

Metallic Systems

SS Conduit



Technical Characteristics

Conforms to BSI Kitemark KM-35161
Low voltage directive
Inherent Low Fire Hazard (ILFH)

Approvals and Standards   

Degree of mechanical protection Very high flexibility & fatigue life

Degree of protection IP40 - with type S fittings

UV protection Very High

Finish Natural material

Application Indoors / Outdoors - Corrosive environments

| Normal operating temperature range | Application | Min Temp | Max Temp |
|------------------------------------|-------------|----------|----------|
| | Static | - 50°C | +350°C |
| | Dynamic | - 45°C | +250 °C |

For use with - Fitting range [Adaptasteel](#) - Type [A](#) ,[B](#), [E](#), and [F](#)

| Fire performance | Test Standard | Performance Rating | |
|------------------|---------------|--------------------|---|
| | EN45545 | ILFH | (See Fire testing data for fire performance overview) |
| | NFF16-101 | ILFH | |
| | LUL-1085 | ILFH | |
| | BS6855 | ILFH | |
| | DIN 5510-2 | ILFH | |

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

Type of material Stainless Steel - AISI 316 grade



Metallic Systems

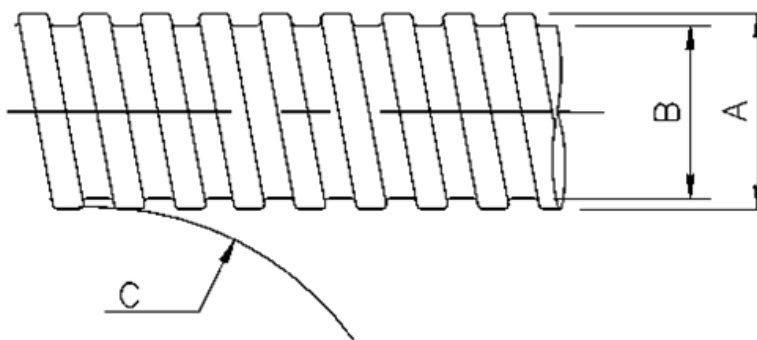
SS Conduit



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 | SS | SS | SS | SS | SS | SS | - | - | - | - |
| Coil length (m) | 25/50 | 10/25/50 | 10/25/50 | 10/25/50 | 10/25/50 | 10/25 | - | - | - | - |
| A - Outside diameter (mm) | 9.0 | 13.0 | 16.0 | 20.5 | 25.0 | 32.0 | - | - | - | - |
| B - Inside diameter (mm) | 6.8 | 10.3 | 13.0 | 16.9 | 21.4 | 28.1 | - | - | - | - |
| C - Static bend radius (mm) | 25 | 30 | 35 | 45 | 55 | 60 | - | - | - | - |
| Average weight (KG/100m) | 10 | 11.6 | 18.2 | 23.6 | 28 | 46 | - | - | - | - |

For ordering code add coil length to part code - e.g SS25/25M



Metallic Systems

SS Conduit



BS EN 61386 Clarification

| | Fitting | Compression | Impact | Min temp | Max temp | bending | electrical | IP solids | IP water | Corrosion | Tensile | Non-flame Propogating | Suspended load |
|----|---------|-------------|--------|----------|----------|---------|------------|-----------|----------|-----------|---------|-----------------------|----------------|
| SS | S (A) | 4 | 4 | 5 | 6 | 4 | 0 | 4 | 0 | 4 | 4 | 1 | 5 |

Mechanical Properties

| Test Type | Methods / Standards | Requirements | Value |
|------------------------------|---------------------|-------------------------------------|----------------|
| Crush Strength @ 23°C | IEC61386-1 | <25% crush >90% recovery | >1250N class4 |
| 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 @-45 °C | IEC61386-1 | No Cracks. <20% deformation | >6J |
| Tensile Strength | IEC61386-1 | With S Type Fitting | >1000N class 4 |
| Tensile Strength | AFX norm T1987 | Ultimate pull-out of S-Type Fitting | 1700N |
| 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 | -45°C |
| Maximum Temperature | IEC61386-23 | Dynamic 5000 cycles | 250°C |
| Minimum Static | | Permanent Use | -60°C |
| Maximum Static | | Permanent Use | 350°C |

Chemical Resistance Chart

| Key: | Green | Yellow | Red | Black |
|-----------------------|-------|--------|-----|-------|
| 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%) | |

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.

Metallic Systems

SS Conduit



Flammability

| Test Type | Method / Standard | Requirement | Result | Unit |
|------------------|-------------------|--------------------------------------|--------|-----------|
| Oxygen Index | ISO 4589-2 | % Oxygen to support combustion | ILFH | % |
| Glow Wire Rating | IEC 60695 | No Ignition to Extinguish with 30s | ILFH | °C |
| Flammability | UL94 | Vertical (V0, V2) or Horizontal (HB) | ILFH | |
| Flammability | IEC 61386-1 | 1Kw Burner @ 45° | ILFH | Pass/Fail |
| FTI | ISO 4589-3 | | ILFH | |

Smoke

| Test Type | Method / Standard | Requirement | Result | Unit |
|---------------|-------------------|-----------------------------------|--------|------|
| Smoke Density | ATS1000 | In flaming mode <100 @ 4 mins | ILFH | |
| Smoke Density | ATS1000 | In non flaming mode <100 @ 4 mins | ILFH | |
| Smoke Density | BS6853 | A <0.02 | ILFH | |
| Smoke Density | ASTM E-662 | Flaming mode Ds Max | ILFH | |
| Smoke Density | ISO - 5659-2 | Ds Max | ILFH | |

Toxicity

| Test Type | Method / Standard | Requirement | Result | Unit |
|------------------|-------------------|--------------------|--------|--------|
| Halogen Free | LUL | <0.5% | ILFH | Yes/No |
| Phosphorous Free | LUL | <0.5% | ILFH | Yes/No |
| Sulphur Free | LUL | <0.5% | ILFH | Yes/No |
| NFX 70-100 | NFX70 - 100 1 / 2 | CIT _{NLP} | ILFH | N/A |

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 Hazard i.e Type , S, SS Metallic Conduit & Fittings |
| BS6853 Smoke Density 3m³ | 0.02 ≤ A _s ≤ 0.03 | 0.0005 ± A _s ≤ 0.02 | A _s ≤ 0.005 | |
| Zero Halogen | ✓ | ✓ | ✓ | |
| Zero Phosphorus | ✓ | ✓ | ✓ | |
| Zero Sulphur | ✓ | ✓ | ✓ | |
| NFF16-102 | I3F2 | I2F2 | I2F1 | |
| EN45545-2 | HL2 | HL3 | HL3 | |

Pre Test Conditions

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