

# Non-Metallic Systems

## PAS Standard Weight Conduit



### Technical Characteristics

Conforms to	BSI Kitemark KM-35161 Low voltage directive Deutsche Bahn S4, SR2, ST2 NFR 16-10/12 I3,F3 Lloyd's Register of Shipping (Type Approval)
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Approvals and Standards	    
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Degree of mechanical protection	High flexibility & fatigue life
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Degree of protection	IP40 - Adapting & Jumbo IP65 - Jumbo + SK Seal 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
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UV protection	Very High
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Finish	Black (BL), Grey (GR)
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Application	Indoors / Outdoors - light industrial, buildings & machinery
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Normal operating temperature range	Application	Min Temp	Max Temp
	Static	- 40°C	+120°C
	Dynamic	- 5°C	+120 °C

For use with - Fitting range	<a href="#">Adaptalok</a> & <a href="#">ATS</a> , <a href="#">Adaptaseal</a> , <a href="#">Adapting</a> and <a href="#">Jumbo</a> fittings
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Fire performance	Test Standard	Performance Rating	
	IEC 61386	Pass	Self Extinguishing & Halogen Free
	NFF16-101	I3 F3	
	LUL	Pass	
	ASTM E662	21/65 - Ds Max	
	UL94	V2	

Testing data	Click or See pages <a href="#">3</a> & <a href="#">4</a>
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Type of material	Polyamide (Nylon) 6 - flame retardant - heat stabilised
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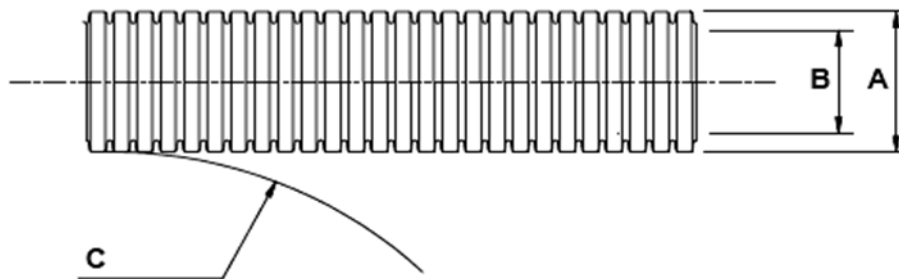
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### Technical & Dimensional Data

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)	
PAFS10	10mm	8.5	Fine	10.0mm	6.5mm	15	50	1.9
PAFS13	13mm	10	Fine	13.0mm	9.6mm	25	50	2.8
PAFS16	16mm	13	Fine	15.8mm	11.8mm	35	50	3.9
PAFS18	18mm	15	Fine	18.4mm	14.0mm	40	50	4.9
PAFS21	21mm	17	Fine	21.2mm	16.5mm	45	50	6.1
PACS25	25mm	22	Coarse	25.0mm	19.8mm	50	50	8.0
PAFS28	28mm	23	Fine	28.5mm	22.6mm	50	50	10.2
PACS28	28mm	23	Coarse	28.5mm	21.7mm	50	50	10.0
PAFS34	34mm	29	Fine	34.5mm	28.8mm	60	50	13.5
PACS34	34mm	29	Coarse	34.5mm	27.7mm	60	50	13.5
PACS42	42mm	36	Coarse	42.5mm	35.2mm	65	25	16.8
PACS48	48mm	42	Coarse	48.2mm	40.9mm	70	25	18.8
PACS54	54mm	48	Coarse	54.5mm	46.5mm	75	25	24.1
PACS80	80mm	70	Coarse	79.3mm	67.0mm	160	10	48.0
PACS106	106mm	95	Coarse	106mm	91.5mm	210	10	85.0

To order quote part number, colour & reel length, e.g PAFS21/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
<b>PAS</b>	ATS	2	4	2	4	4	0	6	7	-	1	1	0

### Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength	IEC61386	<25% crush >90% recovery	>320N
Impact Strength @ 23 °C	IEC61386-1	No Cracks <20% deformation min value	>20J
Impact Strength @-5 °C	IEC61386-1	No Cracks. <20% deformation min value	>6.0J
Tensile Strength	IEC61386-1	Pull off of fitting minimum value	>100N
Dynamic Bend radius @-5 °C	IEC61386-23	5000 cycles minimum	4xOD

### Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temp	Dynamic IEC61386	Dynamic 5000 cycles	-5°C
Maximum Short Term Temp	IEC61386	Static & Dynamic 3000 hours, 5000 cycles	150°C
Minimum Static Temp		Permanent Use (30,000) Hours	-40°C
Maximum Static Temp		Permanent Use (30,000) Hours	120°C
Cold Bend @ - 40°C	NFR13-903	2xOD	Pass

### 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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The Company's policy is one of continuous improvement and reserves the right to change specifications at any time without prior notice.

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### Flammability

Test Type	Method / Standard	Requirement	Result	Unit
Oxygen Index	ISO 4589-2	% Oxygen to support combustion	28.9	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	850	°C
Flammability	UL94	Vertical (V0) or Horizontal (HB)	HB-V0	V2
Flammability	IEC 61386-1	1Kw Burner @ 45° Vertical burn	Pass	Pass/Fail
Ignition Rating	NF F16-101	Glow Wire & oxygen index	I3	-





### Smoke

Test Type	Method / Standard	Requirement	Result	Unit
Fume Rating	NF F16-101	Smoke & Toxicity	F3	-
Smoke Density	BS6853	A <0.02	0.026	Ao
Smoke Density	ASTM E-662	Ds <100 in both modes	21/65	Ds Max

### Toxicity

Test Type	Method / Standard	Requirement	Result	Unit
Halogen Free	LUL	<0.5%	Pass<0.1 %	Pass/Fail
Phosphorous Free	LUL	<0.5%	Pass<0.1 %	Pass/Fail
Sulphur Free	LUL	<0.5%	Pass<0.1 %	Pass/Fail
Toxicity	NES713 Issue 3	<10.0	5.2	-

### Fire Performance Overview

Property	Low Fire Hazard	Enhanced Low Fire Hazard	Super Low Fire Hazard	Inherent Low Fire Hazard
				
<b>Property</b>	LFH	EFLH	SLFH	ILFH
Oxygen Index ISO4589	32% ≥ OI ≥ 28%	OI ≥ 32%	OI ≥ 32%	Inherent Low Fire Hazard i.e
BS6853 Smoke Density 3m³	0.02 ≤ A <sub>s</sub> ≤ 0.03	0.0005 ± A <sub>s</sub> ≤ 0.02	A <sub>s</sub> ≤ 0.005	Type , S, SS
Zero Halogen	✓	✓	✓	Metallic Conduit & Fittings
Zero Phosphorus	✓	✓	✓	
Zero Sulphur	✓	✓	✓	
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 (%)