



Connect and Protect

TransTechnical Solutions

Technical Data Sheet

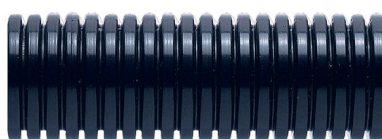
Non-Metallic Systems

TPAS 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) [On Request]		
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, & Jumbo fittings		
Fire performance	Test Standard		Performance Rating
	BS EN 61386		Pass
	NFF16-101		I3 FR
	DIN 5510-2		S4 SR2 ST2
	UL94		V2
Self Extinguishing & Halogen Free			
Testing data	See page 3 & 4		
	Polyamide (Nylon) 6 - Flame retardant - Heat stabilised		

Image



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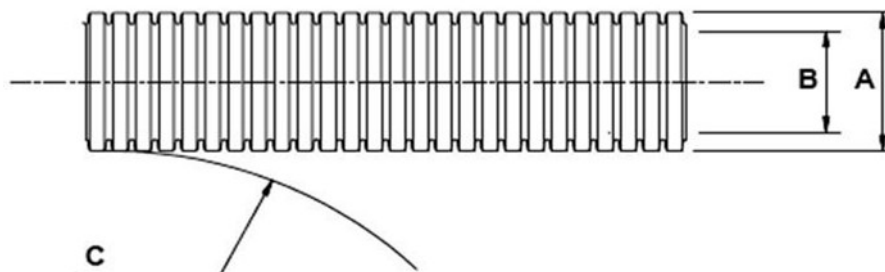
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Technical & Dimensional Data

	Conduit Size			Dimensions				
Part No.	Nominal Conduit size	NW Conduit Size	Conduit Pitch	(A) Outside Diameter	(B) Inside Diameter	(C) Min. Bend Radius	Reel Length (m)	Average Weight (Kg/100m)
TPAFS10	10mm	7.5	Fine	10.0mm	6.5mm	15	50	1.9
TPAFS13	13mm	10	Fine	13.0mm	9.6mm	25	50	2.8
TPAFS16	16mm	13	Fine	15.8mm	11.8mm	35	50	3.9
TPAFS21	21mm	17	Fine	21.2mm	16.5mm	45	50	6.1
TPAFS28	28mm	23	Fine	28.5mm	22.6mm	50	50	10.2
TPAFS34	34mm	29	Fine	34.5mm	28.8mm	60	50	13.5
TPACS42	42mm	36	Coarse	42.5mm	35.2mm	65	25	16.8
TPACS54	54mm	48	Coarse	54.5mm	46.5mm	75	25	24.1
TPACS67	67mm	56	Coarse	67.2mm	56.3mm	130	10	38.3
TPACS80	80mm	70	Coarse	79.3mm	67.0mm	160	10	48
TPACS106	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
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	<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° C
Minimum Static Temp		Permanent Use (30,000) Hours	
Maximum Static Temp		Permanent Use (30,000) Hours	-40°C
Cold Bend @ - 40°C	NFR13-904	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%)	

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	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
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 &
Zero Sulphur	✓	✓	✓	Fittings
NFF16-102	I3F2	I2F2	I2F1	
EN45545-2	HL2	HL3	HL3	

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Flammability

Pre-Test Conditions

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

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