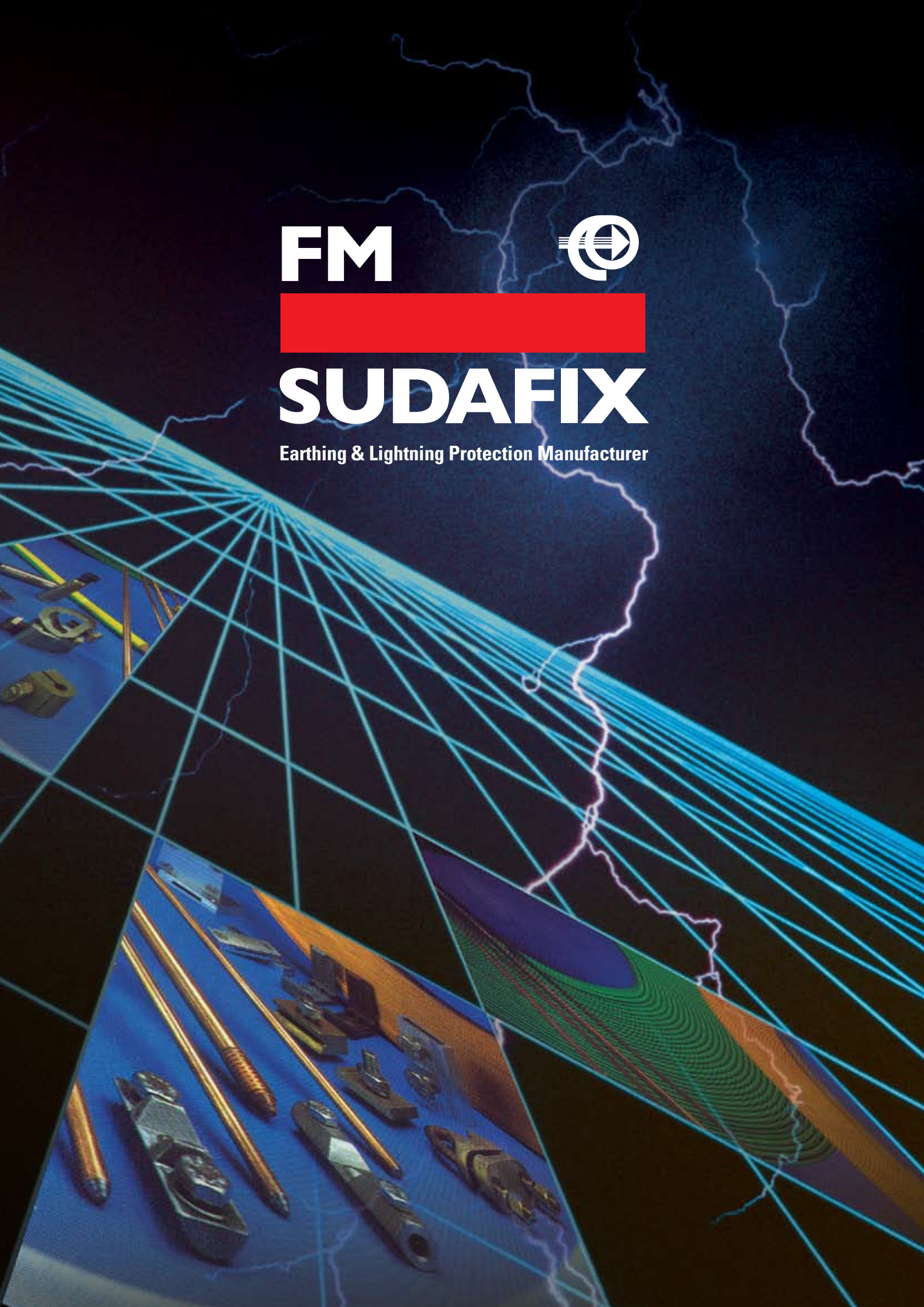




FM



SUDAFIX

Earthing & Lightning Protection Manufacturer



Company Introduction

FM Sudafix was originally founded in Derbyshire in the UK in 1993 to manufacture and market its own core product range of Earthing & Lightning protection material.

The company offers uncompromising high quality manufactured products at competitive prices. Our on going strengths and expertise lies in our understanding and anticipation of our customers needs for continuous improvement on all of our products.

We offer complete solutions which include quality Earthing & Lightning protection material to BS 6651 / BS 7430 and the new European standard BSEN 62305 and CENELEC BSEN 50164-1.

FM Sudafix is now the choice of specifiers, consultants and contractors from around the world.

We offer technical assistance and consultancy on design of Earthing & Lightning protection systems on both Faraday and ESE type systems.



Contents

FM Sudafix products are used by specialist Earthing and Lightning protection installers, electrical engineers and contractors. The following range of excellent quality products are a useful guide for specifying to the electricity authorities. Oil, gas and petrochemical sector, Industrial, commercial and civil construction projects, as well as the telecommunication sector.

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Lightning Protection

Flat tape system

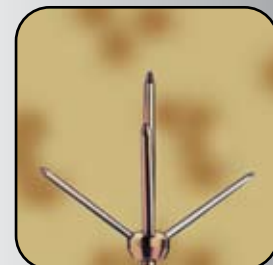
The following products are designed and manufactured using the highest quality materials, to enable the capture of the lightning effectively and provide an efficient path down to earth. All our products are of the highest quality and meet stringent recognised International standards.



Multi Point

For use with elevation rod only.

Product code	Rod size (mm)	Weight (kg) each
CMP600	15	0.28



Air Rod (Elevation)

Can be used with flat air terminal base, ridge saddle, rod brackets and rod to tape coupling to form part of the lightning protection system.

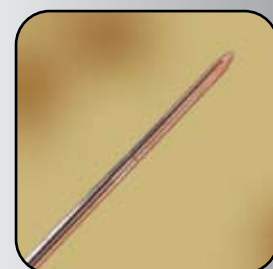
Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
ERC500	15	500	Copper	0.73
ERC1000	15	1000	Copper	1.51
ERC1500	15	1500	Copper	2.35
ERC2000	15	2000	Copper	3.14



Taper Pointed Air Rod

Can be used with flat air terminal base, ridge saddle, rod brackets and rod to tape coupling to form part of the lightning protection system.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
CAR0510	10	500	Copper	0.48
CAR1010	10	1000	Copper	1.01
CAR0515	15	500	Copper	0.75
CAR1015	15	1000	Copper	1.51
CAR2015	15	2000	Copper	3.00
CAR0520	20	500	Copper	0.90
CAR1020	20	1000	Copper	2.70
CAR2020	20	2000	Copper	6.70
AAR0510	10	500	Aluminium	0.19
AAR1010	10	1000	Aluminium	0.38
AAR0515	15	500	Aluminium	0.29
AAR1015	15	1000	Aluminium	0.53



Air Terminal Base

Used for supporting taper pointed air rod and elevation rod on flat roofs.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
ATBC15	15	-	Gunmetal	0.50
ATBC20	20	-	Gunmetal	0.50
ATBA15	15	-	Aluminium	0.16



Ridge Saddle

Used for supporting taper pointed air rod and elevation rod on ridges.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
RS115	15	-	Gunmetal	1.07



Rod Brackets – Side mounting

Used in conjunction with Rod to tape coupling for supporting taper pointed air rod or elevation rod on the side of buildings or chimneys.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
CBR015	15	-	Gunmetal	0.90
CBR020	20	-	Gunmetal	0.90
ABR015	15	-	Aluminium	0.28





Rod to Tape Coupling

Used in conjunction with side mounting rod brackets, this coupling screws onto the taper pointed air rod or elevation rod with the copper tape connected via the fixing screws.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
TTRC16	15	-	Gunmetal	0.23
TTRC20	20	-	Gunmetal	0.25
TTRA16	15	-	Aluminium	0.08



Plate Type Test Clamp

Used for four way connections, tee connections and straight through joints.

Product code	Conductor size	Material	Weight (kg) each
PCT400	25 x 3	Gunmetal	0.60



Screw Down Test Clamp

Used for four way connections, tee connections and straight through joints.

Product code	Conductor size	Material	Weight (kg) each
SDTC253	25 x 3	Gunmetal	0.70



Due to the ease of disconnection it is advisable to install this test clamp at a minimum height of 1.8mtr from ground level.

Oblong Test Clamp

Used for straight through joints and disconnecting the Lightning system for testing purposes.

Product code	Conductor size	Material	Weight (kg) each
OBC253	25 x 3	Gunmetal	0.29
OBC316	31 x 6	Gunmetal	0.36
OBC386	38 x 6	Gunmetal	0.40
OBC506	50 x 6	Gunmetal	0.60
OBA253	25 x 3	Aluminium	0.10
OBA506	50 x 6	Aluminium	0.15



Square Tape Clamp

Used for four way connections, tee connections and straight through joints.

Product code	Conductor size	Material	Weight (kg) each
STC253	25 x 3	Gunmetal	0.20
STC256	25 x 6	Gunmetal	0.40
STC506	50 x 6	Gunmetal	0.98
STA253	25 x 3	Aluminium	0.06
STA256	25 x 6	Aluminium	0.07
STA506	50 x 6	Aluminium	0.09



Bi Metallic Connector

Used for connecting aluminium to copper conductors.

Product code	Conductor size	Material	Weight (kg) each
BIM500	25 x 3	Stainless Steel	0.20
BIM800	25 x 3	Hex Stainless Steel	0.20
BIM400	8mm circular	Hex Stainless Steel	0.15
BIM700	25 x 3	Copper / Aluminium	0.20



B Bond

Used for bonding copper or aluminium tapes to flat metallic surfaces.

Product code	Conductor size	Material	Weight (kg) each
BBBC	25 x 3	Gunmetal	0.12
ABBC	25 x 3	Aluminium	0.06



RWP Bond

Used for bonding copper or aluminium tapes around pipes or hand rails.

Product code	Conductor size	Material	Weight (kg) each
BWPB	25 x 3	Gunmetal	0.12
AWPB	25 x 3	Aluminium	0.08



Watermain Pipe Bond

Used for bonding copper tapes around metallic pipes.

Product code	Conductor size	Material	Weight (kg) each
WPB010	25 x 3	Gunmetal	0.26



Metallic DC Tape Clips

Used for securing copper or aluminium tape to building.

Product code	Conductor size	Tape type	Material	Weight (kg) each
DCC203	20 x 3	Bare Copper	Gunmetal	0.06
DCC253	25 x 3	Bare Copper	Gunmetal	0.07
DCC254	25 x 4	Bare Copper	Gunmetal	0.07
DCC256	25 x 6	Bare Copper	Gunmetal	0.08
DCC313	31 x 3	Bare Copper	Gunmetal	0.09
DCC316	31 x 6	Bare Copper	Gunmetal	0.09
DCC383	38 x 3	Bare Copper	Gunmetal	0.12
DCC385	38 x 5	Bare Copper	Gunmetal	0.13
DCC386	38 x 6	Bare Copper	Gunmetal	0.14
DCC503	50 x 3	Bare Copper	Gunmetal	0.15
DCC504	50 x 4	Bare Copper	Gunmetal	0.15
DCC506	50 x 6	Bare Copper	Gunmetal	0.16
DCC600	25 x 3	PVC Copper	Gunmetal	0.10
DCC605	25 x 6	PVC Copper	Gunmetal	0.13
DCC610	50 x 6	PVC Copper	Gunmetal	0.26
DCA203	20 x 3	Bare Alum	Aluminium	0.02
DCA253	25 x 3	Bare Alum	Aluminium	0.03
DCA256	25 x 6	Bare Alum	Aluminium	0.04
DCA506	50 x 6	Bare Alum	Aluminium	0.05
DCA600	25 x 3	PVC Alum	Aluminium	0.04
DCA610	50 x 6	PVC Alum	Aluminium	0.05



Tape Clips

Used for securing copper or aluminium tape to building.

Product code	Conductor size	Tape type	Material	Weight (kg) each
TAPA203	20 x 3	Bare Alum	Aluminium	0.01
TAPA253	25 x 3	Bare Alum	Aluminium	0.01
TAPC203	20 x 3	Bare Copper	Copper	0.02
TAPC253	25 x 3	Bare Copper	Copper	0.02
TAPC254	25 x 3	PVC Copper	Copper	0.02
TAPC560	50 x 6	Bare Copper	Copper	0.03





Glazing Bar Holdfast

Used for securing copper or aluminium tape to glazing unit.

Product code	Conductor size	Tape type	Material	Weight (kg) each
GBHC	-	-	Gunmetal	0.11
GBHA	-	-	Aluminium	0.05



Non Metallic DC Clip

Used for securing copper or aluminium tape to building.

Product code	Conductor size	Colour	Tape type	Weight (kg) each
DC253BN	25 x 3	Brown	Bare Copper	0.01
DC253GY	25 x 3	Grey	Bare Alum	0.01
DC506BN	50 x 6	Brown	Bare Copper	0.02
DC25WH	25 x 3	White	PVC Tape	0.01
DC25BN	25 x 3	Brown	PVC Tape	0.01
DC25BL	25 x 3	Black	PVC Tape	0.01
DC25GN	25 x 3	Green	PVC Tape	0.01
DC25GY	25 x 3	Grey	PVC Tape	0.01
DC25ST	25 x 3	Stone	PVC Tape	0.01



Slate Holdfast – Non Metallic DC Clip

Used for securing copper or aluminium tape to roof tile when drilling is not permissible by attaching the aluminium tail to the wooden beam beneath the tile

Product code	Conductor size	Colour	Tape type	Weight (kg) each
HF253BN	25 x 3	Brown	Bare Copper	0.02
HF253GY	25 x 3	Grey	Bare Alum	0.02
HFP253BN	25 x 3	Brown	PVC	0.02
HFP253BL	25 x 3	Black	PVC	0.02
HFP253GY	25 x 3	Grey	PVC	0.02
HFP253ST	25 x 3	Stone	PVC	0.02



Back Plate Holdfast

Used when the conductor needs to be away from the building surface.
Metallic or non metallic DC clips can be attached to the holdfast.

Product code	Conductor size	Tape type	Material	Weight (kg) each
BPHF01	-	-	Gunmetal	0.35



Bare Copper Tapes

Used for lightning protection and earthing system.

Product code	Conductor size (mm)	Coil size per mtr	Weight (kg) per mtr
BCT1215	12.5 x 1.5	100	0.17
BCT1230	12 x 3	100	0.33
BCT2015	20 x 1.5	100	0.27
BCT2030	20 x 3	100	0.53
BCT2515	25 x 1.5	100	0.33
BCT2530	25 x 3	50	0.67
BCT2540	25 x 4	50	0.89
BCT2560	25 x 6	40	1.33
BCT3020	30 x 2	50	0.53
BCT3030	30 x 3	50	0.80
BCT3040	30 x 4	40	1.07
BCT3050	30 x 5	40	1.33
BCT3130	31 x 3	50	0.83
BCT3160	31 x 6	30	1.65
BCT3830	38 x 3	50	1.01
BCT3850	38 x 5	30	1.69
BCT3860	38 x 6	25	1.45
BCT4040	40 x 4	30	2.03
BCT4050	40 x 5	25	1.78
BCT4060	40 x 6	25	2.16
BCT5030	50 x 3	40	1.33
BCT5040	50 x 4	30	1.78
BCT5050	50 x 5	20	2.22
BCT5060	50 x 6	20	2.67



High conductivity annealed copper tape manufactured in accordance with BSEN 13601 previously BS1432 C101/C103.

PVC Covered Copper Tape

Used primarily as a down conductor, the PVC covering is used for aesthetic purposes to blend into the building exterior.

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
CTBL253	25 x 3	Black	50	0.77
CTGN253	25 x 3	Green	50	0.77
CTGY253	25 x 3	Grey	50	0.77
CTST253	25 x 3	Stone	50	0.77
CTWH253	25 x 3	White	50	0.77
CTBN253	25 x 3	Brown	50	0.77
CTGN256	25 x 6	Green	40	1.53
CTGN506	50 x 6	Green	20	2.95



High conductivity annealed copper tape manufactured in accordance with BSEN 13601 previously BS1432 C101/C103.

PVC covering 1mm thick PVC colours to BS6746.

Tinned Copper Tape

Product code	Conductor size	Coil size per mtr	Weight (kg) per mtr
TCT1215	25 x 1.5	100	0.17
TCT2530	25 x 3	50	0.67
TCT2560	25 x 6	40	1.33



High conductivity annealed copper tape manufactured in accordance with BSEN 13601 previously BS1432 C101/C103.

Tinned PVC Covered Copper Tape

Used for lightning protection and earthing system.

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
TCT2530BL	25 x 3	Black	50	0.77
TCT2530BR	25 x 3	Brown	50	0.77
TCT2530GR	25 x 3	Green	50	0.77
TCT2530GY	25 x 3	Grey	50	0.77
TCT2530ST	25 x 3	Stone	50	0.77
TCT2530WH	25 x 3	White	50	0.77
TCT2560BR	25 x 6	Brown	40	1.53
TCT2560GR	25 x 6	Green	40	1.53
TCT2560ST	25 x 6	Stone	40	1.53
TCT2560WH	25 x 6	White	40	1.53



High conductivity annealed copper tape manufactured in accordance with BSEN 13601 previously BS1432 C101/C103.
PVC covering 1mm thick PVC colours to BS6746.

Plain Copper Bar

Product code	Conductor size	Colour	Random Lgths	Weight (kg) per mtr
HDB2503	25 x 3	-	4mtr	0.67
HDB2506	25 x 6	-	4mtr	1.33
HDB3806	38 x 6	-	4mtr	1.45
HDB5006	50 x 6	-	4mtr	2.67
HDB5010	50 x10	-	4mtr	4.45



Manufactured in accordance with BS2874 C101/C103.

Other sizes and lengths are available upon request.

Tinned Copper Bar

Product code	Conductor size	Colour	Random Lghts	Weight (kg) per mtr
THDB	50 x 6	-	4mtr	2.67



Manufactured in accordance with BS2874 C101/C103.

Other sizes and lengths available upon request.

Bare Copper Braid

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
TFCB300	25 x 3.5	-	50	0.28



Manufactured in accordance with BS4109 C101.

Tinned Copper Braid

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
TFCB350	25 x 3.5	-	50	0.28



Manufactured in accordance with BS4109 C101.

Bare Aluminium Tape

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
BAT2030	20 x 3	-	100	0.17
BAT2530	25 x 3	-	50	0.21
BAT2560	25 x 6	-	50	0.42
BAT5060	50 x 6	-	50	0.84



Manufactured in accordance with BS2898-1350.

PVC Covered Aluminium Tape

Product code	Conductor size	Colour	Coil size per mtr	Weight (kg) per mtr
ATBN253	25 x 3	Brown	50	0.30
ATGY253	25 x 3	Grey	50	0.30
ATBL253	25 x 3	Black	50	0.30
ATW253	25 x 3	White	50	0.30
ATST253	25 x 3	Stone	50	0.30
ATGN253	25 x 3	Green	50	0.30



Manufactured in accordance with BS2898-1350.
PVC covering 1mm thick PVC colours to BS6746.

Bare Stranded Copper Conductor

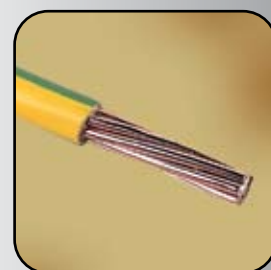
Product code	Conductor size	Stranding	Weight per (kg) per mtr
CW006	6sqmm	7 / 1.04	0.05
CW016	16	7 / 1.70	0.15
CW025	25	7 / 2.14	0.23
CW035	35	7 / 2.52	0.32
CW050	50	19 / 1.78	0.43
CW070	70	19 / 2.14	0.62
CW095	95	19 / 2.52	0.86
CW120	120	37 / 2.03	1.09
CW150	150	37 / 2.25	1.33
CW185	185	37 / 2.52	1.67
CW240	240	61 / 2.25	2.20
CW300	300	61 / 2.52	2.76
CW400	400	61 / 2.85	3.53



Copper manufactured in accordance with BS6360.

PVC Covered Stranded Copper Conductor

Product code	Conductor size	Stranding	Weight per (kg) per mtr
GYC006	6sqmm	7 / 1.04	0.06
GYC016	16	7 / 1.70	0.18
GYC025	25	7 / 2.14	0.28
GYC035	35	7 / 2.52	0.38
GYC050	50	19 / 1.78	0.51
GYC070	70	19 / 2.14	0.72
GYC095	95	19 / 2.52	1.00
GYC120	120	37 / 2.03	1.20
GYC150	150	37 / 2.25	1.50
GYC185	185	37 / 2.52	1.90
GYC240	240	61 / 2.25	2.50
GYC300	300	61 / 2.52	3.00
GYC400	400	61 / 2.85	3.95



Copper manufactured in accordance with BS6360.
PVC insulation to BS6004.



Earthing

Technical information on copper bonded ground rods:

The earth rods meet all the requirements of the world's most rigorous standards, like UL-467, ANSI C-33-8 and BS6651.

SAE 1010/1020 carbon steel core coated with an electrolytical copper layer, which is minimum 99.9% pure with no traces of zinc.

The copper layer is bonded to the steel core through an electrolytical cladding process that ensures a perfect and even bonding between the steel and the copper. The rod finishing is brilliant, free of imperfections or orange peeling. The copper layer, whose minimum thickness is 254microns (10mils), is individually and rigorously controlled by a modern set of electronic gauges. Upon clients request, we can deliver the ground rods with any different copper layer thickness.

The threaded earth rods are threaded on both ends to allow rod-to rod connections with the use of the FM Sudafix couplings.

The earth rods are largely used on earthing projects at electric power plants, transmission and distribution networks, substations, telephone networks, data processing systems and in all cases where protection to life and equipment is of paramount importance.

Main features of copperbonded sectional earth rods:

Vailable in diameters of 5/8", 3/4" Rod length's range from 1.2m(4ft) to 3.0m(10ft).

High tensile strength of 600N/mm² (not lower then 75,000psi).

Minimum 0.250mm (250microns) copper coating.

Life expectancy of 30years and more.

Highly resistance to corrosion.

Cold-rolled threads (UNC-2A) at each end of the rod for joining with couplings.

Cold-rolled threads give more strength than cut-threads.

This thread treatment also assures continuous conductivity and protection of the steel core.

Standards UL467, BS6651, ANSI-C33.8.

Earth Rod – Threaded Copperbond Earth Rod

Product code	Thread size (x)	Shank dia (y) (mm)	Length (mm)	Weight (kg) each
CBR1204	1/2	12.7	1200	1.18
CBR1205	1/2	12.7	1500	1.55
CBR1206	1/2	12.7	1800	1.76
CBR1604	5/8	14.2	1200	1.53
CBR1605	5/8	14.2	1500	1.88
CBR1606	5/8	14.2	1800	2.29
CBR1607	5/8	14.2	2000	2.51
CBR1608	5/8	14.2	2400	3.00
CBR1610	5/8	14.2	3000	3.79
CBR2004	3/4	17.2	1200	2.19
CBR2005	3/4	17.2	1500	2.73
CBR2006	3/4	17.2	1800	3.27
CBR2007	3/4	17.2	2000	3.62
CBR2008	3/4	17.2	2400	4.35
CBR2010	3/4	17.2	3000	5.44



Fittings – Threaded Couplings

Product code	Rod size	Material	Weight (kg) each
CPL12	1/2	Aluminium Bronze	0.09
CPL16	5/8	Aluminium Bronze	0.08
CPL20	3/4	Aluminium Bronze	0.13



Fittings – Driving Studs

Product code	Rod size	Material	Weight (kg) each
DS12	1/2	High tensile steel	0.05
DS16	5/8	High tensile steel	0.08
DS20	3/4	High tensile steel	0.12



Earth Rod – Unthreaded Copperbond Earth Rod

Product code	Dia (mm)	Length (mm)	Weight (kg) each
CBR1004U	9.5	1200	0.62
CBR1204U	12.7	1200	1.18
CBR1205U	12.7	1500	1.55
CBR1206U	12.7	1800	1.76
CBR1604U	14.2	1200	1.53
CBR1605U	14.2	1500	1.88
CBR1606U	14.2	1800	2.29
CBR1607U	14.2	2000	2.51
CBR1608U	14.2	2400	3.00
CBR1610U	14.2	3000	3.79
CBR2004U	17.2	1200	2.19
CBR2005U	17.2	1500	2.73
CBR2006U	17.2	1800	3.27
CBR2007U	17.2	2000	3.62
CBR2008U	17.2	2400	4.35
CBR2010U	17.2	3000	5.44



Fittings – Coupling for Unthreaded Rod

Product code	Rod size (mm)	Material	Weight (kg) each
CPL12U	12.7	Aluminium Bronze	0.09
CPL16U	14.2	Aluminium Bronze	0.08
CPL20U	17.2	Aluminium Bronze	0.13



Fittings – Driving Head for Unthreaded rod

Product code	Rod size (mm)	Material	Weight (kg) each
DS12U	12.7	High tensile steel	0.25
DS16U	14.2	High tensile steel	0.22
DS20U	17.2	High tensile steel	0.27



Earth Rod - Solid Copper Earth Rod

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
SCR1512	15	1200	Copper	1.88
SCR1615	16	1500	Copper	2.34
SCR1618	16	1800	Copper	2.80
SCR1624	16	2400	Copper	3.74
SCR1630	16	3000	Copper	4.70
SCR2012	20	1200	Copper	3.35
SCR2015	20	1500	Copper	3.90
SCR2018	20	1800	Copper	4.70
SCR2024	20	2400	Copper	6.20
SCR2030	20	3000	Copper	7.80



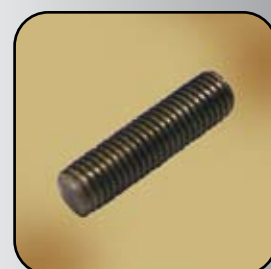
Driving Head

Product code	Rod size (mm)	Material	Weight (kg) each
CDS15	15	Steel	0.02
CDS20	20	Steel	0.05



Coupling Dowel

Product code	Rod size (mm)	Material	Weight (kg) each
DOW10	15/20		0.01



Spikes

Product code	Rod size (mm)	Material	Weight (kg) each
SPK15	15	Steel	0.02
SPK20	20	Steel	0.04



Earth Rod – Stainless Steel Earth Rod

Used in areas where ground conditions are galvanic and corrosive.

Product code	Rod size (mm)	Length (mm)	Material	Weight (kg) each
SSR16	16	1200	Stainless Steel	1.90



Manufactured from Austenitic stainless steel to BS970 grade 316 S12. Other grades of stainless steel and sizes are available upon request.

Driving Head

Product code	Rod size (mm)	Material	Weight (kg) each
CDS15	15	Steel	0.02



Manufactured from steel to BS970 grade 070M20.

Coupling Dowel

Product code	Rod size (mm)	Material	Weight (kg) each
SSD10		Stainless Steel	0.01





Spikes

Product code	Rod size (mm)	Material	Weight (kg) each
SPK15	15	Steel	0.02



Rod to Tape Clamp Type A

Used for terminating tape to earth rod.

Product code	Rod size (mm)	Max Conductor size (mm)	Weight (kg) each
RTC1220	16	26 x 12	0.15
RTC1220	20	26 x 10	0.15
RTC1640	16	40 x 12	0.24
RTC1651	16	51 x 8	0.31
RTC2051	20	51 x 12	0.31
RTC2526	16	26 x 18	0.23
RTC2526	20	26 x 10	0.23
RTC2526	25	26 x 10	0.23



Rod to Cable Clamp Type JAB

Used for terminating cable to earth rod.

Product code	Rod size (mm)	Conductor size	Weight (kg) each
GC10	9.5	6 to 35sqmm	0.03
GC12	12.7	16 to 50sqmm	0.05
GC16	16	16 to 70sqmm	0.06
GC20	20	16 to 95sqmm	0.08
GC25	25	70 to 120sqmm	0.14



U Bolt Rod Clamp

Used for terminating tape to earth rod.

Product code	Rod size (mm)	Conductor size (mm)	Weight (kg) each
UB16	16	-	0.20
UB20	20	-	0.20
UB25	25	-	0.24



U Bolt Rod Clamp with Plate

Used for terminating tape to earth rod.

Product code	Rod size max (mm)	Conductor size (mm)	Weight (kg) each
UB16PL	16	25 x 3	0.36
UB20PL	20	25 x 3	0.38
UB25PL	25	25 x 3	0.40
UB31PL	31	25 x 3	0.44
UB38PL	38	25 x 3	0.40
UB50PL	50	25 x 3	0.80



Rod to Cable Clamp Type GUV

Used for terminating cable to earth rod

Product code	Rod size (mm)	Conductor size	Weight (kg) each
GUV16070	16-20	16 to 70sqmm	0.39
GUV70185	16-20	70 to 185sqmm	0.39



Rod to Cable Lug Clamp

Used for terminating a cable lug to earth rod.

Product code	Rod size (mm)	Rod Type	Weight (kg) each
RCC10	9.5	Copperbond Un Threaded	0.09
RCC58	5/8	Copperbond Threaded	0.34
RCC15	15	Solid Copper	0.34
RCC16	16	Solid Copper/Stainless Steel	0.34
RCC34	3/4	Copperbond Threaded	0.34
RCC20	20	Solid Copper	0.34



Concrete Inspection Pit

Product code	Pit size (mm)	Material	Weight (kg) each
PIT01	325 x 325 x 145	Concrete	27



5 Hole Earth Bar

Use with concrete pit.

Product code	Rod size (mm)	Material	Weight (kg) each
PIT06		Copper	0.46



7 Hole Earth Bar

Use with concrete pit.

Product code	Rod size (mm)	Material	Weight (kg) each
PIT07		Copper	0.50



Plastic Inspection Pit – Heavy duty

Designed to withstand 6000kg static load and can be used in most commercial and industrial applications.

Product code	Pit size (mm)	Material	Weight (kg) each
PIT03	350 x 350 x 225		3.55

Material:
Base – Polypropylene
Lid - GRP



Solid Copper Earth Plate

Product code	Plate size (mm)	Material	Weight (kg) each
EMC6615	600 x 600 x 1.5	Copper	5.00
EMC663	600 x 600 x 3	Copper	9.27
EMC9915	900 x 900 x 1.5	Copper	11.21
EMC993	900 x 900 x 3	Copper	21.74

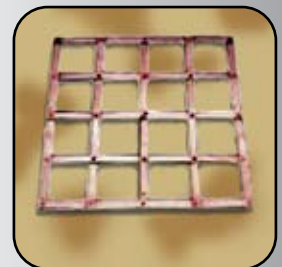
Manufactured from pure electrolytic copper to BS2874 C101.



Lattice Copper Earth Plate

Product code	Plate size (mm)	Material	Weight (kg) each
EML663	600 x 600 x 3	Copper	3.98
EML993	900 x 900 x 3	Copper	7.30

Manufactured from 25 x 3mm high conductivity annealed copper tape manufactured in accordance with BSEN 13601 previously BS1432 C101/C103.



Earth Point

Product code	Hole	Material	Weight (kg) each
EP04	4 Hole	Gunmetal	0.41
EP02	2 Hole	Gunmetal	0.28
EP01	1 Hole	Gunmetal	0.12



Earth Points with Welded Tails (500mm lg welded tail)

Product code	Hole	Material	Weight (kg) per each
EPT04	4 Hole	Gunmetal	0.90
EPT02	2 Hole	Gunmetal	0.75
EPT01	1 Hole	Gunmetal	0.80



All tails are supplied welded.
Other tail lengths and conductor sizes are available upon request.

Earth Boss

Product code	Size (mm)	Material	Weight (kg) each
EBOS01	50 x 50		0.80

Body: Mild steel.
Fittings: M10 stainless steel stud and 2 nuts.



Disconnecting Link

Product code	Terminations	Disc Links	Weight (kg) each
EBDL01	-	-	0.82



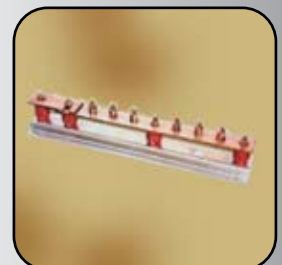
Standard Earth Bar

Product code	Terminations	Disc Links	Weight (kg) each
EB60-6	6	-	1.84
EB60-8	8	-	1.88
EB60-10	10	-	2.00
EB60-12	12	-	2.25
EB60-14	14	-	2.45
EB60-16	16	-	3.00
EB60-20	20	-	3.50



Standard Earth Bar with Single Disc Link

Product code	Terminations	Disc Links	Weight (kg) each
EB61-6	6	1	3.12
EB61-8	8	1	3.25
EB61-10	10	1	3.55
EB61-12	12	1	3.65
EB61-14	14	1	3.75
EB61-16	16	1	4.00
EB61-20	20	1	4.25





Standard Earth Bar with Twin Disc Link

Product code	Terminations	Disc Links	Weight (kg) each
EB62-6	6	2	4.36
EB62-8	8	2	4.55
EB62-10	10	2	4.75
EB62-12	12	2	4.95
EB62-14	14	2	5.25
EB62-16	16	2	5.45
EB62-20	20	2	5.65



Material:

Hard drawn copper bar – Grade BS2874 C101 / C103

Fittings – Brass or stainless steel

Channel Base – Mild steel zinc plated

Insulators – Reinforced polyester

Insulator c/w Stud and Nuts

Product code	Size (mm)	Material	Weight (kg) each
INS01		Reinforced Polyester	0.22



Insulator only

Product code	Size (mm)	Material	Weight (kg) each
INS02		Reinforced Polyester	0.14



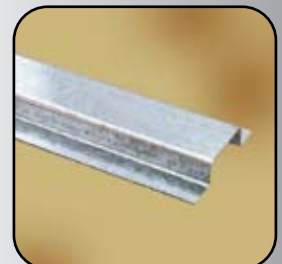
Flexible Copper Braid Bonds

Product code	Size (mm)	Material	Weight (kg) each
FEB02	25 x 3.5 x 200	Copper	0.05
FEB03	25 x 3.5 x 300	Copper	0.08
FEB04	25 x 3.5 x 400	Copper	0.12



Anti Vandal Guard (Galvanised)

Product code	Length (mm)	Material	Weight (kg) each
AVG3.0	3000	Mild steel Galv	2.9



Puddle Flange

Product code	Size	Material	Weight (kg) each
PFC001	600 lg x 150 w	Copper	1.70
PFA001	600 lg x 150 w	Aluminium	0.55



Moisture Retaining Clay (Bentonite)

Product code	Material	Weight (kg) per bag
BENTP	Powder	25
BENTG	Granular	25



Earthing Compound (Marconite)

Product code	Material	Weight (kg) per bag
MARCO		25



Denso Tape

Product code	Coil size	Material	Weight (kg) per coil
DENSO	50mm wide x 10mtr lg	-	0.76



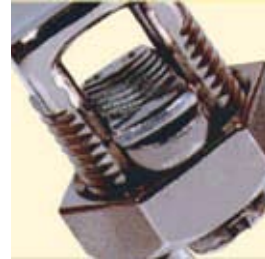
Silfos

Product code	Coil size	Material	Weight (kg) per coil
SILFOS	50mm wide x 0.12mm thk x 8mtr lg	-	0.50



FM

SUDAFIX



Conductors & Other Products Available Upon Request

Conductors:

LSF covered tape
Lead covered tape
Bare solid circular (8mm) copper and aluminium
PVC covered solid (8mm) copper and aluminium (option of colours)
Hard drawn copper stranded conductor

Other products:

Suda-weld exothermic welding products
Early streamer emission (ESE) to NFC-17-102 (Apave approved)
C Crimps – Copper
Copper compression lugs bare or tin plated
Hexagon head setscrews, nuts, washers spring & plain
Round head and CSK woodscrews
Plastic wall plugs

CIRRUS ESE

CIRRUS testing

The CIRRUS lightning rod was tested for many months in the Electrical Engineering high voltage laboratories of CEGELY (UMR CNRS 5005) in Lyon France. Qualification tests have been witnessed by APAVE.



CIRRUS during tests at Cegely Lyon

Qualification tests have been carried out according to the NFC 17-102 standard dated July 1995 with a protocol validated by APAVE

The aim of these tests is to test early streamer emission terminals (ESE). To get a result which has a statistical meaning 100 shots are made on a reference rod and then 100 shots are made on the ESE under test. The mean value of both 100 shots series (reference rod and ESE) are calculated, are positioned on the curve used during test and then are transposed on a reference curve given in the standard. The time difference obtained between the transposed values is, by definition, the triggering time advance ΔT_b of the ESE under test.

Summary of the test report (an official test report is available).

	Reference rod (s)	CIRRUS (s)	ΔT_b (s)
CIRRUS SLc 25	490	410	80
CIRRUS SLc 45	490	420	70
CIRRUS SLc 60	590	440	150

APAVE is an official control body for the electrical industry as well as other industries. APAVE group have office in France and in foreign countries : Germany, Cameroon, Congo, Ivory Coast, Spain, Great Britain, Hungary, Italy, Lebanon, Morocco, Switzerland, Tunisia, Viet-nam and Unites States. APAVE group has also many representative in other countries.

The CIRRUS range

Lightning is a statistical natural phenomenon and our experience lead us to think that tolerances ought to be applied to the various parameters used in the standard.

For example, the spread in results, both for the ESE and the reference rods, are just taken into account by the mean value of both distributions. However, the statistical spread of the results need also to be considered, especially because the two curves obtained as a result of the 100 shots have a common part. The maximum time measured for the ESE, compared to the mean value of the ESE and of the reference rod is a significant parameter. Safety margins have then been incorporated in the measured values obtained during tests (triggering time advance) to be sure the user will be confident in the lightning protection provided to his building.



CIRRUS SLc25



CIRRUS SLc45



CIRRUS SLc60

CIRRUS	Measured triggering time advance ΔT_b (s)	Spread in measured results in %	Safety margin in %	Used triggering time advance ΔT (s)
SLc 25	80	30	70	25
SLc 45	70	15	35	45
SLc 60	150	15	Non applicable	60*

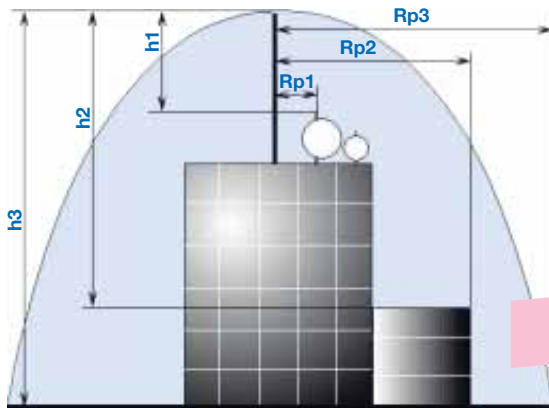
* a general consensus limits this value at 60 s

Remark : it can be seen clearly that the sharper terminals (SLc25 and SLc60) have results which have been much more degraded than the SLc45 one. This is mainly because of the sharper terminals which lead to bigger spread in results. This confirms in laboratory results obtained in the field and this support the use of SLc45 as the preferred CIRRUS. However, with the margin used, both SLc25 and SLc60 can be used with the same level of confidence than SLc45.

CIRRUS : radius of protection and installation rules

NP : level of protection calculated as per annex B of NFC 17-102 standard
h (m) : height of the lightning rod above the plane to be protected (at least equal to 2 m).

h (m)	NP1			NP2			NP3		
	SLc 25	SLc 45	SLc 60	SLc 25	SLc 45	SLc 60	SLc 25	SLc 45	SLc 60
2	17	26	32	23	34	40	26	36	44
3	25	38	48	34	48	59	39	50	65
4	34	50	64	46	64	78	52	72	87
5	42	63	79	57	81	97	65	89	107
6	43	63	79	58	81	97	66	90	107
10	44	64	79	61	83	99	69	92	109
15	45	65	80	63	85	101	72	95	111
20	45	65	80	65	86	102	75	97	113
45	45	65	80	70	90	105	84	104	119
60	45	65	80	70	90	105	85	105	120



The protection radii R_p (m) are evaluated according to 2.2.3.2 of the NFC 17-102 standard, with the following formula for heights $h \geq 5$ m :

$$R_p = \sqrt{h \cdot (2 \cdot D - h) + \Delta T \cdot (2 \cdot D + \Delta T)}$$
 where
 h is the height (in m) of the rod above the considered surface
 ΔT (in s) is obtained during the test
 D (in m) depends on the selected level of protection
 (D = 20 for NP1, D = 45 for NP2 and D = 60 for NP3).

For $h < 5$ m abaci given in NFC 17-102 have to be used.

Installation of the CIRRUS lightning rod must fulfil the rules given in the NFC 17-102 July 1995 standard.

CIRRUS lightning rods and associated masts

Code	Designation		Weight (kg)
SLc 25/2	CIRRUS 25, stainless steel 2m	28mm (clamp included)	3,6
SLc 45/2	CIRRUS 45, stainless steel 2m	28mm (clamp included)	3,5
SLc 60/2	CIRRUS 60, stainless steel 2m	28mm (clamp included)	3,6
MA33/2	Stainless steel extension mast 2m	33mm (4 stainless steel collars included)	4
MA33/3	Stainless steel extension mast 3m	33mm (6 stainless steel collars included)	6
MA40/2	Stainless steel extension mast 2m	40mm (4 stainless steel collars included)	6
MA40/3	Stainless steel extension mast 3m	40mm (6 stainless steel collars included)	9
MA48/2	Stainless steel extension mast 2m	48mm (4 stainless steel collars included)	7,5
MSA40/3	Antenna st. steel special mast 3m	40mm (6 stainless steel collars included)	9,5
ELC-131D	Cirrus tester + accessories		0,7

CONDITIONS OF SALE

Alterations:

Sudafix reserve the right to change their catalogue without any prior notice. They also reserve the right to alter the design, materials, dimensions, weights of their products without notice.

Sudafix does not accept any liability for the incorrect use of its products or from failure to follow its instructions according to BS6651 the code of practice for Lightning protection and BS7430 the code of practice for Earthing protection.

Conditions of sales: Available upon request.

LME Base rates: To be requested at time of enquiry or order.





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