

Non-Metallic Systems

PFSS Stainless Steel Braided Conduit



Technical Characteristics

Conforms to

- BSI Kitemark KM-35161
- Low voltage directive
- NFF16-101 rating I3 F1
- UNI CEI11170 rating LR3/LR4
- EN45545-2 rating HL2
- DIN 5510-2 rating S4, SR2, ST2 FED
- ASTM E162 & E662

Approvals and Standards

Degree of mechanical protection: High flexibility & fatigue life

Degree of protection

- IP40 - N/A
- IP65 - N/A
- IP66 - Hi Spec Fittings
- IP67 - Hi-Spec Fittings
- IP68 - N/A
- IP69k - N/A

UV protection: Very High


Finish: Stainless Steel

Application: Indoors / Outdoors - low temperature applications, Rail

Normal operating temperature range	Application	Min Temp	Max Temp
	Static	- 50°C	+110°C
	Dynamic	- 45°C	+120 °C

For use with - Fitting range: Hi - Spec Type [A](#) & [B](#)

Fire performance	Test Standard	Performance Rating	
	EN45545-2	HL2	Self Extinguishing & Halogen Free
	NFF16-101 /2	I3 / F1	
	UNI CEI 11170	LR3/LR4	
	DIN 5510-2	S4 SR2 ST2	
	UL94	V2	



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

Type of material: Modified Polyamide (Nylon) 12 - flame retardant - heat stabilised , Stainless Steel 316 braid

Image



Cable Management Products Ltd.

CMG House - Station Road - Coleshill - B46 1HT - United Kingdom
 Tel: +44(0)1675 468 222 - Fax: +44(0)1675 464 930
 Technical Support e-mail: cmg.conduitsystems@abb.com - www.adaptaflex.co.uk

Non-Metallic Systems

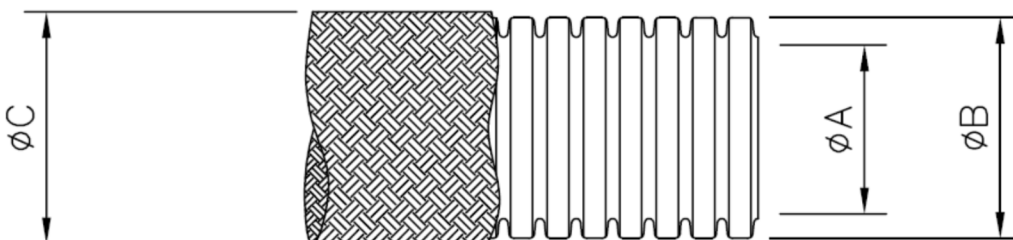
PFSS Stainless Steel Braided Conduit



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)	
PFFSSS16	16mm	13	Fine	17.2mm	11.2mm	35	50	3.8
PFFSSS21	21mm	17	Fine	23.6mm	16.5mm	45	50	6.0
PFCSSS28	28mm	23	Coarse	30.0mm	21.5mm	55	50	12.5
PFCSSS34	34mm	29	Coarse	36.0mm	27.5mm	70	50	14.5
PFCSSS42	42mm	36	Coarse	43.5mm	35.2mm	85	25	16.3
PFCSSS54	54mm	48	Coarse	56.5mm	46.2mm	110	25	23.0

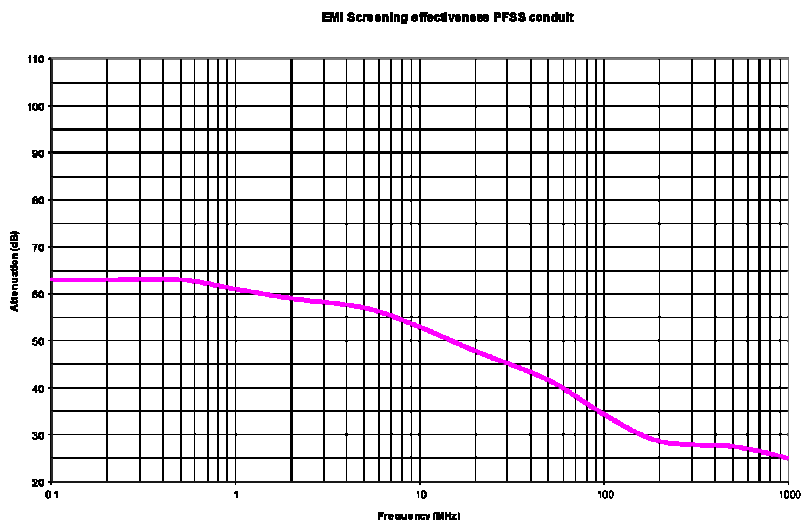
To order quote part number, colour & reel length, e.g PFCSSS21/BL/50M



EMI Screen System

The graph below shows the results of PFFSSS21 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 |
|--------|---|---|
| | 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) |

Non-Metallic Systems

PFSS Stainless Steel Braided Conduit



BS EN 61386 Classification

	Fitting	Compression	Impact	Min temp	Max temp	bending	electrical	IP solids	IP water	Corrosion	Tensile	Non-flame Propogating	Suspended load
PFSS	PBF/PBC	2	3	5	4	4	0	6	7	-	3	1	0

Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength	IEC61386	<25% crush >90% recovery	>320N
Tensile Strength	IEC61386-1	Pull off of fitting minimum value	>500N
Impact Strength @-45 °C	IEC61386-1	No Cracks <20% deformation min value	>2J
Impact Strength @23 °C	IEC61386-1	No Cracks. <20% deformation min value	>20J
Dynamic Bend radius @-45 °C	IEC61386-23	5000 cycles minimum	4xOD

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temp Dynamic	IEC61386	Dynamic 5000 cycles	-45°C
Minimum Static Temp	IEC61386	Permanent Use (30,000) Hours	-50°C
Maximum Static / Dynamic Temp	IEC61386	Permanent Use (30,000) Hours	105°C
Maximum Short Term Temp	IEC61386	Static & Dynamic 3000 hours, 5000 cycles	120°C
Cold Bend@ -40°C	NFR13-903	2 X OD	Pass

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.

Cable Management Products Ltd.

CMG House - Station Road - Coleshill - B46 1HT - United Kingdom

Tel: +44(0)1675 468 222 - Fax: +44(0)1675 464 930

Technical Support e-mail: cmg.conduitsystems@abb.com - www.adaptaflex.co.uk

Non-Metallic Systems

PFSS Stainless Steel Braided Conduit



Flammability

Test Type	Method / Standard	Requirement	Result	Unit
Oxygen Index	ISO 4589-2	% Oxygen to support combustion >34%	28.9	%
Glow Wire Rating	IEC 60695	No Ignition to Extinguish with 30s	850	°C
Flammability	UL94	Vertical (V0) or Horizontal (HB)	V2	HB/V0
Flammability	IEC 61386-1	Self Extinguishing <30s	4s	Seconds
Flammability	UNI CEI 11170		LR3/LR4	-
Flammability	DIN 5510-2	Classification to DIN 54837	S4, SR2 ST2	
Ignition Rating	NF F16-101/2	Glow Wire & oxygen index	I3	-

Smoke

Test Type	Method / Standard	Requirement	Result	Unit
Fume Rating	NF F16-101	Smoke & Toxicity	F1	-
Smoke Density	BS6853	A <0.02	-	Ao
Smoke Density	ASTM E-662	Ds <200 in both modes	72/13	Ds Max

Toxicity

Test Type	Method / Standard	Requirement	Result	Unit
Halogen Free	LUL	<0.5%	Yes	-
Phosphorous Free	LUL	<0.5%	Pass	Pass/Fail
Sulphur Free	LUL	<0.5%	Pass	Pass/Fail
Toxicity	SMP-800C	Values below permitted maximum	Pass	Pass/Fail
Toxicity	EN 45545-2	CIT _{NLP} <0.9 (R22)	0.78	

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 (%)

Cable Management Products Ltd.

CMG House - Station Road - Coleshill - B46 1HT - United Kingdom

Tel: +44(0)1675 468 222 - Fax: +44(0)1675 464 930

Technical Support e-mail: cmg.conduitsystems@abb.com - www.adaptaflex.co.uk