TransTechnical Solutions

Metallic Systems

TSP Conduit

Technical Characteristics

Conforms to	BSI Kitemark KM-35161 Low voltage directive
Approvals and Standards	IEC 61386 CE
Degree of Mechanical Protection	High flexibility - Medium fatigue life
Degree of protection	IP65 - with type SP - M Type & C90 fittings IP54 - with type SP - A, B, C, E & F fittings
UV protection Very high - (Black)	Finish Black (Grey & Orange on request)
Application	Indoors / Outdoors - light industrial, general purpose, buildings

Normal operating temperature range

Application:	Min Temp:	Max Temp:
Static	- 25°C	+70°C
Dynamic	- 5°C	+90 °C

For use with - Fitting range: Type A ,B, C, E, F, M & C90

Fire performance

Test Standard	Performance Rating
ISO 4589-2	28%
IEC 60695	850°C
IEC 61386-1	Pass

(see fire testing data for fire performance overview)

Testing data: See pages 3 & 4

Type of material: Galvanised steel core with PVC jacket

Image

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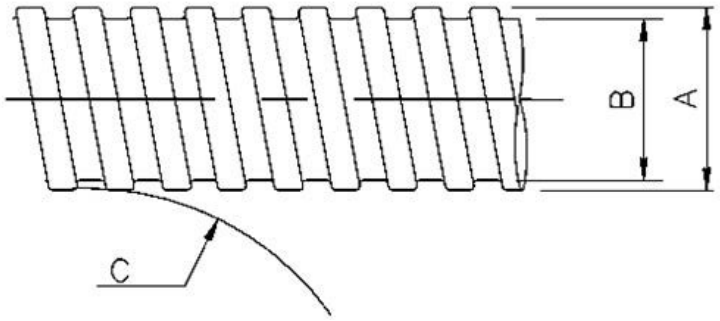
Technical & Dimensional Data

Conduit size metric (mm)	10	12	16	20	25	32	40	50	63	75
Conduit size US trade (inches)	1/4”	5/16”	3/8”	1/2”	3/4”	1”	1 1/4”	1 1/2”	2”	2/1/2”
Part code	TSP*	TSP*	TSP*	TSP*	TSP*	TSP*	TSP*	TSP*	TSP*	TSP*
Coil length (m)	25/50	25/50	25/50	25/50	25/50	25	10/25	10/25	10	10
A - Outside diameter (mm)	10	14	17	21.5	26	34	44.5	55	64.5	79
B - Inside diameter (mm)	6.8	10.3	13	16.9	21.4	28.1	37.7	48.4	57.5	70
C - Static bend radius (mm)	25	30	35	45	55	60	80	90	115	150
Average weight (KG/100m)	12.1	14.8	22.1	30.3	35.3	60.3	94.6	116.6	76	180

**For ordering code add coil length and colour to part code - e.g TSP25/BL/25M*



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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
TSP	TS (M)	4	4	2	2	4	2	6	5	-	4	1	5

Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength @ 23°C	IEC61386-1	<25% crush >90% recovery	>1250N
Crush Strength @ 23 °C	AFX norm C1989	10% Crush, Instantaneous Value	2200N
Impact Strength @ 23 °C	IEC61386-1	No Cracks <20% deformation	>20J
Impact Strength @-25 °C	IEC61386-1	No Cracks. <20% deformation	>6J
Tensile Strength	IEC61386-1	With M Type Fitting	>1000N
Tensile Strength	AFX norm T1987	Ultimate pull-out of M-Type Fitting	1450N
Dynamic Bend radius @ -45 °C	IEC61386-23	5000 cycles minimum	4xOD

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temperature	IEC61386-23	Dynamic 5000 cycles	-5°C
Maximum Temperature	IEC61386-23	Dynamic 5000 cycles	90°C
Minimum Static		Permanent Use	-15°C
Maximum Static		Permanent Use	70°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%)	

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Flammability

Test Type	Method / Standard	Requirement	Result	Unit
Oxygen Index	ISO 4589-2	% Oxygen to support combustion	28	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish within 2s	850	°C
Flammability	IEC 61386-1	1Kw Burner @ 45°	Pass	Pass/Fail

Fire Performance Overview

Property	Low Fire Hazard	Enhanced Low Fire Hazard	Super Low Fire Hazard	Inherent Low Fire Hazard
	LFH	ELFH	SLFH	ILFH
Property	LFH	EFLH	SLFH	ILFH
Oxygen Index ISO4589	32% ≥ OI ≥ 28%	OI ≥ 32%	OI ≥ 32%	
BS6853 Smoke Density 3m³	0.02 ≤ A_s ≤ 0.03	0.0005 ± A_s ≤ 0.02	A_s ≤ 0.005	Inherent Low Fire Hazard i.e Type, S, SS Metallic Conduit & Fittings
Zero Halogen	✓	✓	✓	
Zero Phosphorus	✓	✓	✓	
Zero Sulpher	✓	✓	✓	
NFF16-102	I3F2	I2F2	I2F1	
EN45545-4	HL2	HL3	HL3	

Pre Test Conditions

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

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