



**Conduit**  
Medium Flexibility – Medium Fatigue

**Construction**  
Polyolefin Covered Galvanised Steel



## Metallic Systems TYPE LFH-SP

**Applications** Rail  
Food Industry  
Public Buildings

**Fittings**  
IP68 n/a  
IP66 n/a  
IP65 Type SP Fittings – Type M and C90  
IP54 Type SP Fittings – Type A, B, C, E & F

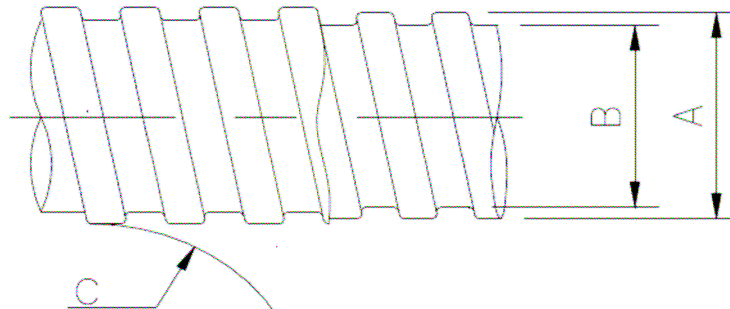
**Characteristics** High UV Resistance  
Enhance Low Fire Hazard  
Halogen Free  
Self Extinguishing  
High Mechanical Strength

**Approvals**  
**IEC61386**  
**CE LVD**  
**DB**  
**London Underground**  
**NF Lloyds Register**

**Material** Polyolefin Covered Galvanised Steel



Part No.	Conduit Size			Dimensions				
	NC	NW	Pitch	(B) Inside Diameter	(A) Outside Diameter	Reel Length	(C) Min Bend Radius	Colour
LFH-SP12	12	-	-	10.3	14.0	25, 50	30	BL
LFH-SP16	16	-	-	13.0	17.0	10, 25, 50	35	BL
LFH-SP20	20	-	-	16.9	21.5	10, 25, 50	45	BL
LFH-SP25	25	-	-	21.4	26.0	10, 25, 50	55	BL
LFP-SP32	32	-	-	28.1	34.0	10, 25	60	BL
LFH-SP40	40	-	-	37.7	44.5	10, 25	80	BL
LFH-SP50	50	-	-	48.4	55.0	10, 25	90	BL
LFH-SP63	63	-	-	57.5	64.5	20	115	BL
LFH-SP75	75	-	-	70	79.0	10	150	BL





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## Metallic Systems

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#### Mechanical Properties

Test Type	Method/Standards	Requirements	Value
Crush Strength @ 23 °C	IEC61386-1	<25% crush >90% recovery	>1250N
Crush Strength @ 23 °C	AFX norm C1989	10% Crush, instantaneous result	2200
Impact Strength @ 23 °C		No Cracks <20% Deformation	>20 J
Impact Strength @ -25 °C	IEC61386-1	No Cracks. <20% deformation	>6 J
Tensile Strength @ 23 °C	IEC61386-1	With M-Type fitting	>1000N
Tensile Strength @ 23 °C	AFX norm T1987	Ultimate Pull-out of M-type fitting	1450N
Static Bend Radius @ 23 °C	AFX norm S1985	-	45mm
Dynamic Bend radius @ -5 °C	IEC61386-2-3	5000 cycles minimum	50mm

#### Thermal Properties

Test Type	Method/Standards	Requirements	Value
Minimum Temperature	-	Permanent use	-5 °C
Maximum Temperature	-	Permanent use	90 °C
Dynamic Bend Radius @ -5 °C	IEC61386-2-3	5000 cycles @ 50mm	Pass

#### Flammability, Smoke and Toxicity (FST) Performance

Test Type	Method/Standard	Requirement	Result	Unit
Halogen Free	LUL	<0.5%	Yes <0.1%	Yes/No
Phosphorous Free	LUL	<0.5%	Yes 0.2%	Yes/No
Sulphur Free	LUL	<0.5%	Yes 0.3%	Yes/No
Oxygen Index	ISO 4589	% Oxygen to support combustion	40	%
Glow Wire rating	IEC 695	No ignition, extinguish with 2 s	850	°C
Flammability	UL94	Vertical (V0, V2) or Horizontal (HB)	V0	-
Flammability	IEC61386-1	1kW burner @ 45 °	Pass	Pass/Fail
FTI	ISO 4589-3		300	°C
I Classification	NFF16-101	Oxygen Index and Glow wire	I3	-
F Classification	NFF16-101/102	Smoke density & toxicity	F1	-
Smokey Density	ATS1000	In flaming mode <100 @ 4 mins	44	Pass
	ATS1000	In Non-flaming mode <100 @ 4mins	55	Pass
Smoke Density	BS6853	A <sub>0</sub> <0.02	0.0175	A <sub>0</sub>
Smoke Density	ASTM E-662	Flamng mode Ds max	48	-
Toxicity	NES713 Issue 3	Smoke Toxicity ≤5.0 or ≤10.0	1.6	Pass

#### Pre test Conditions

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	EN50086/IEC61386	23 (°C)	50 (%)



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### Chemical Properties

Suitable  Limited Suitability

<b>Astm No.1</b>	UNSUITABLE	<b>Methanol</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Astm No.2</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Methyl Bromide</b>	UNSUITABLE
<b>Astm No.3</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>MEK</b>	UNSUITABLE
<b>Acetic Acid (10%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Nitric Acid (10%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Acetone</b>	UNSUITABLE	<b>Nitric Acid (70%)</b>	UNSUITABLE
<b>Aluminium Chloride</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Oxalic Acid</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Aniline</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Ozone (Gas)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Benzaldehyde</b>	UNSUITABLE	<b>Paraffin oil</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Benzene</b>	UNSUITABLE	<b>Petrol</b>	UNSUITABLE
<b>Carbon tetrachloride</b>	UNSUITABLE	<b>Phenol</b>	UNSUITABLE
<b>Chlorine water</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Sea Water</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Chloroform</b>	UNSUITABLE	<b>Silver Nitrate</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Citric Acid</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Skydrol</b>	UNSUITABLE
<b>Copper Sulphate</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Sodium Chloride</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Cresol</b>	UNSUITABLE	<b>Sodium Hydroxide (10%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Diesel oil</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Sodium Hydroxide (60%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Diethylamine</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Sulphur Dioxide (Gas)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Ethanol</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Sulphuric Acid (10%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Ether</b>	UNSUITABLE	<b>Sulphuric Acid (70%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Ethylamine</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Toluene</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Ethylene Glycol</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>Transformer Oil</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Ethyl Ethanoate</b>	UNSUITABLE	<b>1,1,1-Trichloroethane</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Freon 32</b>	UNSUITABLE	<b>Trichloroethylene</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Hydrochloric Acid (10%)</b>	UNSUITABLE	<b>Turpentine</b>	UNSUITABLE
<b>Hydrochloric Acid (36%)</b>	UNSUITABLE	<b>Vegetable Oil</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>
<b>Hydrogen Peroxide (35%)</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Vinyl Acetate</b>	UNSUITABLE
<b>Hydrogen Peroxide (87%)</b>	UNSUITABLE	<b>Water</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>
<b>Lactic Acid</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>	<b>White Spirit</b>	UNSUITABLE
<b>Lubricating oil</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: orange;"></span>	<b>Zinc Chloride</b>	<span style="display: inline-block; width: 100px; height: 10px; background-color: green;"></span>

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 Adaptaflex for further information.

### IEC 61386 CLASSIFICATION

	Fitting	Compression	Impact	Min temp	Max temp	Bending	Electrical	IP Solids	IP Water	Corrosion	Tensile	Non-Flame Propagation	Suspended Load
LFH-SP	SP(M)	4	4	2	2	4	2	6	5	-	4	1	5



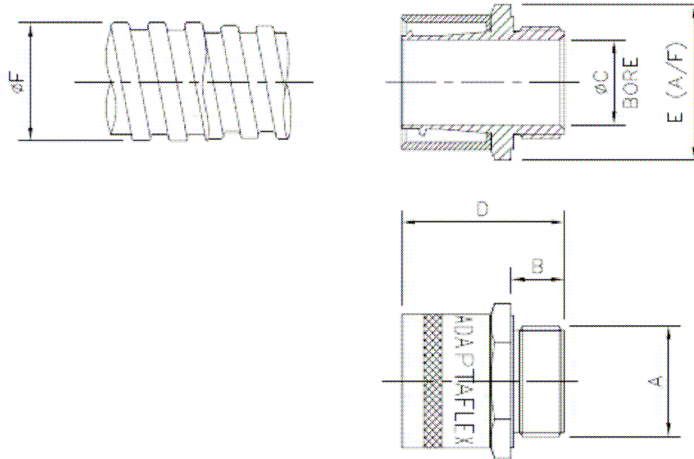
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**Metallic Systems**  
**TYPE LFH-SP**

**Dimension charts for associated fittings**  
**TYPE A**



METRIC THREADS

PART No.	THREAD A	NOMINAL DIMENSIONS (mm)				NOMINAL CONDUIT $\phi F$
		B	C	D	E	
SP10/M12/A	M12 x1.5	8.0	5.5	23.0	14.0	10.0
SP12/M16/A	M16 x1.5	8.0	8.5	23.0	17.0	14.0
SP16/M16/A	M16 x1.5	10.0	11.5	25.5	20.0	17.0
SP16/M20/A	M20 x1.5	10.0	11.5	25.5	22.0	17.0
SP20/M20/A	M20 x1.5	13.0	15.3	29.0	24.0	21.0
SP25/M25/A	M25 x1.5	12.0	19.0	36.5	30.0	26.0
SP32/M32/A	M32 x1.5	14.0	26.2	39.0	38.0	34.0
SP40/M40/A	M40 x1.5	15.0	34.2	43.0	50.0	44.5
SP50/M50/A	M50 x1.5	15.0	45.0	45.0	66.5	55.0
SP63/M63/A	M63 x1.5	20.0	54.0	57.0	76.5	64.5
SP75/M75/A	M75 x1.5	20.0	66.5	60.0	84.0	79.0

PG THREADS

PART No.	THREAD A	NOMINAL DIMENSIONS (mm)				NOMINAL CONDUIT $\phi F$
		B	C	D	E	
SP10/PG7/A	PG7	8.0	5.5	23.0	14.0	10.0
SP12/PG9/A	PG9	8.0	8.5	23.0	17.0	14.0
SP16/PG11/A	PG11	10.0	11.5	25.5	20.0	17.0
SP20/PG16/A	PG16	12.0	15.3	29.0	24.0	21.0
SP25/PG21/A	PG21	12.0	19.0	36.5	30.0	26.0
SP32/PG29/A	PG29	14.0	26.2	39.0	38.0	34.0
SP40/PG36/A	PG36	15.0	34.2	43.0	50.0	44.5
SP50/PG42/A	PG42	15.0	45.0	45.0	66.5	55.0
SP63/PG48/A	PG48	20.0	54.0	57.0	76.5	64.5