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.

Image

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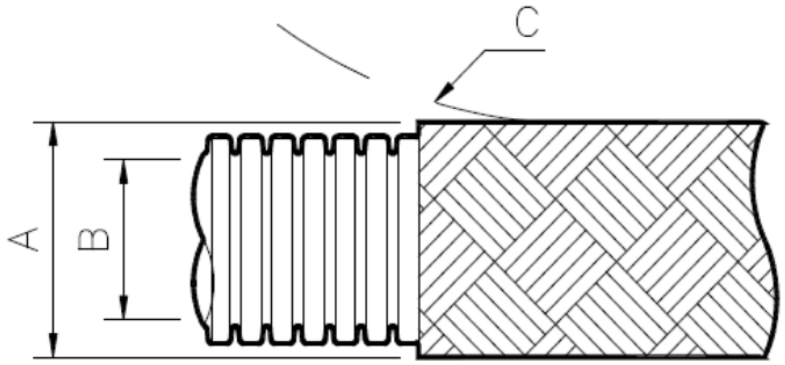
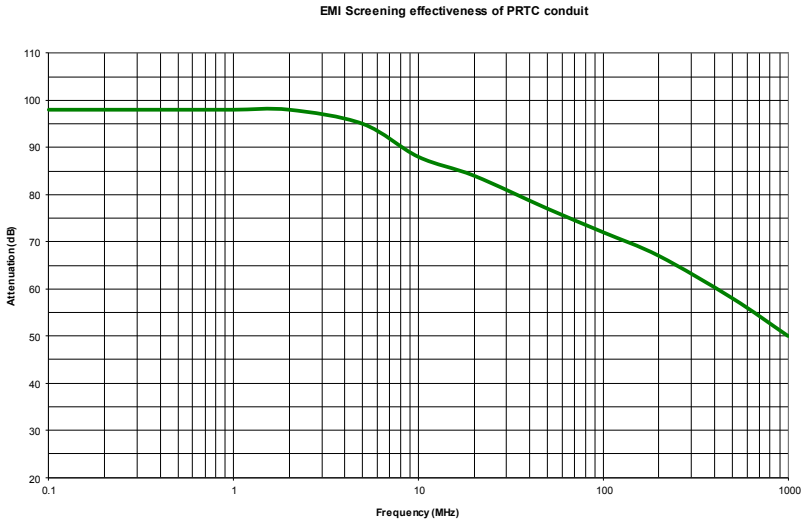
Technical & Dimensional Data

	Conduit Size			Dimensions				
Part No.	Nominal Conduit Size	NW Conduit Size	Conduit Pitch	(A) Outside Diameter	(B) Inside Diameter	(C) Min. Bend Radius	Reel Length (m)	Average Weight (KG/100m)
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.

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

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Thomas&Betts
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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 ^{0}C	NFR13-903	2xOD	Pass

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%)	

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 Type , S, SS Metallic Conduit & Fittings
BS6853 Smoke Density 3m³	0.02 ≤ A_o ≤ 0.03	0.0005 ± A_o ≤ 0.02	A_o ≤ 0.005	
Zero Halogen	✓	✓	✓	
Zero Phosphorus	✓	✓	✓	
Zero Sulpher	✓	✓	✓	
NFF16-102	I3F2	I2F2	I2F1	
EN45545-2	HL2	HL3	HL3	

Pre Test Conditions

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	EN50086/IEC61386	23 (^{0}C)	50 (%)

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