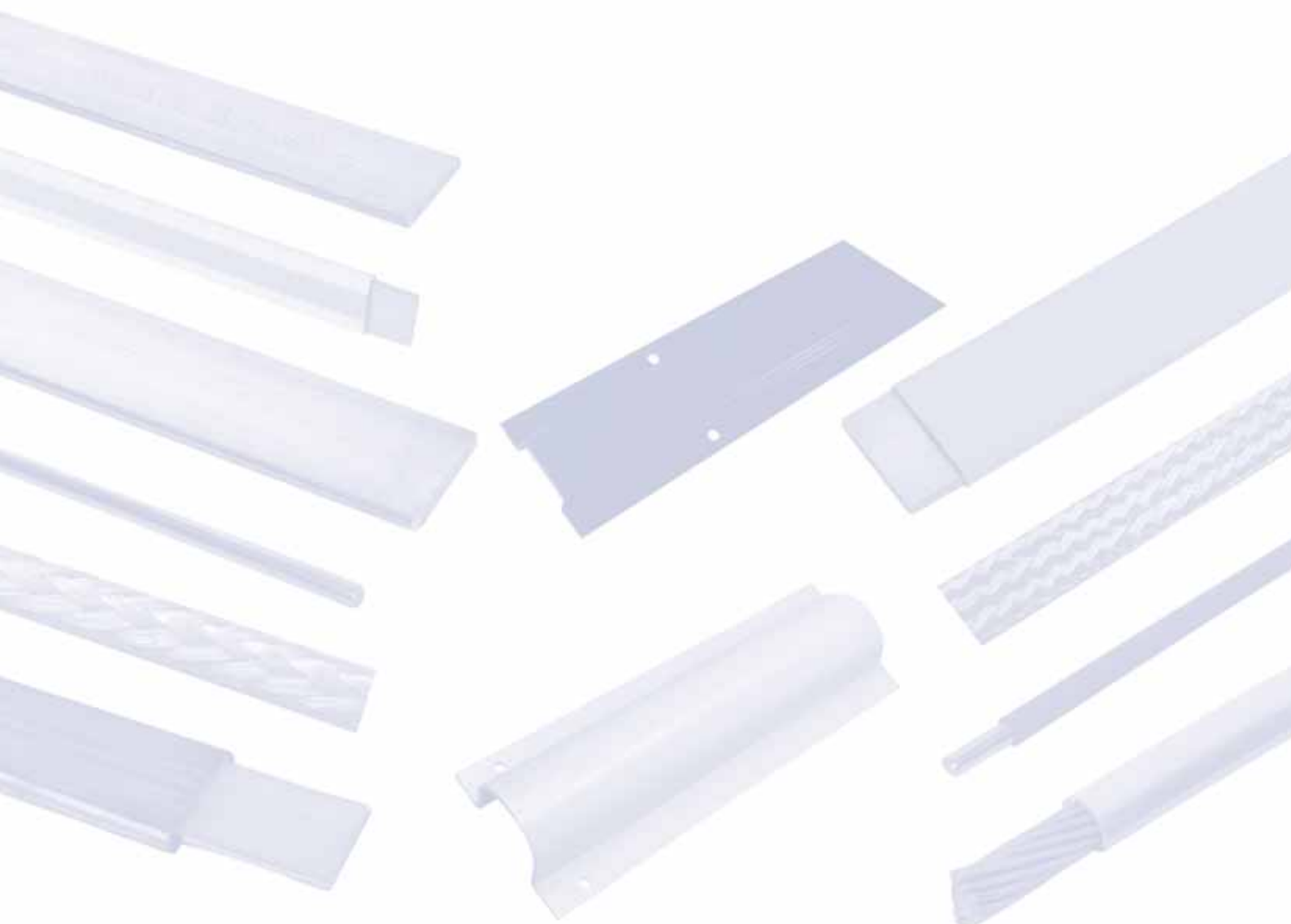
CONDUCTORS

Introduction 88 – 89

Flat Tape System 90 – 97

Solid Circular System 98 – 99

Cable & Wire System 100 – 104



Introduction

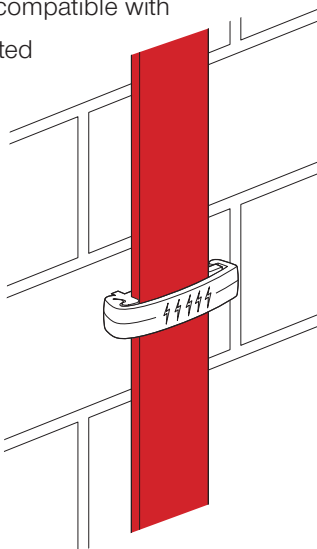
The conductor is a vital component of any earthing and lightning protection system.

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.

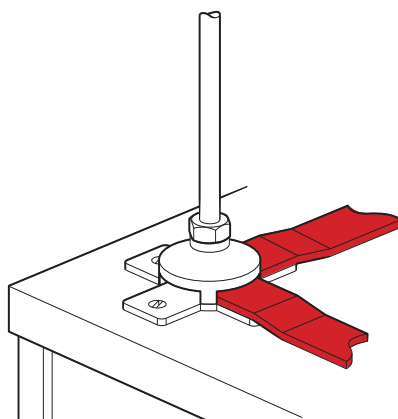
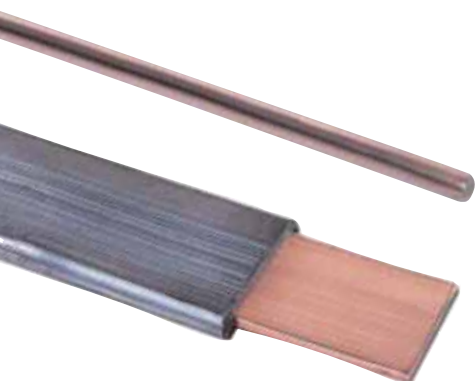
Secondly, the conductor should have sufficient cross-sectional area to be capable of carrying, without sustaining damage or deterioration, any currents that may reasonably be expected.



Copper Conductor Ratings

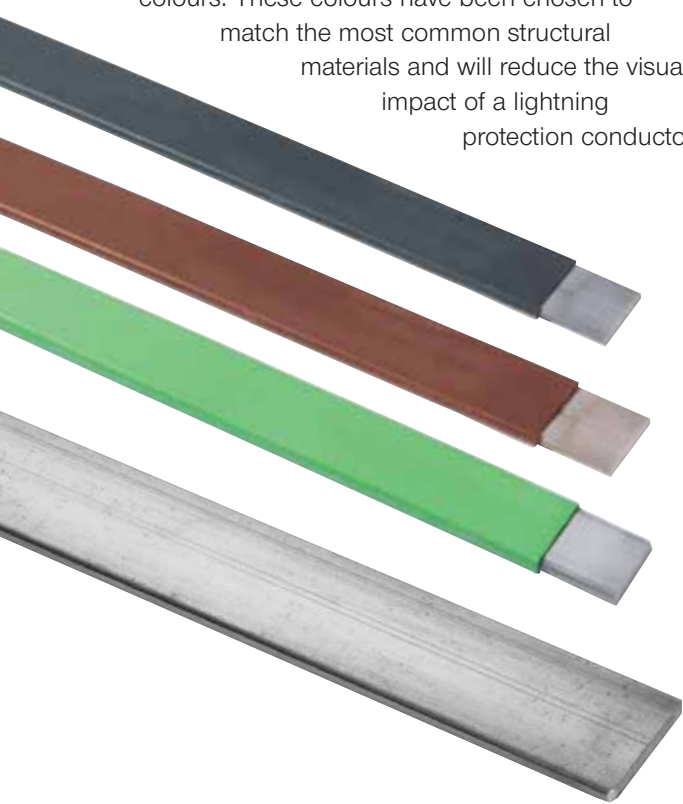
Fault current capacities, for one and three second durations, for a wide selection of standard sizes of copper tapes are shown in the table below. These conductor ratings are based upon the recommendations of BS 7430 with an initial conductor temperature of 30°C and a maximum temperature of 250°C.

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



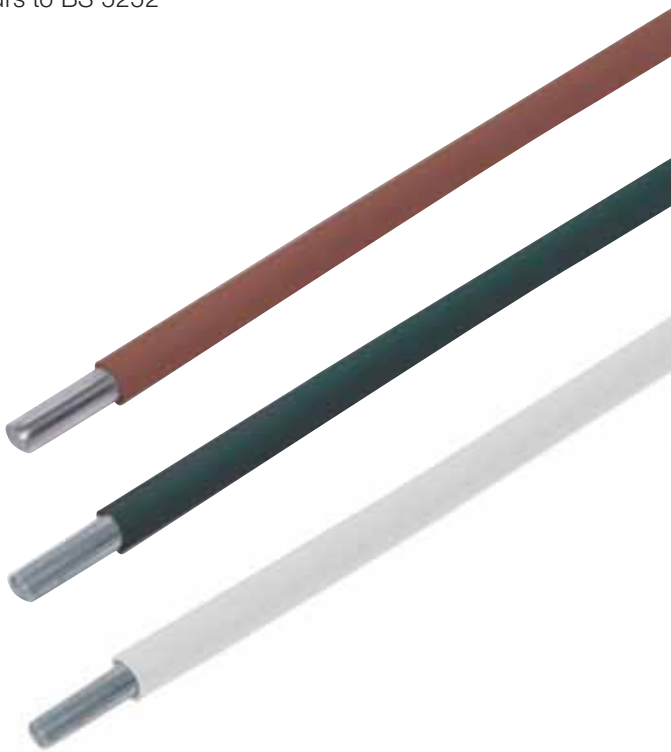
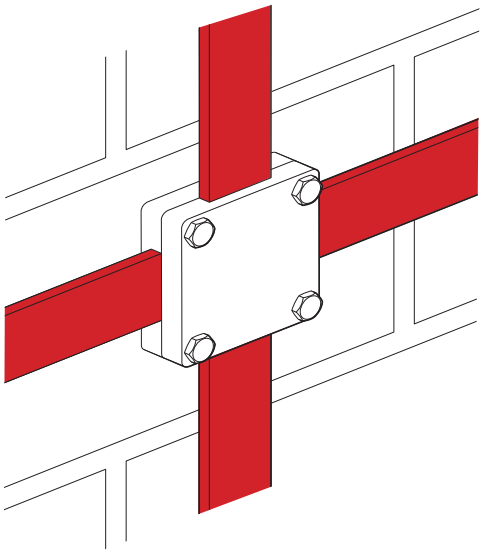
PVC Covered Conductors

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





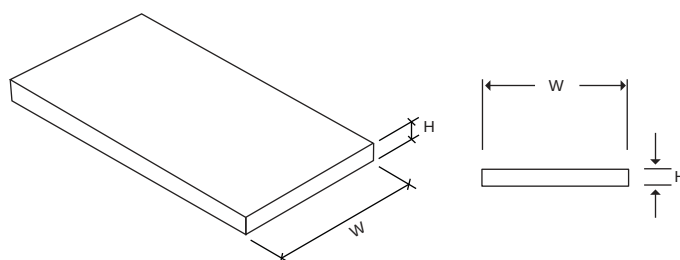
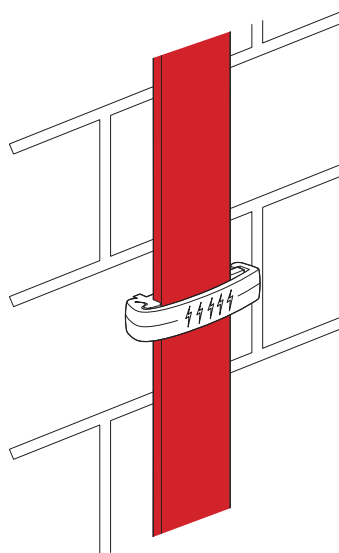
Bare Copper Tapes

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. mm ²	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.

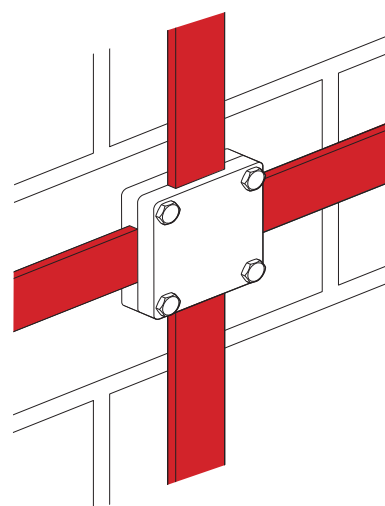
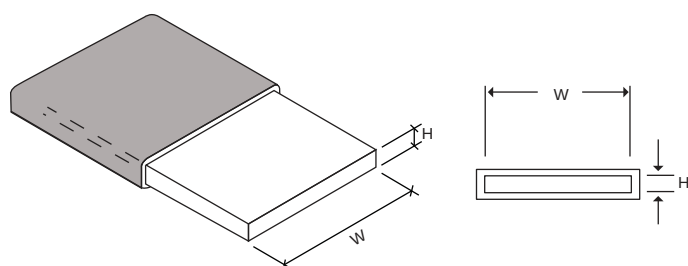
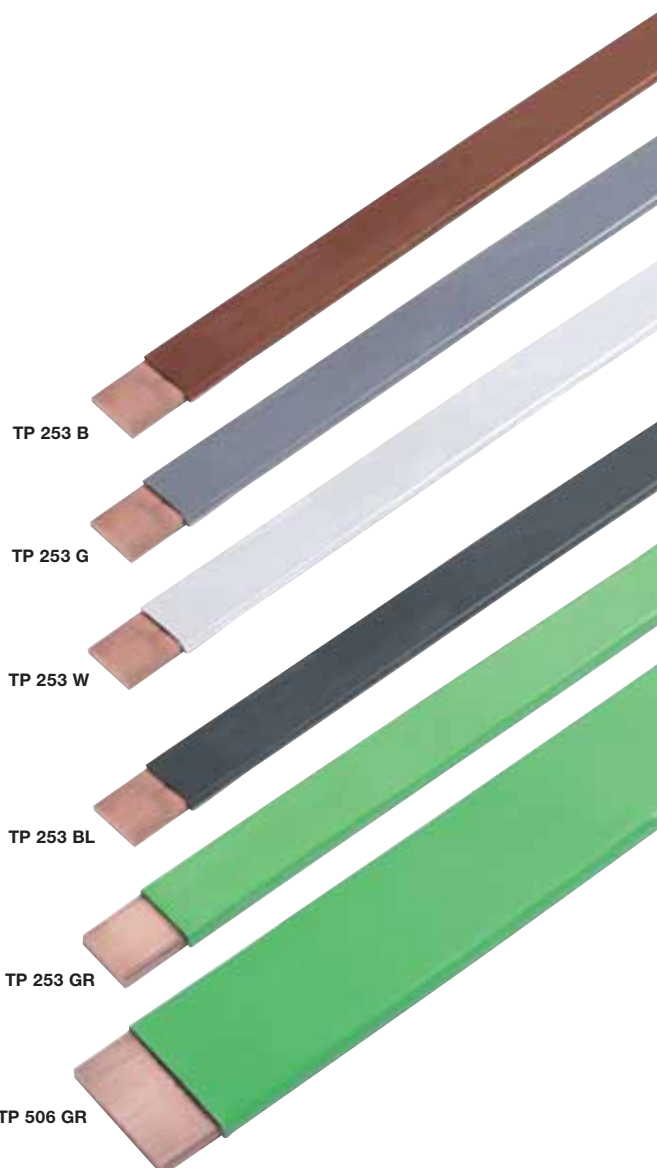
There is a choice of six standard PVC colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All PVC coverings are UV stabilised although some discolouration may occur over time.

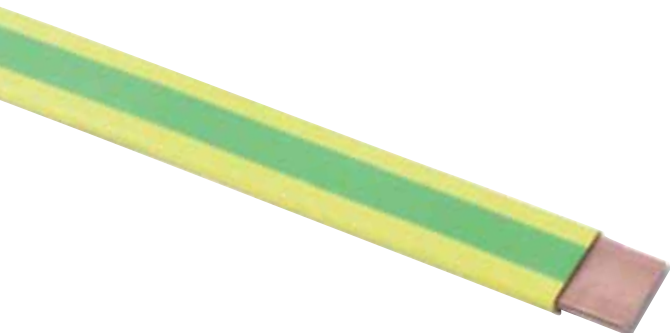
Other PVC colours are also available to order. These may be subject to minimum order quantities and lead times. Please contact our sales office for further information.

Size W x H mm	Colour	C.S.A. mm ²	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.

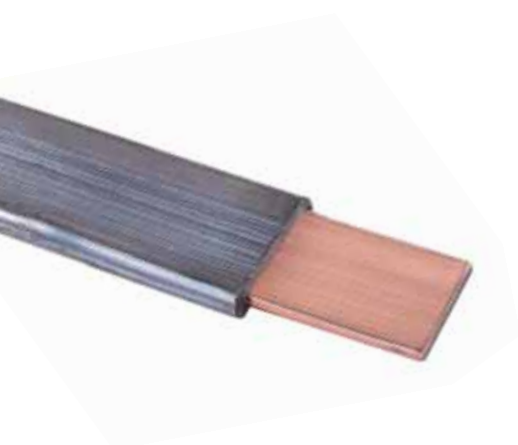
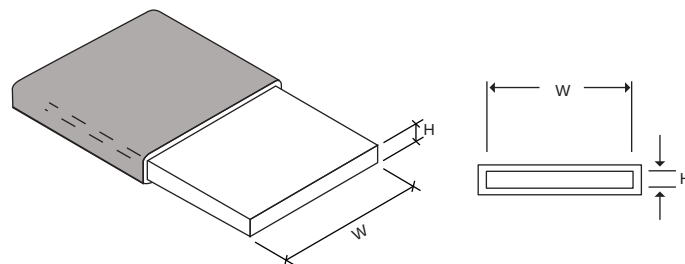




Green & Yellow PVC Insulated Copper Tape

Size W x H mm	C.S.A. mm ²	Weight per Metre kg	Standard Coil Size m	Part Number
25 x 3	75	0.79	25 & 50	TP 253 GY

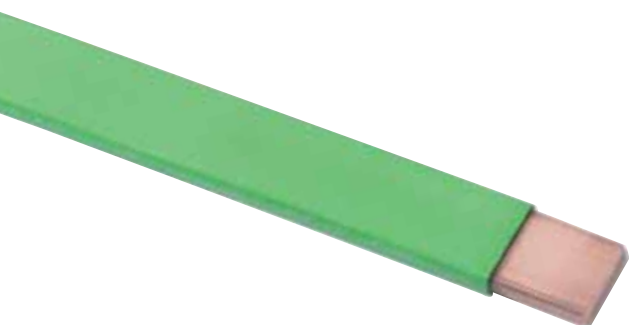
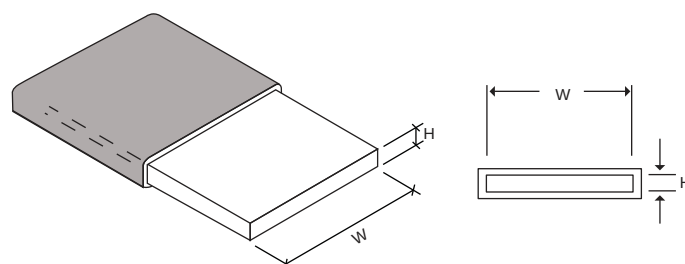
Material: Copper to BS EN 13601 (formerly BS 1432).
PVC colour to BS 6746C.



Lead Covered Copper Tape

Size W x H mm	C.S.A. mm ²	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).

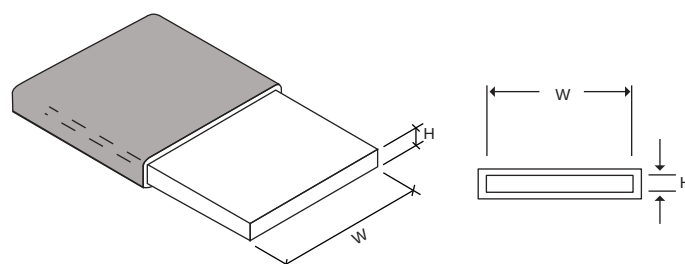


TP 253 GRLSF

LSOH Covered Copper Tapes

Size W x H mm	Colour	C.S.A. mm ²	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

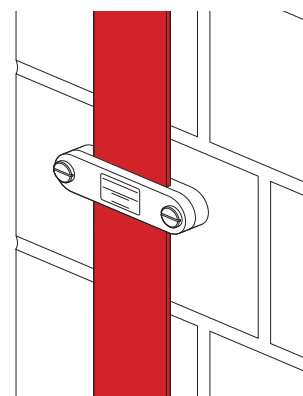
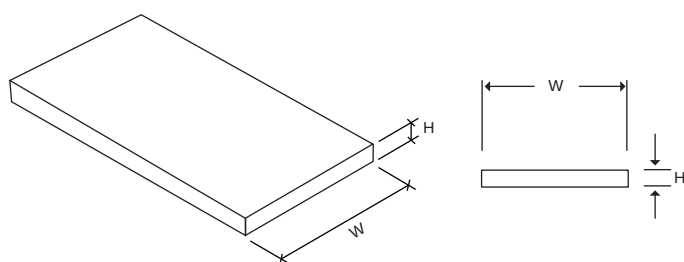
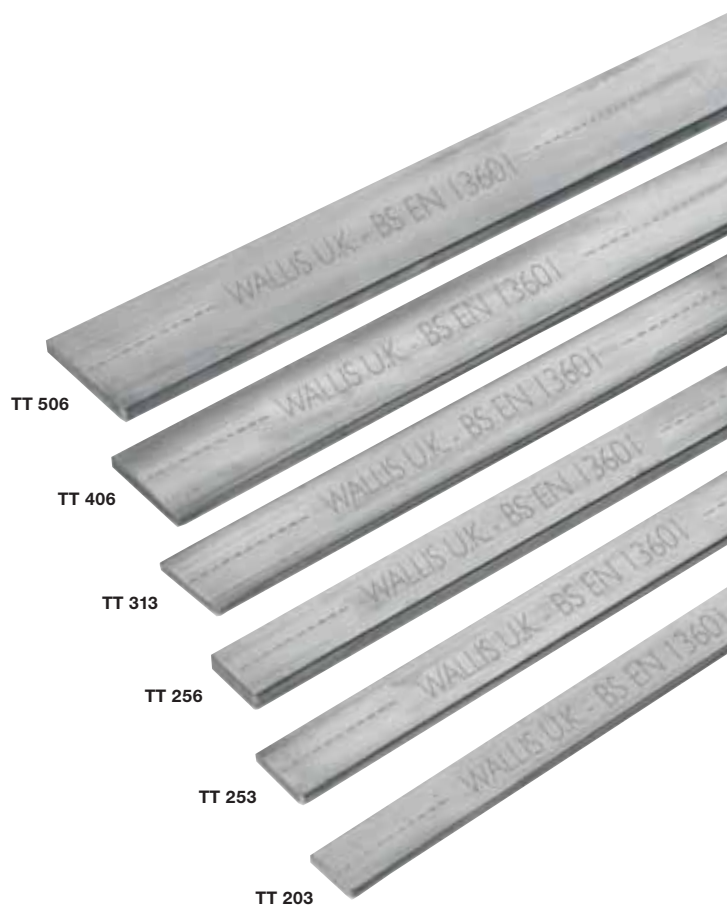
Material: Copper to BS EN 13601 (formerly BS 1432).
PVC colours to BS 6746C.

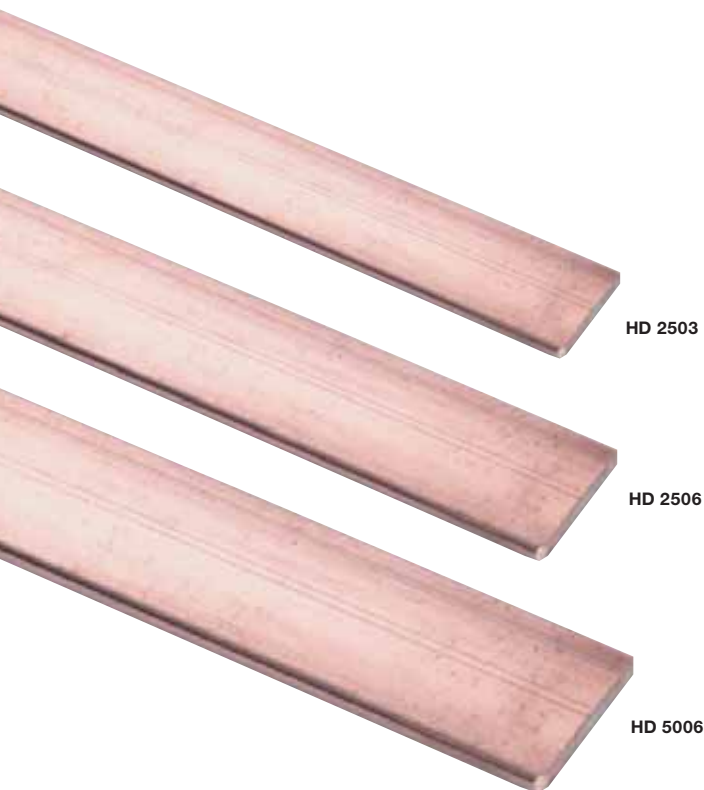


Tinned Copper Tapes

Size W x H mm	C.S.A. mm ²	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).

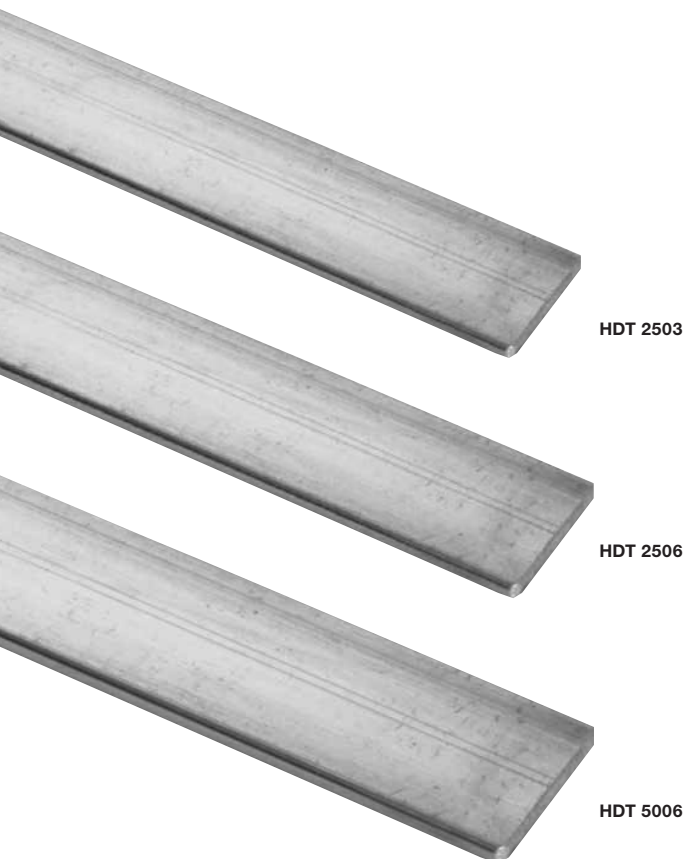
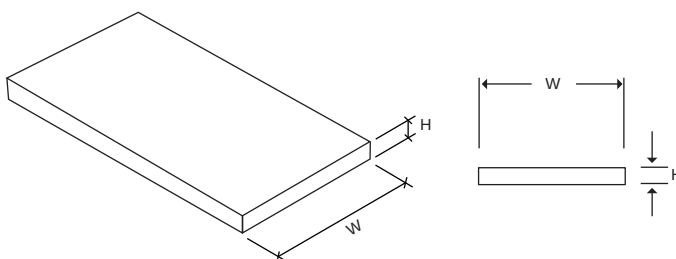




Bare Hard Drawn Copper Bars

Size W x H mm	C.S.A. mm ²	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

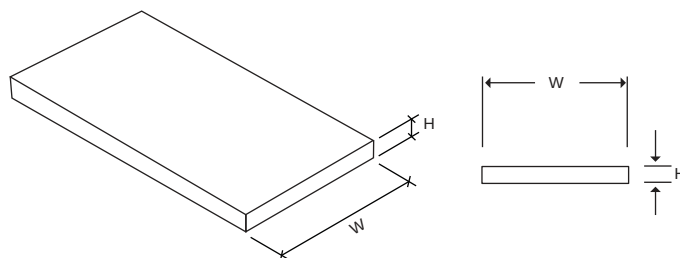
Material: Copper to BS EN 12163 (formerly BS 2874).



Tinned Hard Drawn Copper Bars

Size W x H mm	C.S.A. mm ²	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).

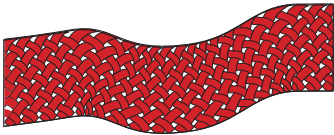
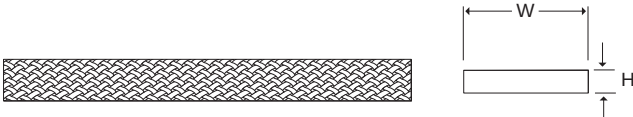
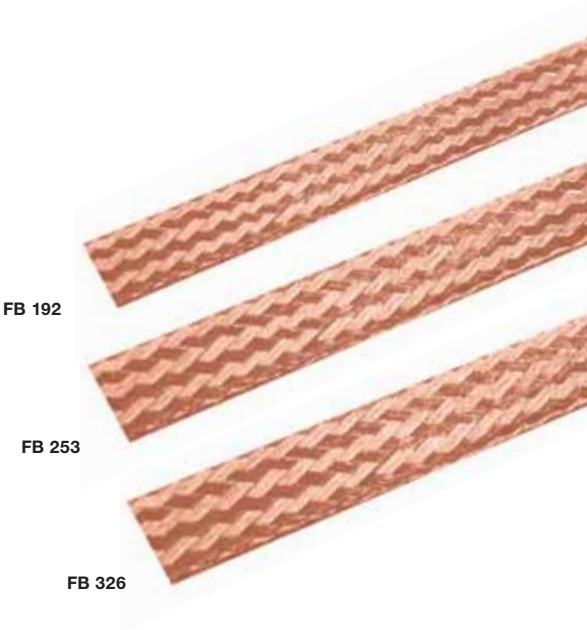


Bare Copper Flat Braids

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).

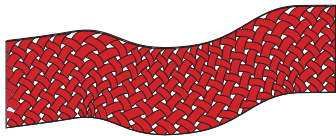
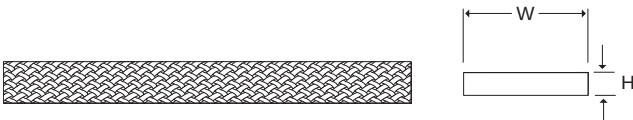
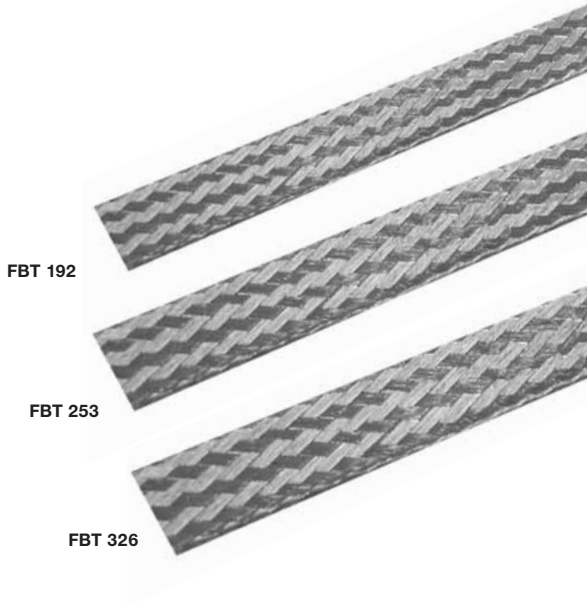


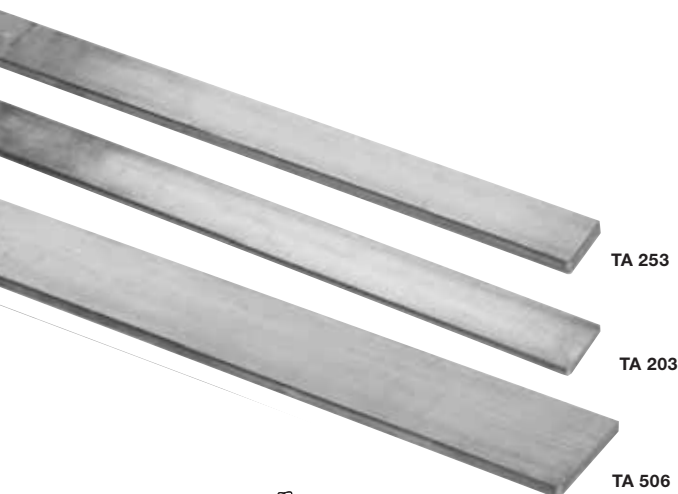
Tinned Copper Flat Braids

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).



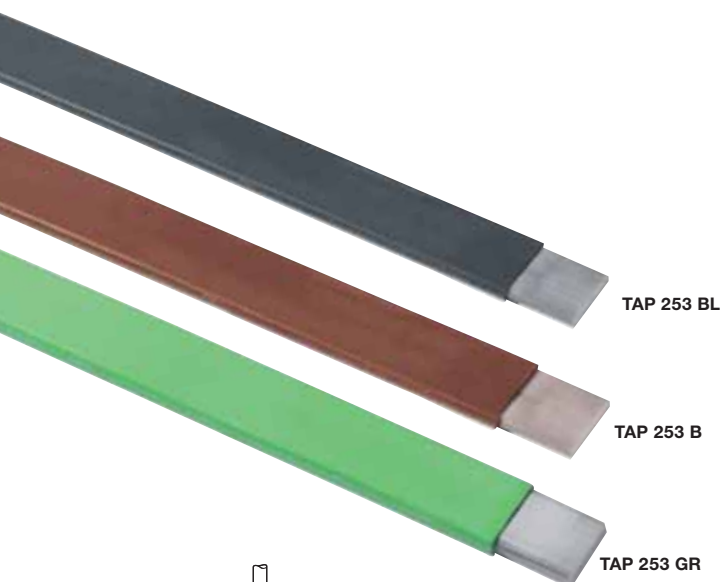
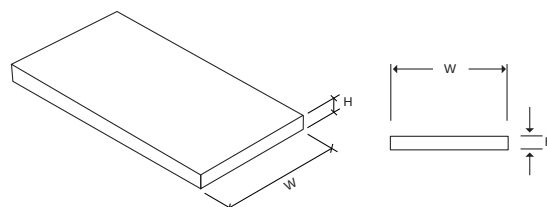
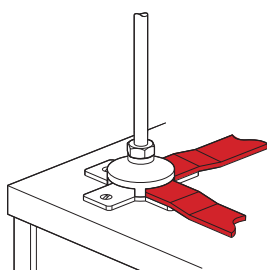


Bare Aluminium Tapes

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. mm ²	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

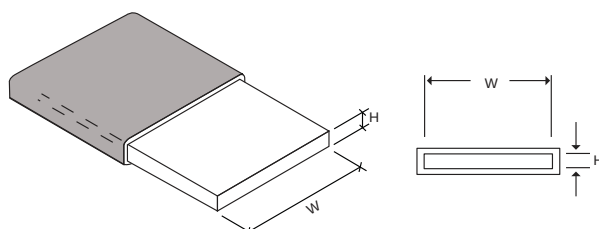
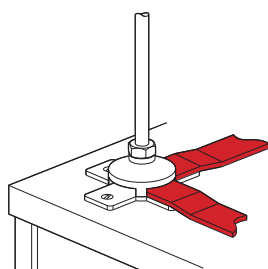
Wallis PVC covered aluminium tapes are available in a choice of six standard colours to match the most common building materials and provide an aesthetic finish to the external lightning protection system. All PVC coverings are UV stabilised although some discolouration may occur over time.

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. mm ²	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.

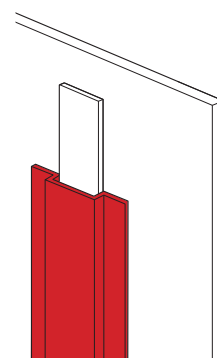
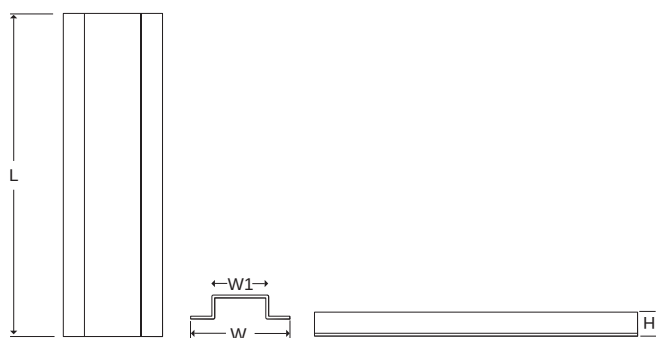
Easy to secure, the guard has a low profile and the galvanised finish offers long lasting resistance to corrosion.

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.

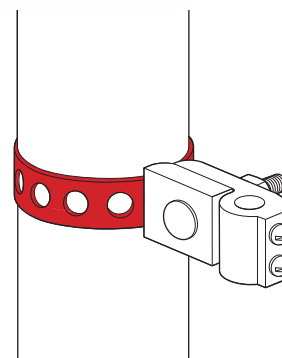
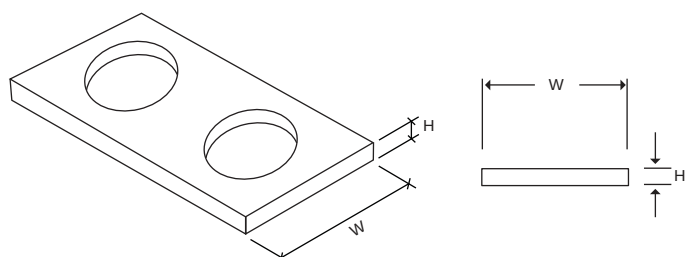


Bare Perforated Copper Tape

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. mm ²	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).

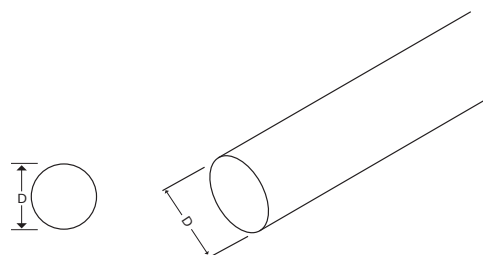
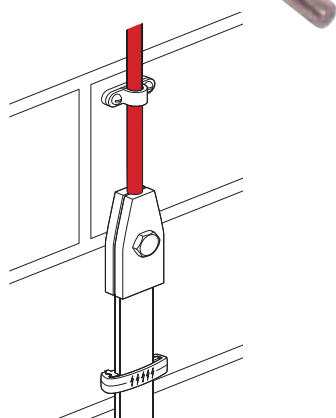


Bare Solid Circular Copper Conductor

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. mm ²	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).



PVC Covered Solid Circular Copper Conductors

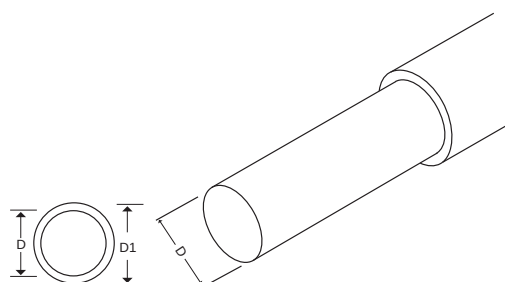
Wallis PVC covered 8mm diameter copper conductors are mainly used as down conductors on a building's structural lightning protection system.

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. mm ²	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.

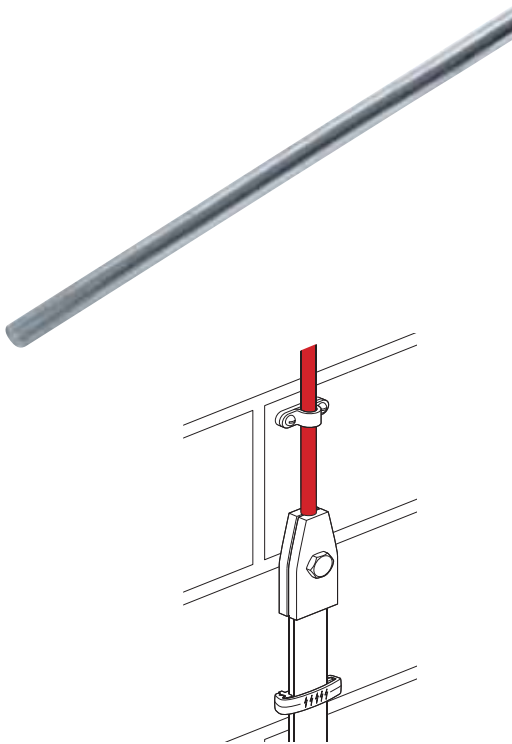
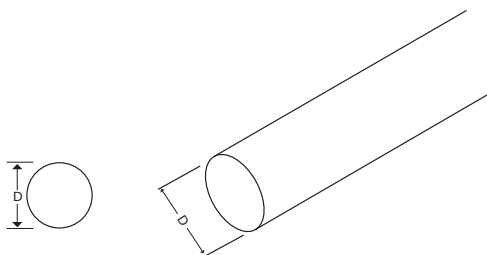


Bare Solid Circular Aluminium Conductor

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. mm ²	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

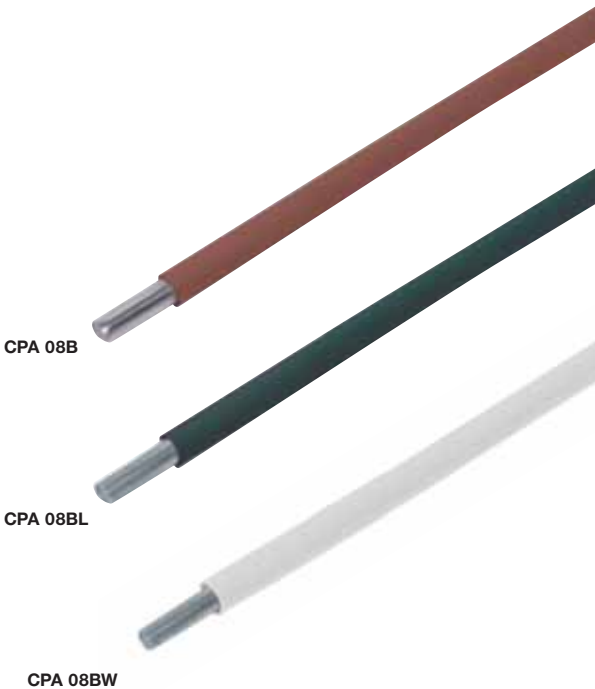
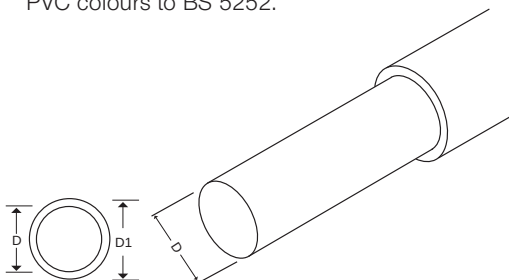
Wallis PVC covered 8mm diameter aluminium conductors are used as down conductors on a building's structural lightning protection system.

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. mm ²	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

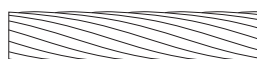
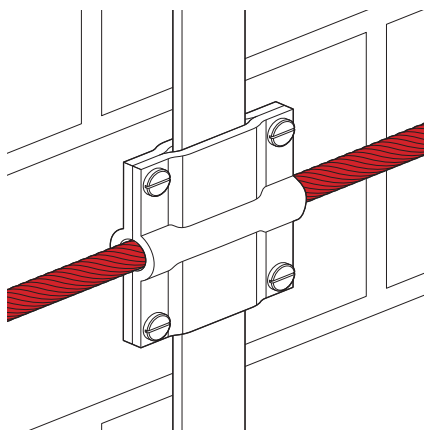
C.S.A. mm ²	Stranding No. x Ø mm	Nominal Ø mm	Maximum Resistance @ 20°C Ω/km	Weight per Metre kg	Part Number
6	7 x 1.04	3.12	3.080	0.05	CBS 006
10	7 x 1.35	4.05	1.830	0.09	CBS 010
16	7 x 1.70	5.10	1.150	0.15	CBS 016
25	7 x 2.14	6.42	0.727	0.23	CBS 025
35	19 x 1.53	7.65	0.524	0.32	CBS 035
50	19 x 1.78	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. mm ²	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. mm ²	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

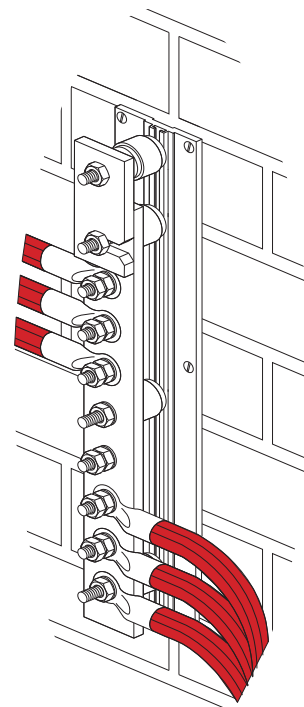
Material: Copper to BS 6360.
PVC Colour to BS 6746C.

CPS 016

CPS 035

CPS 095

CPS 240

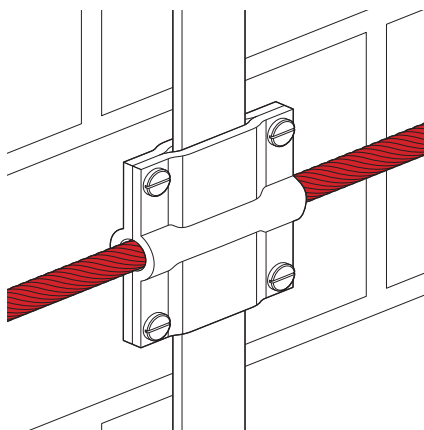




Tinned Stranded Copper Conductors

C.S.A. mm ²	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

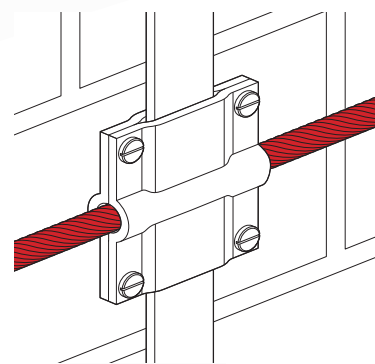
C.S.A. mm ²	Stranding No. x Ø mm	Nominal Diameter mm	Weight per Metre kg	Part Number
185	37 x 2.52	21.64	2.71	CLS 185
240	61 x 2.25	24.25	3.58	CLS 240
300	61 x 2.52	26.68	4.49	CLS 300
400	61 x 2.85	29.65	5.74	CLS 400

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

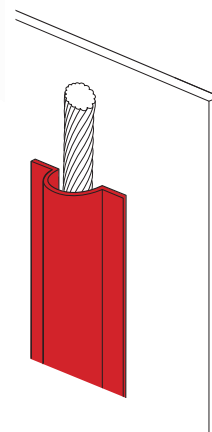
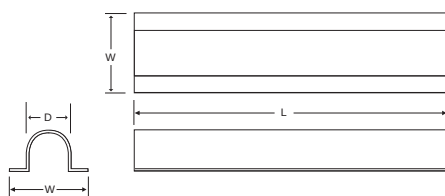
Material: Plastic.

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.



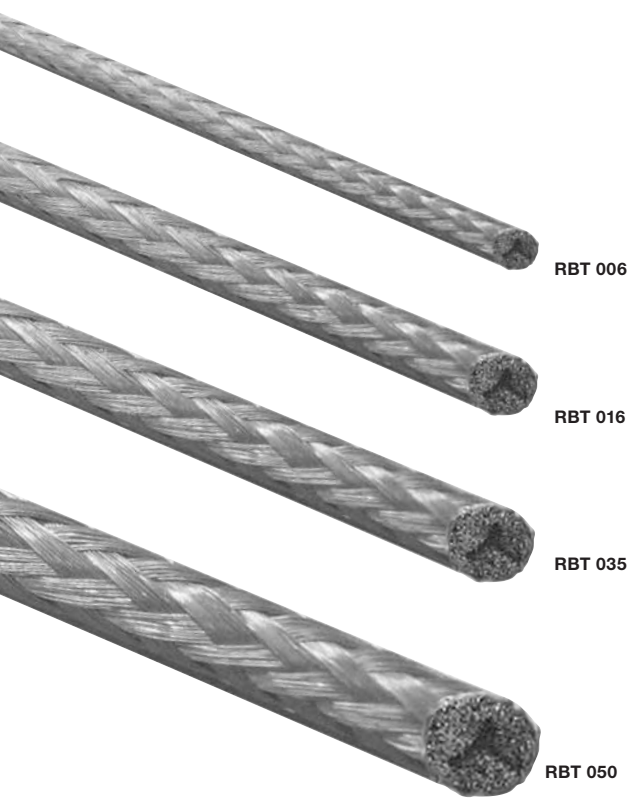


Bare Copper Round Braids

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. mm ²	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).



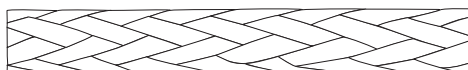
Tinned Copper Round Braids

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. mm ²	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 106 - 107

Hexagon Nuts 107

Flat Washers 108

Spring Washers 108

Countersunk Wood Screws 109

Round Head Wood Screws 109

Countersunk Machine Screws 110

Plastic Wall Plugs 110

Round Head Copper Nails 111

Round Head Rivets 111



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.



A

ACS 008..... 71
 ADC 060..... 54
 ADC 080..... 54
 ADC 100..... 54
 ADC 120..... 54

 ADC 140..... 54
 ADC 160..... 54
 ADC 180..... 54
 AMBA 16 47
 AMBG 16 .. 47, 73

 AMBG 20 47
 AOA 16M 47
 AOG 050 73
 AOG 070..... 73
 AOG 070..... 73

 AOG 16M 47
 AOG 20M 47
 ARA 102..... 62
 ARA 105..... 62
 ARC 102..... 62

 ARC 105..... 62
 ASAF 16M 46
 ASAL 16M 45
 ASAR 16M 46
 ASGF 050..... 74

 ASGF 070..... 74
 ASGF 095..... 74
 ASGF 16M 46
 ASGL 16M 45
 ASGL 20M 45

 ASGR 16M 46
 ATA 112M..... 44
 ATA 120M..... 44
 ATA 139M..... 44
 ATA 160M..... 44

 ATA 179M..... 44
 ATC 112M . 44, 72
 ATC 120M . 44, 72
 ATC 139M . 44, 72
 ATC 160M . 44, 72

 ATC 179M . 44, 72
 ATC 212M 44
 ATC 220M 44
 ATC 239M 44
 ATC 260M 44

 ATC 279M 44
 ATF 010..... 84
 ATF 011..... 84
 ATF 012..... 84
 ATF 030 84

ATF 035 84
 ATF 040 84
 ATF 045 84
 ATF 050 84
 ATF 055 84

 ATF 060 84
 ATF 065 84
 ATF 070 84
 ATF 075 84
 ATF 080 84

 ATF 090 84
 ATQ 001 85
 ATS 001 85
 ATT 001 85
 ATT 002 85

 ATT 003 85
 AVC 001 103
 AVC 002..... 103
 AVG 97
 AVG 3 97

 AVP 97
 AVP 3 97

B

 BBA 08 69
 BBA 253..... 60
 BBA 25308 ... 70
 BBG 08..... 69
 BBG 253 SS .. 60

 BBG 25308 ... 70
 BDC 060..... 55
 BDC 080..... 55
 BDC 100..... 55
 BDC 120..... 55

 BDC 140..... 55
 BDC 160..... 55
 BDC 180..... 55
 BDC 200..... 55
 BFE 200 36

 BFE 300 36
 BFE 400 36
 BFR 001 82
 BIM 08 68
 BIM 253 60

 BIM 25308 68
 BRA 08..... 69
 BRA 253..... 61
 BRG 08..... 69
 BRG 253..... 61

 BSS 08 68
 BSS 253..... 60

BTA 008 70
 BTC 008..... 70
 BTC 070... 35, 78
 BTC 120... 35, 78
 BTC 185 35
 BTC 240 35
 BTC 300 35

 BWG 253 61

C

 CBS 006..... 100
 CBS 010..... 100
 CBS 016..... 100
 CBS 025..... 100
 CBS 035..... 100

 CBS 050..... 100
 CBS 070..... 100
 CBS 095..... 100
 CBS 120..... 100
 CBS 150..... 100

 CBS 185..... 100
 CBS 240..... 100
 CBS 300..... 100
 CBS 400..... 100
 CCC 010..... 38

 CCC 016..... 38
 CCC 016..... 38
 CCC 025..... 38
 CCC 025..... 38
 CCC 035..... 38

 CCC 035..... 38
 CCC 050..... 38
 CCC 050..... 38
 CCC 070..... 38
 CCC 075..... 38

 CCC 095..... 38
 CCC 120..... 38
 CCC 120..... 38
 CCC 150..... 38
 CCC 185..... 38

 CCC 185..... 38
 CCC 240..... 38
 CCC 240-120.. 38
 CCC 25-10 ... 38
 CCC 25PM.... 38

 CCC 70-35.... 38
 CCC 95-35.... 38
 CHS 035.... 100
 CHS 050.... 100
 CHS 070.... 100

 CHS 095..... 100

CLG 100018... 40
 CLG 100020 .. 40
 CLG 1010..... 39
 CLG 1012..... 39
 CLG 105..... 39
 CLG 106..... 39
 CLG 108..... 39

 CLG 12010.... 40
 CLG 12012.... 40
 CLG 12014.... 40
 CLG 12016.... 40
 CLG 12020.... 40

 CLG 1208..... 40
 CLG 15010.... 40
 CLG 15012.... 40
 CLG 15014.... 40
 CLG 15016.... 40

 CLG 15020.... 40
 CLG 1508..... 40
 CLG 1610.... 39
 CLG 1612.... 39
 CLG 166..... 39

 CLG 168..... 39
 CLG 18510.... 40
 CLG 18512.... 40
 CLG 18514.... 40
 CLG 18516.... 40

 CLG 18520.... 40
 CLG 24010.... 40
 CLG 24012.... 40
 CLG 24014.... 40
 CLG 24016.... 40

 CLG 24020.... 40
 CLG 2510..... 39
 CLG 2512.... 39
 CLG 256..... 39
 CLG 258..... 39

 CLG 30010.... 40
 CLG 30012.... 40
 CLG 30014.... 40
 CLG 30020 ... 40
 CLG 30061.... 40

 CLG 3510..... 39
 CLG 3512..... 39
 CLG 3514..... 39
 CLG 356..... 39
 CLG 358..... 39

 CLG 40012.... 40
 CLG 40014.... 40
 CLG 40016.... 40
 CLG 40020 ... 40
 CLG 50016.... 40

CLG 50018.... 40
 CLG 50020 ... 40
 CLG 5010..... 39
 CLG 5012..... 39
 CLG 5014..... 39
 CLG 506..... 39

 CLG 508..... 39
 CLG 610..... 39
 CLG 63016.... 40
 CLG 63018.... 40
 CLG 63020 ... 40

 CLG 64..... 39
 CLG 65..... 39
 CLG 66..... 39
 CLG 68..... 39
 CLG 7010..... 39

 CLG 7012.... 39
 CLG 7014.... 39
 CLG 7016.... 39
 CLG 706..... 39
 CLG 708..... 39

 CLG 80016.... 40
 CLG 80018.... 40
 CLG 80020 ... 40
 CLG 9510..... 39
 CLG 9512..... 39

 CLG 9514.... 39
 CLG 9516.... 39
 CLG 956..... 39
 CLG 958..... 39
 CLS 185..... 103

 CLS 240..... 103
 CLS 300..... 103
 CLS 400..... 103
 CM 08 B..... 65
 CM 08 G..... 65

 CP 08 B 65
 CP 08 BL 65
 CP 08 G 65
 CP 08 S 65
 CP 08 W..... 65

 CPA 08 B 99
 CPA 08 BL 99
 CPA 08 G 99
 CPA 08 S 99
 CPA 08 W..... 99

 CPC 08 B 98
 CPC 08 BL 98
 CPC 08 G 98
 CPC 08 S 98
 CPC 08 W 98
 CPS 006..... 101

PART NUMBER INDEX



CPS 010 101	DCG 240 76	EBC 100 33	EMP 603 25	ERC 318 14
CPS 016 101	DCG 254 48	EBC 106 32	EMP 901 25	ERC 324 14
CPS 025 101	DCG 256 48	EBC 108 32	EMP 903 25	ERC 330 14
CPS 035 101	DCG 300 76	EBC 110 32	EPB 4030 34	ERCD 16 . . . 15, 17
CPS 050 101	DCG 313 48	EBC 112 32	EPB 4040 34	ERCD 20 . . . 15, 17
CPS 070 101	DCG 316 48	EBC 114 32	EPB 5030 34	ERCD 25 . . . 15, 17
CPS 095 101	DCG 383 48	EBC 116 32	EPB 5040 34	ERCS 16 . . . 15, 17
CPS 120 101	DCG 385 48	EBC 118 32	EPB 5050 34	ERCS 20 . . . 15, 17
CPS 150 101	DCG 386 48	EBC 120 32	EPP 001 W . . . 27	ERCS 25 . . . 15, 17
CPS 185 101	DCG 503 48	EBC 122 32	EPP 002 W . . . 27	ERD 01 15
CPS 240 101	DCG 504 48	EBC 124 32	ERA 1625 20	ERD 02 15
CPS 300 101	DCG 508 48	EBC 126 32	ERA 1625A . . . 20	ERD 16 17
CPS 400 101	DCG 810 64	EBC 128 32	ERA 1631 20	ERD 25 17
CSA 001 55	DCG 815 64	EBC 130 32	ERA 1638 20	ERG 112 18
CSA 08 99	DCL 253 48	EBC 206 33	ERA 1650 20	ERH 01W 29
CSC 08 98	DGP 006 76	EBC 208 33	ERA 2525 20	ERH 20 28
CTS 006 102	DGP 010 76	EBC 210 33	ERB 012 12	ERH 21 28
CTS 010 102	DGP 016 76	EBC 212 33	ERB 112 12	ERR 1035 21
CTS 016 102	DGP 025 76	EBC 214 33	ERB 115 12	ERR 1635 21
CTS 025 102	DGP 035 76	EBC 216 33	ERB 118 12	ERR 1670 21
CTS 035 102	DGP 050 76	EBC 218 33	ERB 124 12	ERR 2095 21
CTS 050 102	DGP 070 76	EBC 220 33	ERB 130 12	ERS 010 24
CTS 070 102	DGP 095 76	EBC 222 33	ERB 212 12	ERS 016 24
CTS 095 102	DGP 120 76	EBC 224 33	ERB 215 12	ERS 020 24
CTS 120 102	DGP 185 76	EBC 226 33	ERB 218 12	ERSS 16 24
CTS 150 102	DGP 240 76	EBC 228 33	ERB 224 12	ERSS 20 24
CTS 185 102	DGP 253 48	EBC 230 33	ERB 230 12	ERU 016 22
CTS 240 102	DGP 256 48	EBC 25 28	ERB 412 12	ERU 025 22
CTS 300 102	DGP 300 76	EBC 27 28	ERB 415 12	ERU 031 22
CTS 400 102	DGP 506 48	EBC 35 27	ERB 418 12	ERU 038 22
D	DT 510 81	EBC 37 27	ERB 424 12	ERU 050 22
DAP 253 48	E	EBG 25 26	ERBD 12 13	ERU 216 22
DAP 506 48	EBB 004 34	EBG 25P 26	ERBD 16 13	ERU 225 22
DCA 253 48	EBB 004/1 34	EBI 001 30	ERBD 20 13	ERU 231 22
DCA 256 48	EBB 008 34	EBI 002 30	ERBO 12 13	ERU 238 22
DCA 506 48	EBC 006 32	EGP 01 31	ERBO 16 13	ERU 250 22
DCA 810 64	EBC 008 32	EGP 01 500 . . . 31	ERBO 20 13	ERU 470 22
DCA 815 64	EBC 010 32	EGP 02 31	ERC 112 14	ERU 470 22
DCB 253 48	EBC 012 32	EGP 02 1000 . . 31	ERC 115 14	ERU 570 22
DCB 506 48	EBC 014 32	EGP 02 1500 . . 31	ERC 118 14	ERU 570 22
DCG 006 76	EBC 016 32	EGP 02 500 . . . 31	ERC 124 14	ERU 670 22
DCG 010 76	EBC 018 32	EGP 04 31	ERC 130 14	ERU 770 22
DCG 016 76	EBC 020 32	EGP 04 1000 . . 31	ERC 212 14	ERX 05 37
DCG 025 76	EBC 022 32	EGP 04 1500 . . 31	ERC 215 14	ERX 310 19
DCG 035 76	EBC 024 32	EGP 04 500 . . . 31	ERC 218 14	ERX 315 19
DCG 050 76	EBC 026 32	EMA 25 26	ERC 224 14	ERX 320 19
DCG 070 76	EBC 028 32	EMA 26 26	ERC 230 14	ERX 325 19
DCG 095 76	EBC 030 32	EML 603 25	ERC 24 24	ERX 330 19
DCG 120 76	EBC 05 29	EML 903 25	ERC 26 24	ERX 510 19
DCG 185 76	EBC 07 29	EML 903 SPC . . 25	ERC 312 14	ERX 515 19
DCG 203 48		EMP 601 25	ERC 315 14	ERX 520 19

ERX 525 19	HA 10 W 63	JSG 253 59	OAS 139 109	ORS 151 109
ERX 530 19	HBA 001 56	JYA 08 67	OAS 151 109	ORS 152 109
ERY 10 37	HBG 001 56	JYG 08 67	OAS 152 109	OSB 0610 106
ERZ 112 16	HD 10005 94		OCN 050 111	OSB 0612 106
ERZ 115 16	HD 10006 94	M	OMB 0612 ... 110	OSB 0616 106
ERZ 118 16	HD 2003 94	MAP 253 51	OMB 0616 ... 110	OSB 0620 ... 106
ERZ 124 16	HD 2503 94	MBA 08 68	OMB 0620 ... 110	OSB 0625 ... 106
ERZ 130 16	HD 2504 94	MBG 08 68	OMB 0816 ... 110	OSB 0812 106
ERZ 212 16	HD 2506 94	MPB 253 51	OMB 0820 ... 110	OSB 0816 106
ERZ 215 16	HD 3806 94	MPC 16 ... 45, 72	OMB 0825 ... 110	OSB 0820 ... 106
ERZ 218 16	HD 5006 94	MTA 203 51	OMB 1025 ... 110	OSB 0825 ... 106
ERZ 224 16	HD 7506 94	MTA 253 51	OMB 1030 ... 110	OSB 0830 ... 106
ERZ 230 16	HDT 2503 94	MTB 203 51	OMB 1035 ... 110	OSB 1016 106
ERZ 312 16	HDT 2506 94	MTB 253 51	OMS 0612 110	OSB 1020 106
ERZ 315 16	HDT 5006 94	MTB 506 51	OMS 0616 110	OSB 1025 106
ERZ 318 16	HGA 253 56	MVA 08 66	OMS 0620 ... 110	OSB 1030 106
ERZ 324 16	HGG 253 56	MVG 08 66	OMS 0816 110	OSB 1035 106
ERZ 330 16	HPY 008 71		OMS 0820 ... 110	OSB 1225 106
EYE 034 37	HSAL 253 B ... 52	N	OMS 0825 ... 110	OSB 1230 106
EYE 058 37	HSAL 253 BL ... 52		OMS 1025 ... 110	OSB 1235 106
F	HSAL 253 BM ... 52	NM 203 B 49	OMS 1030 ... 110	OSB 1240 106
	HSAL 253 G ... 52	NM 203 G 49	OMS 1035 ... 110	OSB 1250 106
FB 121 95	HSAL 253 GM ... 52	NM 253 B 49	ONB 06 107	OSP 0610 106
FB 151 95	HSAL 253 S ... 52	NM 253 G 49	ONB 08 107	OSP 0612 106
FB 192 95		NM 506 B 49	ONB 10 107	OSP 0616 106
FB 232 95	I			
FB 253 95	IC 08 80	NMP 203 B ... 50	ONB 12 107	OSP 0620 106
		NMP 203 G ... 50	ONP 06 107	OSP 0625 106
FB 305 95	J	NMP 253 B ... 50	ONP 08 107	OSP 0812 106
FB 326 95		NMP 253 G ... 50	ONP 10 107	OSP 0816 106
FBT 121 95	JA 253 57	NP 253 B 49	ONP 12 107	OSP 0820 106
FBT 151 95	JAO 253 58	NP 253 BL 49	ONS 06 107	OSP 0825 106
FBT 192 95	JG 253 57	NP 253 G 49	ONS 08 107	OSP 0830 106
	JG 256 57	NP 253 GR 49	ONS 10 107	OSP 1016 106
FBT 232 95	JG 313 57	NP 253 S 49	ONS 12 107	OSP 1020 106
FBT 253 95		NP 253 W 49	OP10 BLU ... 110	OSP 1025 106
FBT 305 95				
FBT 326 95	JG 386 57	NPP 253 B ... 50	OP10 BRO ... 110	OSP 1030 106
FLX100 83	JG 503 57	NPP 253 BL ... 50	OP10 RED ... 110	OSP 1035 106
	JG 506 57	NPP 253 G ... 50	ORA 512 111	OSP 1225 106
G	JGC 050 77	NPP 253 GR .. 50	ORA 520 111	OSP 1230 106
	JGC 070 77	NPP 253 S ... 50	ORB 132 109	OSP 1235 106
GCS 008 71				
GCS 050 74	JGC 095 77	NPP 253 W ... 50	ORB 133 109	OSP 1240 106
GCS 070 74	JGO 253W ... 58		ORB 138 109	OSP 1250 106
GCS 095 74	JGO 506W ... 58	O	ORB 139 109	OSS 0610 107
GYT 2533 82	JOA 253 67		ORB 151 109	OSS 0612 107
	JOM 050 78	OAB 132 109	ORB 152 109	OSS 0616 107
		OAB 133 109		
H		OAB 138 109		
	JOM 070 78	OAB 139 109	ORC 512 111	OSS 0620 107
HA 08 B 63	JOM 095 78	OAB 151 109	ORC 520 111	OSS 0625 107
HA 08 G 63	JOM 253 67		ORS 132 109	OSS 0812 107
HA 10 B 63	JPA 253 59	OAB 152 109	ORS 133 109	OSS 0816 107
HA 10 BL 63	JPB 253 L 57	OAS 132 109	ORS 138 109	OSS 0820 107
HA 10 G 63		OAS 133 109		
	JPBO 253 L ... 58	OAS 138 109	ORS 139 109	OSS 0825 107
HA 10 S 63	JPG 253 59			

PART NUMBER INDEX



OSS 0830.... 107	PCP 010..... 75	RCB 012..... 86	TC 203..... 90	TT 256..... 93
OSS 1016.... 107	PCP 016..... 75	RCB 016..... 86	TC 251..... 90	TT 302..... 93
OSS 1020.... 107	PCP 025..... 75	RCB 020..... 86	TC 253..... 90	TT 303..... 93
OSS 1025.... 107	PCP 035..... 75	RCB 025..... 86	TC 254..... 90	TT 304..... 93
OSS 1030.... 107	PCP 050..... 75	RM 08 B..... 65	TC 256..... 90	TT 305..... 93
OSS 1035.... 107	PCP 070..... 75	RM 08 G..... 65	TC 302..... 90	TT 313..... 93
OSS 1225.... 107	PCP 095..... 75	RP 08 B..... 65	TC 303..... 90	TT 3154..... 93
OSS 1230.... 107	PCP 120..... 75	RP 08 BL..... 65	TC 304..... 90	TT 316..... 93
OSS 1235.... 107	PCP 150..... 75	RP 08 G..... 65	TC 305..... 90	TT 383..... 93
OSS 1240.... 107	PCP 185..... 75	RP 08 S..... 65	TC 313..... 90	TT 385..... 93
OSS 1250.... 107	PCP 240..... 75	RP 08 W..... 65	TC 3154..... 90	TT 386..... 93
OTP 06..... 108	PCP 300..... 75	S	TC 316..... 90	TT 403..... 93
OTP 08..... 108	PCT 251..... 97	SA 01..... 79	TC 383..... 90	TT 404..... 93
OTP 10..... 108	PES 001-15... 30	SBC 010..... 36	TC 385..... 90	TT 405..... 93
OTP 12..... 108	PES 001-16... 30	SBC 016..... 36	TC 386..... 90	TT 406..... 93
OTS 06..... 108	PES 001-20... 30	SBC 025..... 36	TC 403..... 90	TT 4063..... 93
OTS 08..... 108	PES 001-34... 30	SBC 035..... 36	TC 404..... 90	TT 503..... 93
OTS 10..... 108	PES 001-58... 30	SBC 050..... 36	TC 405..... 90	TT 504..... 93
OTS 12..... 108	PES 002-15... 30	SBC 070..... 36	TC 406..... 90	TT 505..... 93
OWB 06..... 108	PES 002-16... 30	SBC 095..... 36	TC 4063..... 90	TT 506..... 93
OWB 08..... 108	PES 002-20... 30	SBC 120..... 36	TC 503..... 90	TT 5063..... 93
OWB 10..... 108	PES 002-34... 30	SBC 150..... 36	TC 504..... 90	TT 508..... 93
OWB 12..... 108	PES 002-58... 30	SBC 185..... 36	TC 505..... 90	
OWP 06..... 108	PFA 01..... 80	SBC 240..... 36	TC 506..... 90	U
OWP 08..... 108	PFC 01..... 80	SC 01..... 79	TC 5063..... 90	UAA 253..... 62
OWP 10..... 108	PGC 070..... 35	SCB 012..... 86	TC 508..... 90	UAG 253..... 62
OWP 12..... 108	PGC 095..... 35	SCB 016..... 86	TCA 08..... 66	UCC 050..... 77
OWS 06..... 108	PGC 185..... 35	SILFOS..... 81	TCG 08..... 66	UCC 070..... 77
OWS 08..... 108	PGC 240..... 35	SPA..... 79	TL 253..... 92	UCC 095..... 77
OWS 10..... 108	PGC 300..... 35	SPC..... 79	TMS 004..... 83	UWS 001..... 55
OWS 12..... 108	PRIMER..... 55	T	TP 121 BL..... 91	W
P	PRP 001..... 86	TA 121..... 96	TP 253 B..... 91	WDC 080..... 53
PCA 001..... 64	R	TA 203..... 96	TP 253 BL..... 91	WDC 120..... 53
PCA 002..... 64	RBB 006..... 104	TA 253..... 96	TP 253 G..... 91	WDC 140..... 53
PCC 001..... 64	RBB 010..... 104	TA 256..... 96	TP 253 GR..... 91	
PCC 002..... 64	RBB 016..... 104	TA 303..... 96	TP 253 GRLSF 92	
PCC 006..... 75	RBB 025..... 104	TA 406..... 96	TP 253 GY..... 92	
PCC 010..... 75	RBB 035..... 104	TA 506..... 96	TP 253 S..... 91	
PCC 016..... 75	RBB 050..... 104	TAP 121 BL... 96	TP 253 W..... 91	
PCC 025..... 75	RBC 010..... 23	TAP 203 BL... 96	TP 256 GR..... 91	
PCC 035..... 75	RBC 020..... 23	TAP 253 B..... 96	TP 256 GRLSF 92	
PCC 050..... 75	RBC 025..... 23	TAP 253 BL... 96	TP 503 GR..... 91	
PCC 070..... 75	RBC 032..... 23	TAP 253 G..... 96	TP 506 GR..... 91	
PCC 095..... 75	RBC 040..... 23	TAP 253 GR... 96	TP 506 GRLSF 92	
PCC 120..... 75	RBT 006..... 104	TAP 253 S..... 96	TT 121..... 93	
PCC 150..... 75	RBT 010..... 104	TAP 253 W..... 96	TT 123..... 93	
PCC 185..... 75	RBT 016..... 104	TC 121..... 90	TT 201..... 93	
PCC 240..... 75	RBT 025..... 104	TC 123..... 90	TT 203..... 93	
PCC 300..... 75	RBT 035..... 104	TC 201..... 90	TT 251..... 93	
PCP 006..... 75	RBT 050..... 104		TT 253..... 93	
			TT 254..... 93	

