Metallic Systems

S Conduit

Technical Characteristics

Conforms to	BSI Kitemark KM-35161 Low voltage directive Inherent Low Fire Hazard
Approvals and Standards	CE
Degree of mechanical protection	Very high flexibility & fatigue life
Degree of protection	IP40 - with type S fittings
UV protection	Very High
Finish	Natural material
Application	Indoors / Outdoors - light industrial, buildings

Normal operating temperature range

Application	Min Temp	Max Temp
Static	**- 50°C**	**+300°C**
Dynamic	**- 45°C**	**+250 °C**

For use with - Fitting range	Adaptasteel - Type A ,B, E, and F

Fire performance

Test Standard	Performance Rating
EN45545	ILFH
NFF16-101	ILFH
LUL-1085	ILFH
BS6855	ILFH
DIN 5510-2	ILFH

(See Fire testing data for fire performance overview)

Testing data	Click or See pages 3 & 4
Type of material	Galvanised steel

Image



Cable Management Products Ltd.
CMG House - Station Road - Coleshill - B46 1HT - United Kingdom
Tel: +44(0)1675 468 222 - Fax: +44(0)1675 464 930
Technical Support e-mail: cmg.conduitsystems@tnb.com - www.adaptaflex.co.uk

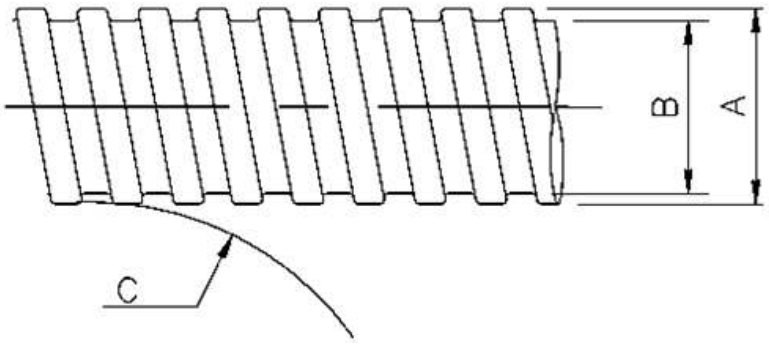
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Technical & Dimensional Data

Conduit size metric **(mm)**	10	12	16	20	25	32	40	50	63	75
Conduit size US trade **(inches)**	1/4”	5/16”	3/8”	1/2”	3/4”	1”	1 1/4”	1 1/2”	2”	2/1/2”
Part code	S	S	S	S	S	S	S	S	S	S
Coil length **(m)**	25/50	10/25/50	10/25/50	10/25/50	10/25/50	10/25	10/25	10/25	10	10
A - Outside diameter **(mm)**	9.0	13.0	16.0	20.5	25.0	32.0	42.5	53.0	62.5	77.0
B - Inside diameter **(mm)**	6.8	10.3	13.0	16.9	21.4	28.1	37.7	48.4	57.5	70.0
C - Static bend radius **(mm)**	25	30	35	45	55	60	80	90	115	150
Average weight **(KG/100m)**	10.0	11.6	18.2	23.6	28	46	74.9	93.9	96.0	152.5
For ordering code add coil length to part code - e.g S25/25M										



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BS EN 61386 Clarification

	Fitting	Compression	Impact	Min temp	Max temp	bending	electrical	IP solids	IP water	Corrosion	Tensile	Non-flame Propogating	Suspended load
S	S	4	4	5	6	4	0	4	0	1	4	1	5

Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength @ 23°C	IEC61386-1	<25% crush >90% recovery	>1500N
Crush Strength @ 23 °C	AFX norm C1989	10% Crush, Instantaneous Value	2200N
Impact Strength @ 23 °C	IEC61386-1	No Cracks <20% deformation	>20J
Impact Strength @-25 °C	IEC61386-1	No Cracks. <20% deformation	>6J
Tensile Strength	IEC61386-1	With S Type Fitting	>1000N
Tensile Strength	AFX norm T1987	Ultimate pull-out of S-Type Fitting	1450N
Dynamic Bend radius @ -45 °C	IEC61386-23	5000 cycles minimum	4xOD

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temperature	IEC61386-23	Dynamic 5000 cycles	-45°C
Maximum Temperature	IEC61386-23	Dynamic 5000 cycles	250°C
Minimum Static		Permanent Use	-50°C
Maximum Static		Permanent Use	300°C

Chemical Resistance Chart

Key:

Suitable :

Limited Suitability :

Unsuitable :

Not Tested :

Astm No.1	Diesel oil	Methyl Bromide	Sulphur Dioxide (Gas)
Astm No.2	Diethylamine	MEK	Sulphuric Acid (10%)
Astm No.3	Ethanol	Nitric Acid (10%)	Sulphuric Acid (70%)
Acetic Acid (10%)	Ether	Nitric Acid (70%)	Toluene
Acetone	Ethylamine	Oxalic Acid	Transformer Oil
Aluminium Chloride	Ethylene Glycol	Ozone (Gas)	1,1,1-Trichloroethane
Aniline	Ethyl Ethanoate	Paraffin oil	Trichloroethylene
Benzaldehyde	Freon 32	Petrol	Turpentine
Benzene	Hydrochloric Acid (10%)	Phenol	Vegetable Oil
Carbon tetrachloride	Hydrochloric Acid (36%)	Sea Water	Vinyl Acetate
Chlorine water	Hydrogen Peroxide (35%)	Silver Nitrate	Water
Chloroform	Hydrogen Peroxide (87%)	Skydrol	White Spirit
Citric Acid	Lactic Acid	Sodium Chloride	Zinc Chloride
Copper Sulphate	Lubricating oil	Sodium Hydroxide (10%)	
Cresol	Methanol	Sodium Hydroxide (60%)	

The information above is given as a guide only and is based on published technical data and experience. The chemical resistance of the above products is dependant on factors such as chemical exposure, concentration of the chemical and temperature. The above chemicals are valid for a temperature of 23°C. Use of the above table is at the users own discretion and risk. Those using it must satisfy themselves that their application presents no health and safety risks. The end user should assess compatibility with their application and contact Thomas & Betts for further information.

ADHERENCE TO THE CURRENT WIRING REGULATIONS BS7671 OR NEC WIRING REGULATIONS (FOR USA) IS STRONGLY ADVISED.
MINIMUM BEND RADIUS FOR FLEXING IS DEPENDANT UPON MINIMUM TEMPERATURE, BENDING FREQUENCY AND CHEMICAL ENVIRONMENT.

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Flammability

Test Type	Method / Standard	Requirement	Result	Unit
Oxygen Index	ISO 4589-2	% Oxygen to support combustion	ILFH	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	ILFH	°C
Flammability	UL94	Vertical (V0, V2) or Horizontal (HB)	ILFH	
Flammability	IEC 61386-1	1Kw Burner @ 45°	ILFH	Pass/Fail
FTI	ISO 4589-3		ILFH	

Smoke

Test Type	Method / Standard	Requirement	Result	Unit
Smoke Density	ATS1000	In flaming mode <100 @ 4 mins	ILFH	
Smoke Density	ATS1000	In non flaming mode <100 @ 4 mins	ILFH	
Smoke Density	BS6853	A <0.02	ILFH	
Smoke Density	ASTM E-662	Flaming mode D_S Max	ILFH	
Smoke Density	ISO - 5659-2	D_S Max	ILFH	

Toxicity

Test Type	Method / Standard	Requirement	Result	Unit
Halogen Free	LUL	<0.5%	ILFH	Yes/No
Phosphorous Free	LUL	<0.5%	ILFH	Yes/No
Sulphur Free	LUL	<0.5%	ILFH	Yes/No
NFX 70-100	NFX70 - 100 1 / 2	CIT_{NLP}	ILFH	N/A

Fire Performance Overview

Property	Low Fire Hazard	Enhanced Low Fire Hazard	Super Low Fire Hazard	Inherent Low Fire Hazard
	LFH	EFLH	SLFH	ILFH
Oxygen Index ISO4589	32% ≥ OI ≥ 28%	OI ≥ 32%	OI ≥ 32%	Inherent Low Fire
BS6853 Smoke Density 3m³	0.02 ≤ A_o ≤ 0.03	0.0005 ± A_o ≤ 0.02	A_o ≤ 0.005	Hazard i.e
Zero Halogen	✓	✓	✓	Type , S, SS
Zero Phosphorus	✓	✓	✓	Metallic Conduit & Fit-
Zero Sulpher	✓	✓	✓	tings
NFF16-102	I3F2	I2F2	I2F1	
EN45545-2	HL2	HL3	HL3	

Pre Test Conditions

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	EN50086/IEC61386	23 (^{0}C)	50 (%)

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