



Connect and Protect

TransTechnical Solutions

Technical Data Sheet

Metallic Systems

TSPL Conduit

Technical Characteristics

Conforms to	BSI Kitemark KM-35161 Low voltage directive Lloyds Register of Shipping (Type Approval)		
Approvals and Standards	  		
Degree of mechanical protection	Medium flexibility & fatigue life		
Degree of protection	IP69k - with TSPL type M fitting IP68 - with TSPL type M fitting IP67 - with TSPL type A, B & M fittings IP66 - with TSPL type M & C90 fittings		
UV protection	Very High		
Finish	Black, Orange ,Grey		
Application	Liquid tight - Indoors / Outdoors, marine, buildings		
Normal operating temperature range	Application	Min Temp	Max Temp
	Static	-20°C	+105°C
	Dynamic	-5°C	+105°C
For use with - Fitting range	Type A ,B, E, M C90 & C45		
Fire performance	Test Standard	Performance Rating	
	ISO 4589-2	28%	
	IEC 60695	850°C	
	UL94	V0	
	IEC 61386-1	Pass	
Testing data	See pages 3 & 4		
Type of material	Galvanised steel core - string packing - PVC covering		

(See Fire testing data for fire performance overview)

Image



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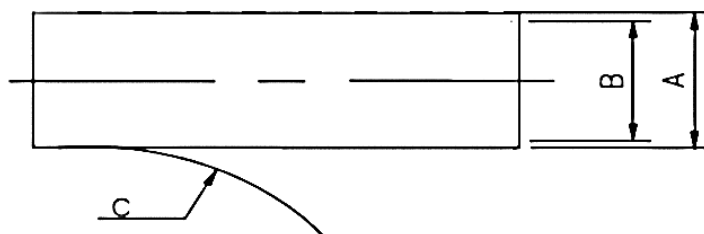
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Technical & Dimensional Data

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	TSPL*	TSPL*	TSPL*	TSPL*	TSPL*	TSPL*	TSPL*	TSPL*	TSPL*	-
Coil length (m)	25/50	10/25/50	10/25/50	10/25/50	10/25/50	10/25	10/25	10/25	10/25	-
A - Outside diameter (mm)	11.8	14.2	17.8	21.1	26.4	33.1	41.8	47.5	59.7	-
B - Inside diameter (mm)	7	10	12.5	15.9	21	26.7	35.4	40.4	51.6	-
C - Static bend radius (mm)	40	45	50	80	110	145	180	240	345	-
Average weight	12.1	14.8	22.1	30.2	35.3	60.3	94.6	116.6	76.5	180
<i>*For ordering code add coil length to part code - e.g TSPL25/BL/25M</i>										



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BS EN 61386 Clarification

	Fitting	Compression	Impact	Min temp	Max temp	Bending	Electrical	IP solids	IP water	Corrosion	Tensile	Non-flame Propagating	Suspended load
TSPL	TSPL (M)	4	4	2	3	4	2	6	7	-	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		10% Crush, Instantaneous Value	1800N
Impact Strength @ 23 °C	IEC61386-1	No Cracks <20% deformation	>20J
Impact Strength @ -5 °C	IEC61386-1	No Cracks. <20% deformation	>6J
Tensile Strength	IEC61386-1	With M Type Fitting	>1000N
Tensile Strength		Ultimate pull-out of M-Type Fitting	1600N
Dynamic Bend radius @ -5 °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	105°C
Minimum Static		Permanent Use	-20°C
Maximum Static		Permanent Use	105°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 with 30s	850	°C
Flammability	UL94	Vertical (V0, V2) or Horizontal (HB)	V0	
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
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 _s ≤ 0.03 ✓ ✓ ✓ I3F2 HL2	 EFLH OI ≥ 32% 0.0005 ± A _s ≤ 0.02 ✓ ✓ ✓ I2F2 HL3	 SLFH OI ≥ 32% A _s ≤ 0.005 ✓ ✓ ✓ I2F1 HL3	 ILFH Inherent Low Fire Hazard i.e Type , S, SS Metallic Conduit & Fittings

Pre Test Conditions

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

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