

Non-Metallic Systems

PRTC High Specification Braided Conduit



Technical Characteristics

| | |
|-------------|---|
| Conforms to | BSI Kitemark KM-35161 Low voltage directive London Underground limited & dispersed use Lloyd's Register of Shipping Type Approval NFF 16-101/2 I2, F1 Deutsche Bahn S4, SR2, ST2 |
|-------------|---|

| | |
|-------------------------|--|
| Approvals and Standards |       |
|-------------------------|--|

| | |
|---------------------------------|---------------------------------------|
| Degree of mechanical protection | High flexibility, Medium fatigue life |
|---------------------------------|---------------------------------------|

| | |
|----------------------|---|
| Degree of protection | IP40 - N/A IP65 - N/A IP66 - Hi-Spec Type A & B IP67 - Hi-Spec Type A & B IP68 - N/A IP69k - N/A |
|----------------------|---|



| | |
|---------------|-----------|
| UV protection | Very High |
|---------------|-----------|

| | |
|--------|-----------------------|
| Finish | Tinned Copper Braided |
|--------|-----------------------|

| | |
|-------------|--|
| Application | Indoors / Outdoors - EMI Screen and / or abrasion resistance |
|-------------|--|

| | | | |
|------------------------------------|-------------|----------|----------|
| Normal operating temperature range | Application | Min Temp | Max Temp |
| | Static | - 40°C | +120°C |
| | Dynamic | - 5°C | +120 °C |

| | |
|------------------------------|--|
| For use with - Fitting range | Hi - Spec Type A & B |
|------------------------------|--|

| Fire performance | Test Standard | Performance Rating | |
|---|---------------------|--------------------|---|
|  | BS6853:1999 | 0.0261 Ao | Self Extinguishing & Halogen Free |
| | NFF 16-101 /2 | I2 / F1 | |
| | TS45545-2 (ISO5659) | 87 (HL3) |  |
| | LUL | Pass <0.1% | |
| | UL94 | V0 | |

| | |
|--------------|--|
| Testing data | Click or See pages 3 & 4 |
|--------------|--|

| | |
|------------------|---|
| Type of material | Modified Polyamide 6 (Nylon) - flame retardant - heat stabilised featuring a Tinned Copper overbraid. |
|------------------|---|



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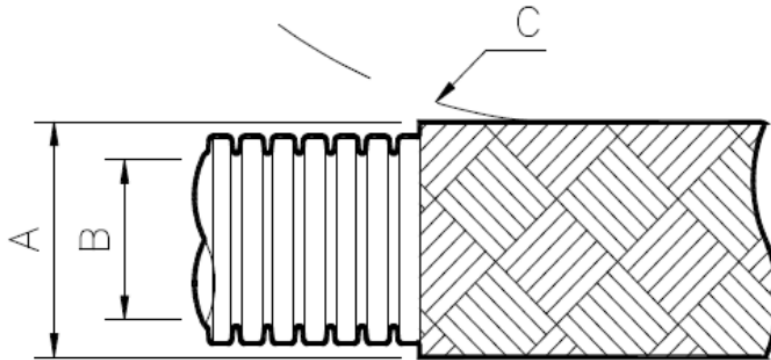
PRTC High Specification Braided Conduit



Technical & Dimensional Data

| Part No. | Conduit Size | | | Dimensions | | | | Average Weight (KG/100m) |
|----------|----------------------|-----------------|---------------|----------------------|---------------------|----------------------|-----------------|--------------------------|
| | Nominal Conduit Size | NW Conduit Size | Conduit Pitch | (A) Outside Diameter | (B) Inside Diameter | (C) Min. Bend Radius | Reel Length (m) | |
| PRFSTC16 | 16mm | 13 | Fine | 17.2mm | 11.7mm | 35mm | 50 | 3.8 |
| PRCSTC21 | 21mm | 17 | Coarse | 23.6mm | 16.6mm | 45mm | 50 | 6.0 |
| PRCSTC28 | 28mm | 23 | Coarse | 30.0mm | 21.7mm | 50mm | 50 | 10.0 |
| PRCSTC34 | 34mm | 29 | Coarse | 36.0mm | 27.7mm | 60mm | 50 | 14.0 |
| PRCSTC42 | 42mm | 36 | Coarse | 43.5mm | 35.1mm | 65mm | 25 | 16.5 |
| PRCSTC54 | 54mm | 48 | Coarse | 56.5mm | 46.6mm | 75mm | 25 | 23.5 |

To order, quote part number & reel length, e.g PRCSTC21/50M

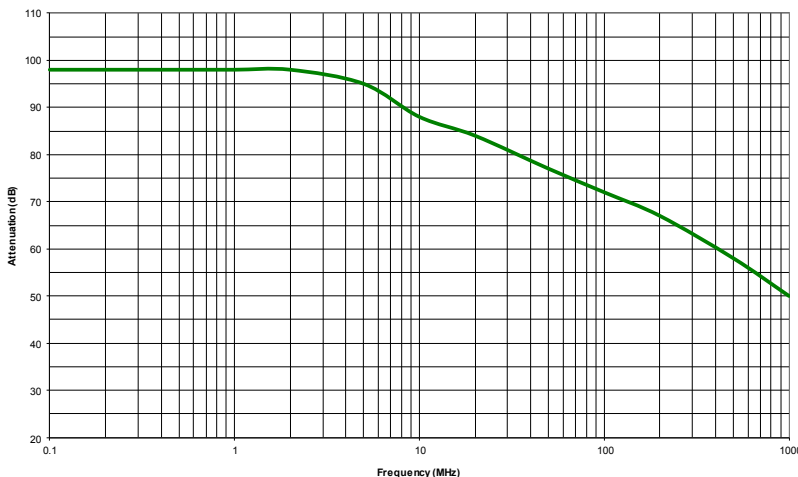


The graph to the right shows the results of PKFSTC21 screened conduit, with its appropriate fittings, tested by ERA technology, to IEC60096/2:93 (radio frequency cables part 1). Tests measured attenuation in decibels (dB) over the frequency range covered by the EMC directive, 0.1 to 1000MHz.

For Applications where electromagnetic interference is of particular concern, Adaptaflex have classified suitable conduit systems by means of symbols.

These are related in an ascending scale of performance as outlined in this explanation.

EMI Screening effectiveness of PRTC conduit



- | Symbol | Screen level | Explanation |
|--------|---|---|
| | 40db @ 100MHz Standard EMI Screen | Standard EMI Screen (Products featuring a Stainless Steel overbraid) |
| | 60db @ 100MHz Enhanced EMI Screen | Enhanced EMI Screen (Products featuring a Galvanised Steel overbraid) |
| | 75db @ 100MHz High EMI Screen | High EMI Screen (Products featuring a tinned copper overbraid) |

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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 |
|------|---------|-------------|--------|----------|----------|---------|------------|-----------|----------|-----------|---------|-----------------------|----------------|
| PR S | ATS | 2 | 4 | 2 | 4 | 4 | 0 | 6 | 7 | - | 1 | 1 | 0 |

Mechanical Properties

| Test Type | Methods / Standards | Requirements | Value |
|----------------------------|---------------------|--------------------------------------|-------|
| Crush Strength | IEC61386 | <25% crush >90% recovery | >320N |
| Tensile Strength | IEC61386 | Pull off of fitting minimum value | >100N |
| Impact Strength @-5°C | IEC61386 | No Cracks <20% deformation min value | >6.0J |
| Impact Strength @23°C | IEC61386 | No Cracks <20% deformation min value | >20J |
| Dynamic Bend radius @-5 °C | IEC61386 | 5000 cycles minimum | 4xOD |

Thermal Properties

| Test Type | Methods / Standards | Requirements | Value |
|-------------------------|---------------------|---------------------------------|-------|
| Minimum Temp | Dynamic IEC61386 | Dynamic 5000 cycles | -5°C |
| Maximum Short Term Temp | IEC61386 | Dynamic 3000 hours, 5000 cycles | 150°C |
| Minimum Static Temp | IEC61386 | Permanent Use (30,000) Hours | -40°C |
| Maximum Static Temp | IEC61386 | Permanent Use (30,000) Hours | 120°C |
| Cold Bend @ -40 °C | NFR13-903 | 2xOD | Pass |

Chemical Resistance Chart

| Key: | Green | Yellow | Red | Black |
|-----------------------|------------------------|---------------------------|--------------------------|-------------------------|
| Suitable : | ● Astm No.1 | ● Diesel oil | ● Methyl Bromide | ● Sulphur Dioxide (Gas) |
| Limited Suitability : | ● Astm No.2 | ● Diethylamine | ● MEK | ● Sulphuric Acid (10%) |
| Unsuitable : | ● Astm No.3 | ● Ethanol | ● Nitric Acid (10%) | ● Sulphuric Acid (70%) |
| Not Tested : | ● 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.

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Flammability

| Test Type | Method / Standard | Requirement | Result | Unit |
|------------------|-------------------|-------------------------------------|--------|---------|
| Oxygen Index | ISO 4589-2 | % Oxygen to support combustion >34% | 24.0 | % |
| Glow Wire Rating | IEC 60695 | No Ignition to Extinguish with 30s | 960 | °C |
| Flammability | UL94 | Vertical (V0) or Horizontal (HB) | V0 | HB/V0 |
| Flammability | IEC 61386 | Self Extinguishing - Vertical Burn | 2 | Seconds |
| Ignition Rating | NF F16-101/2 | Glow Wire & oxygen index | I2 | - |
| - | - | - | - | - |

Smoke

| Test Type | Method / Standard | Requirement | Result | Unit |
|---------------|-------------------|-----------------------------------|------------|------------|
| Fume Rating | NF F16-101 | Smoke & Toxicity | F1 | - |
| Smoke Density | BS6853:1999 | - | 0.062 | Absorbance |
| Smoke Density | TS45545-2 | R23 - HL3 <0.75 HL2 <0.9 HL1 <1.2 | 0.64 (HL3) | CIT (NLP) |
| - | - | - | - | - |

Toxicity

| Test Type | Method / Standard | Requirement | Result | Unit |
|------------------|-------------------|-------------|------------|-----------|
| Halogen Free | LUL | <0.5% | Pass <0.1% | Pass/Fail |
| Phosphorous Free | LUL | <0.5% | Pass <0.1% | Pass/Fail |
| Toxicity | BS6853:1999 | - | 3.21 | R |
| Toxicity | NES713 | <10.0 | 7.2 | - |
| - | - | - | - | - |

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 |
| BS6853 Smoke Density 3m³ | 0.02 ≤ A _s ≤ 0.03 | 0.0005 ± A _s ≤ 0.02 | A _s ≤ 0.005 | Type , S, SS |
| Zero Halogen | ✓ | ✓ | ✓ | Metallic Conduit & Fittings |
| 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 (%) |

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