

Technical Data Sheet

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 1 I3,F3 UL Recognised to UL1696 File number E173968		
Approvals and Standards	    		
Degree of mechanical protection	High flexibility & fatigue life		
Degree of protection	IP40 - Adapting & Jumbo IP65 - Jumbo + SK Seal IP66 - Alok, ATS or Adaptaseal IP67 - Alok + ALS Seal or ATS, Adaptaseal IP68 - Alok + ALS Seal or ATS, Adaptaseal IP69k - Alok + ALS Seal or ATS		
UV protection	Very High		
Finish	Black (BL), Grey (GR)		
Application	Indoors / Outdoors - light industrial, buildings & machinery		
Normal operating temperature range	Application	Min Temp	Max Temp
	Static	- 40°C	+120°C
	Dynamic	- 5°C	+120 °C
For use with - Fitting range	Alok & ATS , Adaptaseal , Adapting and Jumbo fittings		
Fire performance	Test Standard		Performance Rating
	BS EN 61386		Pass
	NFF16-101		I3 F3
	DIN5510-2		S4 SR2 ST2
	UL94		V2
			Self Extinguishing & Halogen Free
Testing data	Click or See pages 3 & 4		
Type of material	Polyamide (Nylon) 6 - flame retardant - heat stabilised		
Image			



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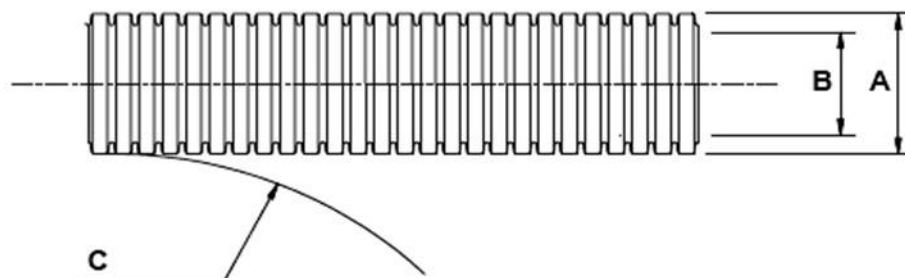
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Technical & Dimensional Data

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)	
T/PAFS10	10mm	7.5	Fine	10.0mm	6.5mm	15	50	1.9
T/PAFS13	13mm	10	Fine	13.0mm	9.6mm	25	50	2.8
T/PAFS16	16mm	13	Fine	15.8mm	11.8mm	35	50	3.9
T/PAFS18	18mm	15	Fine	18.4mm	14.0mm	40	50	4.9
T/PAFS21	21mm	17	Fine	21.2mm	16.5mm	45	50	6.1
T/PACS25	25mm	22	Coarse	25.0mm	19.8mm	50	50	8
T/PAFS28	28mm	23	Fine	28.5mm	22.6mm	50	50	10.2
T/PACS28	28mm	23	Coarse	28.5mm	21.7mm	50	50	10
T/PAFS34	34mm	29	Fine	34.5mm	28.8mm	60	50	13.5
T/PACS34	34mm	29	Coarse	34.5mm	27.7mm	60	50	13.5
T/PACS42	42mm	36	Coarse	42.5mm	35.2mm	65	25	16.8
T/PACS48	48mm	42	Coarse	48.2mm	40.9mm	70	25	18.8
T/PACS54	54mm	48	Coarse	54.5mm	46.5mm	75	25	24.1
T/PACS67	67mm	56	Coarse	67.2mm	56.3mm	130	10	38.3
T/PACS80	80mm	70	Coarse	79.3mm	67.0mm	160	10	48
T/PACS106	106mm	95	Coarse	106mm	91.5mm	210	10	85

To order quote part number, colour & reel length, e.g TPAFS21/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 Propagating	Suspended load
PAS	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	<25% crush >90% recovery	>320N
Impact Strength @ 23 °C	BS EN 61386-1	No Cracks <20% deformation min value	>20J
Impact Strength @-5 °C	BS EN 61386-1	No Cracks. <20% deformation min value	>6.0J
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	Dynamic 5000 cycles	-5°C
Maximum Short Term Temp	BS EN 61386	Static & Dynamic 3000 hours, 5000 cycles	150°
Minimum Static Temp		Permanent Use (30,000) Hours	C
Maximum Static Temp		Permanent Use (30,000) Hours	-40°C
Cold Bend @ - 40°C	NFR13-903	2xOD	120°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 TTS 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	28.9	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	850	°C
Flammability	UL94	Vertical (V0) or Horizontal (HB)	V2	HB-V0
Flammability	BS EN 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	A ₀
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
Property Oxygen Index ISO4589 BS6853 Smoke Density 3m ³ Zero Halogen Zero Phosphorus Zero Sulphur NFF16-102 EN45545-2	 LFH 32% ≥ OI ≥ 28% 0.02 ≤ A ₀ ≤ 0.03 ✓ ✓ ✓ I3F2 HL2	 EFLH OI ≥ 32% 0.0005 ≤ A ₀ ≤ 0.02 ✓ ✓ ✓ I2F2 HL3	 SLFH OI ≥ 32% A ₀ ≤ 0.005 ✓ ✓ ✓ I2F1 HL3	 ILFH Inherent Low Fire Hazard i.e Type , S, SS Metallic Conduit & Fittings

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Flammability

Pre-Test Conditions

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