





Non-Metallic Systems

PA_S Standard Weight Conduit



Technical Characteristics

Conforms to	BSI Kitemark KM-35161 CE Mark to the Low voltage directive 2014/35/EU Deutsche Bahn S4, SR2, ST2 EN45545-2 HL2 (R22 & R23) UL1696 / CSA 22.2 No:227.3 - File number E173968		
Approvals and Standards	   		
Degree of mechanical protection	High flexibility, High fatigue life		
Degree of protection	IP40 - Adapting & Jumbo Fittings IP65 - Jumbo Fittings with SK Seal IP66 - ATS, Adaptalok, Adaptaseal IP67 - ATS, Adaptalok with ALS Seal, Adaptaseal IP68 - ATS, Adaptalok with ALS Seal, Adaptaseal IP69 - ATS, Adaptalok with ALS Seal, Adaptaseal		
UV Resistance	Very High		
Finish	Black (BL), Grey, RAL 7031 (GR) Other colours available on request and subject to MOQ		
Application	Indoors / Outdoors - light industrial, buildings, machinery and equipment.		
Normal operating temperature range	Application	Min Temp	Max Temp
	Static	- 40°C	+120°C
	Dynamic	- 25°C	+150 °C
For use with - Fitting range	Adaptalok & ATS , Adaptaseal , Adapting and Jumbo fittings		
Fire performance	Test Standard	Performance Rating	Self Extinguishing & Halogen Free
	BS EN 61386-1	Pass	
	EN45545-2	HL2 (R22 & R23)	
	DIN5510-2	S4 SR2 ST2	
	UL94	V2	
Testing data	Click or See pages 3 & 4		
Type of material	Polyamide (Nylon) 6 - flame retarded - UV and heat stabilised		



Image



Non-Metallic Systems

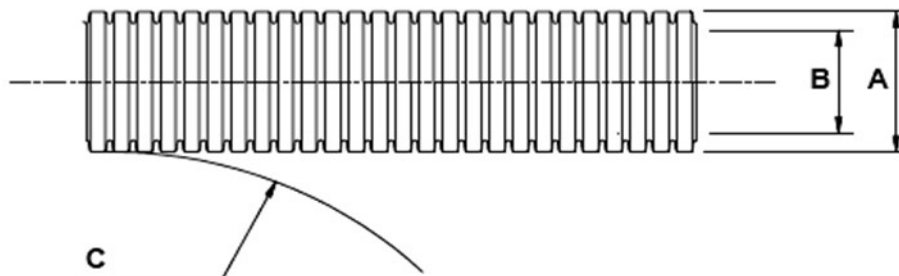
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Technical & Dimensional Data

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)	
**PAFS10	10mm	7.5	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	15.9mm	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
 **UR not applicable to sizes 10 and 13.



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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 Propagating	Suspended load
PA_S	ATS	2	4	2	4	4	0	6	7	-	1	1	0

Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength	BS EN 61386-1	<25% crush >90% recovery	>320N (Class 2)
Impact Strength @23 °C	BS EN 61386-1	No Cracks <20% deformation min value	>20J (Class 5)
Impact Strength @-5 °C	BS EN 61386-1	No Cracks. <20% deformation min value	>6.0J (Class 4)
Tensile Strength	BS EN 61386-1	Pull off of fitting minimum value	>100N
Dynamic Bend radius @-5 °C	BS EN 61386-23	5000 cycles minimum	4xOD

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temp dynamic	BS EN 61386-23	5000 reverse bend cycles	-25°C
Maximum Short dynamic	BS EN 61386-23	5000 reverse bend 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 ABB CMPL 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	28.5	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	850	°C
Flammability	UL94	Vertical (V0, V2) or Horizontal (HB)	V2	HB-V0
Flammability	BS EN 61386-1	1Kw Burner @ 45° Vertical burn	Pass	Pass/Fail





Smoke

Test Type	Method / Standard	Requirement	Result	Unit
Optical Density	ISO-5659-2	<150 (HL3 R22)	148	-
Smoke Density	BS-6853	A <0.061 (Class II)	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	NF X70-100-1&2	C.I.T _{NLP} <0.75 (HL3 R22)	0.59	-
Toxicity	BS 6853	<3.6 (Class II)	2.95	-

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 Hazard i.e
ISO 5659-2 Smoke Density	<300	<150	<150	Type , S, SS
Zero Halogen	✓	✓	✓	Metallic Conduit & Fittings
Zero Phosphorus	✓	✓	✓	
Zero Sulphur	✓	✓	✓	
EN45545-2	HL2	HL3	HL3	

Pre-Test Conditioning

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	BS EN 61386-1	23 (°C)	50 (%)

