

Non-Metallic Systems

CP Standard Weight Conduit



Technical Characteristics

Conforms to BSI Kitemark KM-35161
 Low voltage directive
 NFF16-101/2 I4, F1
 Deutsche Bahn S4,SR2, ST2

Approvals and Standards



Degree of mechanical protection Very High flexibility & fatigue life

Degree of protection IP40 - Adapting
 IP65 - N/A
 IP66 - Adaptalok, ATS or Adaptaseal
 IP67 - Adaptalok + ALS Seal or ATS, Adaptaseal
 IP68 - Adaptalok + ALS Seal or ATS, Adaptaseal
 IP69k - Adaptalok + ALS Seal or ATS, Adaptaseal

UV protection Very High

Finish Black (BL)

Application Indoors / Outdoors, low temperature flexing, High Impact resistance

Normal operating temperature range	Application	Min Temp	Max Temp
	Static	- 50°C	+135°C
	Dynamic	- 25°C	+150 °C

For use with - Fitting range [Adaptalok](#) & [ATS](#), [Adaptaseal](#) and [Adapting](#) fittings

Fire performance	Test Standard	Performance Rating	
	IEC 61386	Pass	Self Extinguishing & Halogen Free
	NFF16-101 /2	I4 / F1	
	ISO 4589	30.5 %	
	TS45545	(R23/R24) HL2	
	UL94	V2	



Testing data Click or See pages [3](#) & [4](#)

Type of material Modified Co-Polyester - flame retardant - heat stabilised

Image



Non-Metallic Systems

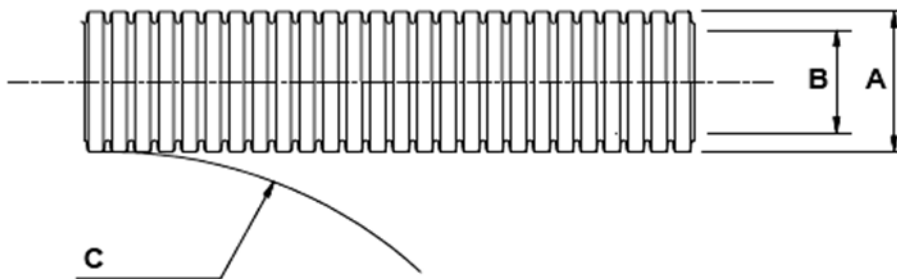
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Technical & Dimensional Data

Part No.	Conduit Size			Dimensions				Average Weight (KG/100m)
	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	(A) Outside Diameter	(B) Inside Diameter	(C) Min. Bend Radius	Reel Length (m)	
CPFM13	13mm	10	Fine	13.0mm	9.5mm	25mm	50	3.9
CPFM16	16mm	13	Fine	15.8mm	11.3mm	30mm	50	5.3
CPFM21	21mm	17	Fine	21.2mm	16.0mm	35mm	50	8.4
CPCM28	28mm	23	Coarse	28.5mm	21.3mm	45mm	50	14.0
CPCM34	34mm	29	Coarse	34.5mm	27.2mm	55mm	50	17.3
CPCM42	42mm	36	Coarse	42.5mm	34.2mm	60mm	25	20.6
CPCM54	54mm	48	Coarse	54.5mm	46.0mm	70mm	25	33.0

To order quote part number, colour & reel length, e.g CPFM21/BL/50M



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BS EN 61386 Classification

	Fitting	Compression	Impact	Min temp	Max temp	bending	electrical	IP solids	IP water	Corrosion	Tensile	Non-flame Propogating	Suspended load
CP	ATS	1	4	4	5	4	0	6	7	-	1	1	0

Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength	IEC61386	<25% crush >90% recovery	>125N
Tensile Strength	IEC61386	Pull off of fitting minimum value	>100N
Impact Strength @-25°C	IEC61386	No Cracks <20% deformation min value	>6J
Impact Strength @ 23°C	IEC61386	-	-
Dynamic Bend radius @-45 °C	IEC61386	5000 cycles minimum	6xOD

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temp	IEC61386	Dynamic 5000 cycles	-45°C
Maximum Short Term Temp	IEC61386	Dynamic 3000 hours, 5000 cycles	175°C
Minimum Static Temp	IEC61386	Permanent Use (30,000) Hours	-50°C
Maximum Static Temp	IEC61386	Permanent Use (30,000) Hours	150°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 >34%	30.5	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	960	°C
Flammability	UL94	Vertical (V0) or Horizontal (HB)	V2	HB/V0
Flammability	IEC 61386	Vertical Burn	Pass	Pass/Fail
Flammability	IEC 61386	Self extinguishing <30s	4	Seconds
Ignition Rating	NF F16-101/2	Glow Wire & oxygen index	I4	-

Smoke

Test Type	Method / Standard	Requirement	Result	Unit
Fume Rating	NF F16-101/2	Smoke & Toxicity	F1	-
Smoke Density	BS6853:1999	-	0.062	Absorbance
-	-	-	-	-

Toxicity

Test Type	Method / Standard	Requirement	Result	Unit
Halogen Free	CEI20-37 Part 2	≤0.30%	0.0	%
Toxicity	TS45545-2	R23 - HL3 <0.75 HL2 <0.9 HL1 <1.2	0.78 (HL2)	CIT (NLP)
Toxicity	CEI 20-37/7	≤2	1.7	-
-	-	-	-	-
-	-	-	-	-

Fire Performance Overview

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

Pre Test Conditions

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	EN50086/IEC61386	23 (°C)	50 (%)