

# Metallic Systems

## SPL 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 SPL type M fitting  
 IP68 - with SPL type M fitting  
 IP67 - with SPL type A, B & M fittings  
 IP66 - with SPL 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 [Adaptasteel](#) - Type [A](#) ,[B](#), [E](#), [M](#) [C90](#) & [45](#)

Fire performance	Test Standard	Performance Rating	
	ISO 4589-2	28%	
	IEC 60695	850°C	(See Fire testing <a href="#">data</a> for fire performance overview)
	UL94	V0	
	IEC 61386-1	Pass	

Testing data Click or See pages [3](#) & [4](#)

Type of material Galvanised steel core - string packing - PVC covering

Image



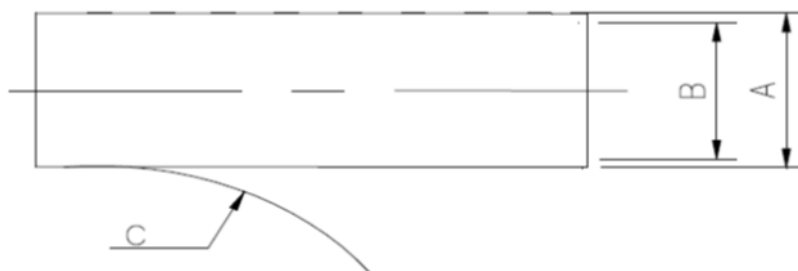
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### Technical & Dimensional Data

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	SPL*	SPL*	SPL*	SPL*	SPL*	SPL*	SPL*	SPL*	SPL*	-
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	-
<b>A</b> - Outside diameter (mm)	11.8	14.2	17.8	21.1	26.4	33.1	41.8	47.5	59.7	-
<b>B</b> - Inside diameter (mm)	7.0	10.0	12.5	15.9	21.0	26.7	35.4	40.4	51.6	-
<b>C</b> - Static bend radius (mm)	40	45	50	80	110	145	180	240	345	-
Average weight (KG/100m)	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 SPL25/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 Propogating	Suspended load
SPL	SPL(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 : ●

<span style="color: green;">●</span> Astm No.1	<span style="color: green;">●</span> Diesel oil	<span style="color: red;">●</span> Methyl Bromide	<span style="color: green;">●</span> Sulphur Dioxide (Gas)
<span style="color: green;">●</span> Astm No.2	<span style="color: yellow;">●</span> Diethylamine	<span style="color: red;">●</span> MEK	<span style="color: green;">●</span> Sulphuric Acid (10%)
<span style="color: green;">●</span> Astm No.3	<span style="color: red;">●</span> Ethanol	<span style="color: green;">●</span> Nitric Acid (10%)	<span style="color: green;">●</span> Sulphuric Acid (70%)
<span style="color: green;">●</span> Acetic Acid (10%)	<span style="color: yellow;">●</span> Ether	<span style="color: green;">●</span> Nitric Acid (70%)	<span style="color: red;">●</span> Toluene
<span style="color: red;">●</span> Acetone	<span style="color: yellow;">●</span> Ethylamine	<span style="color: green;">●</span> Oxalic Acid	<span style="color: green;">●</span> Transformer Oil
<span style="color: green;">●</span> Aluminium Chloride	<span style="color: yellow;">●</span> Ethylene Glycol	<span style="color: yellow;">●</span> Ozone (Gas)	<span style="color: red;">●</span> 1,1,1-Trichloroethane
<span style="color: red;">●</span> Aniline	<span style="color: red;">●</span> Ethyl Ethanoate	<span style="color: green;">●</span> Paraffin oil	<span style="color: red;">●</span> Trichloroethylene
<span style="color: red;">●</span> Benzaldehyde	<span style="color: yellow;">●</span> Freon 32	<span style="color: yellow;">●</span> Petrol	<span style="color: yellow;">●</span> Turpentine
<span style="color: red;">●</span> Benzene	<span style="color: green;">●</span> Hydrochloric Acid (10%)	<span style="color: green;">●</span> Phenol	<span style="color: green;">●</span> Vegetable Oil
<span style="color: yellow;">●</span> Carbon tetrachloride	<span style="color: green;">●</span> Hydrochloric Acid (36%)	<span style="color: green;">●</span> Sea Water	<span style="color: red;">●</span> Vinyl Acetate
<span style="color: red;">●</span> Chlorine water	<span style="color: green;">●</span> Hydrogen Peroxide (35%)	<span style="color: green;">●</span> Silver Nitrate	<span style="color: green;">●</span> Water
<span style="color: red;">●</span> Chloroform	<span style="color: green;">●</span> Hydrogen Peroxide (87%)	<span style="color: red;">●</span> Skydrol	<span style="color: yellow;">●</span> White Spirit
<span style="color: green;">●</span> Citric Acid	<span style="color: yellow;">●</span> Lactic Acid	<span style="color: green;">●</span> Sodium Chloride	<span style="color: green;">●</span> Zinc Chloride
<span style="color: green;">●</span> Copper Sulphate	<span style="color: green;">●</span> Lubricating oil	<span style="color: green;">●</span> Sodium Hydroxide (10%)	
<span style="color: yellow;">●</span> Cresol	<span style="color: red;">●</span> Methanol	<span style="color: green;">●</span> 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 Thomas & Betts 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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The Company's policy is one of continuous improvement and reserves the right to change specifications at any time without prior notice.

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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
				
<b>Property</b>	LFH	EFLH	SLFH	ILFH
Oxygen Index ISO4589	32% ≥ OI ≥ 28%	OI ≥ 32%	OI ≥ 32%	Inherent Low Fire Hazard i.e
BS6853 Smoke Density 3m³	0.02 ≤ A <sub>s</sub> ≤ 0.03	0.0005 ± A <sub>s</sub> ≤ 0.02	A <sub>s</sub> ≤ 0.005	Hazard i.e
Zero Halogen	✓	✓	✓	Type , S, SS
Zero Phosphorus	✓	✓	✓	Metallic Conduit & Fittings
Zero Sulphur	✓	✓	✓	
NFF16-102	I3F2	I2F2	I2F1	
EN45545-2	HL2	HL3	HL3	

### Pre Test Conditions

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