

TECHNICAL DATA SHEET

# PMAFLEX Multilayer - XPCSF - Corrugated Conduit

Very flexible, heavy-duty

**PMA**



Flexible, weather resistant multilayer conduit suitable for use in external rail rolling stock applications.



#### Applications:

Static and dynamic external applications on railway vehicles

- On the roof   
PA12 outer layer has excellent UV resistance characteristics
- On inter-carriage connections   
Excellent resistance to fatigue when exposed to continuous bending
- On bogies and undercarriage   
Excellent resistance to impact at low temperatures

#### Features & Benefits:

- Excellent mechanical characteristics, also under extreme climatic conditions (low temperature and low humidity)
- Excellent flexibility
- Self-extinguishing
- High fire safety specification

#### Materials:

- High-grade, specially formulated PA12/PA12

#### Compatible with:

- PMAFIX Pro, PMAFIX fittings
- PMA accessories

#### Temperature range:

- -50°C ... +95°C continuous, +150°C short-term

#### Conforms to:

- EN 45545-2 HL3 (R22 & R23)

#### Weathering resistance:

- Excellent UV resistance and weathering characteristics

#### Colour:

- Outer layer: black
- Inner layer: orange

#### Chemical properties:

- Please refer to [www.pma.ch](http://www.pma.ch)  
(Technical Information / Chemical Resistance)

#### Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

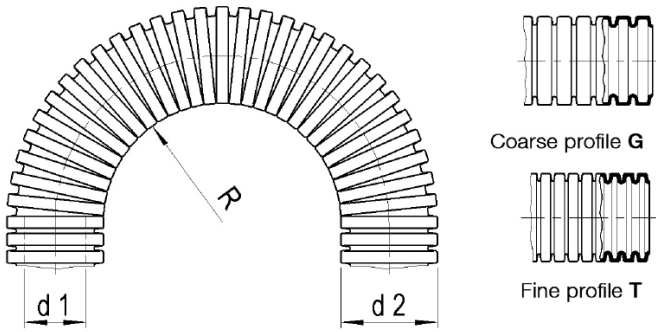
#### XPCSF-Index

min.											max.
Ductility	[Progressive bar chart]										
Fatigue reversed bending	[Progressive bar chart]										
Compression resistance	[Progressive bar chart]										
Low temperature performance	[Progressive bar chart]										
Weathering resistance	[Progressive bar chart]										

**Product selection:**

Part no.	Profile	Conduit size		rec. fitting thread size		Dimensions in mm (nom.)				Weight kg/100 m	Packing unit metre
		NW	metric	PG	metric	d1	d2	stat. R	dyn. R.		
black / orange	T/G										
XPCSFT-07BO	T	7	10	7	M12x1.5	6.6	10.0	15	40	2.5	100
XPCSFT-10BO	T	10	12	9	M12x1.5	9.6	12.8	20	50	3.1	50
XPCSFT-12BO	T	12	16	11	M16x1.5	11.8	15.6	25	65	4.2	50
XPCSFG-17BO	G	17	20	16	M20x1.5	15.5	21.1	35	85	7.5	50
XPCSFG-23BO	G	23	25	21	M25x1.5	21.5	28.4	45	110	12.0	50
XPCSFG-29BO	G	29	32	29	M32x1.5	27.4	34.5	55	135	15.0	50
XPCSFG-36BO	G	36	40	36	M40x1.5	36.0	42.4	65	170	19.0	30
XPCSFG-48BO	G	48	50	48	M50x1.5	47.1	54.5	85	220	25.0	30
XPCSFG-56BO	G	56	68	-	-	56.7	67.5	110	270	36.0	30
XPCSFG-70BO	G	70	80	-	-	67.1	79.6	130	320	52.0	10
XPCSFG-95BO	G	95	106	-	-	90.9	107.0	170	430	76.5	10
XPCSFG-125BO	G	125	146	-	-	125.0	146.0	230	580	95.0	6

Our customer service dept. or local distribution partner will be pleased to help you concerning product availability and lead time



stat. R. = min. bending radius for static (fixed) installation

dyn. R. = min. bending radius for dynamic (flexible) installation

Mechanical Properties:	Value:	Test parameters:	Test method:
Impact strength	> 7.5 J	(+23°C)	PMA DO 9.21-4330
	> 12.2 J	(-18°C)	CSA C22.2 Nr. 227.3 / UL 1696
	class 3, > 2J	(-45°C)	IEC EN 61386
	class 4, > 6J	(-15°C)	IEC EN 61386
	class 5, > 20J	(+23°C)	IEC EN 61386
Compression strength	> 250 N	(50 x 50 mm)	PMA DO 9.21-4320
	> 500 N	(100 x 100 mm)	PMA DO 9.21-4320
	class 2		IEC EN 61386
Resistance to fatigue	> 5'000 cycles	(-45°C)	IEC EN 61386-23
	1'000'000 cycles	Jumper cable test	TSSC-EC-TP00061
Pull-out resistance conduit - fitting series			
PMAFIX Pro	> 460 N		PMA DO 9.21-4610
PMAFIX IP68	> 430 N		PMA DO 9.21-4610
PMAFIX IP66	> 380 N		PMA DO 9.21-4610
PMAFIX Pro, PMAFIX IP66 & IP68	class 2		IEC EN 61386

Note: Testing at 23°C, 50% r.h., conduit nominal width 17, unless otherwise stated

Thermal properties:	Value:	Test parameters:	Test method:
Continuous application temperature	-50 ... +95°C		PMA DO 9.21-4510
Upper application temperature	+110°C	(20'000 h)	PMA DO 9.21-4360
Short-term	+150°C	(168 h)	PMA DO 9.21-4360
Application temperature range	-45 ... +105°C		IEC EN 61386

Fire safety properties:	Value:	Test parameters:	Test method:
Fire performance	non flame-propagating		IEC EN 61386
Fire hazard level	HL3		EN 45545-2 (R22)
Oxygen index	> 32 %		EN ISO 4589-2
Smoke density	< 150 Ds max.		EN ISO 5659-2 (25 kW/m <sup>2</sup> )
Toxicity	< 0.75 CIT <sub>NLP</sub>		NF X 70-100-1/-2: (600°C)
Fire hazard level	HL3		EN 45545-2 (R23)
Oxygen index	> 32 %		EN ISO 4589-2
Smoke density	< 300 Ds max.		EN ISO 5659-2 (25 kW/m <sup>2</sup> )
Toxicity	< 1.5 CIT <sub>NLP</sub>		NF X 70-100-1/-2: (600°C)

Note: Requirement sets (R22 & R23) apply for conduit sizes up to and including NW48

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