TECHNICAL DATA SHEET

# PMAFLEX Multilayer - XPCS - Corrugated Conduit

## Very flexible, heavy-duty

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)
- Very Good flexibility
- Self-extinguishing
- High fire safety specification

**Materials:**
- High-grade, specially formulated PA12/PA6

**Compatible with:**
- PMAFIX Pro, PMAFIX fittings
- PMA accessories
- PMAGRIP flange

**Temperature range:**
- –50°C ... +95°C continuous, +150°C short-term

**Conforms to:**
- EN 45545-2 HL2 (R22 & R23)
- NFPA 130

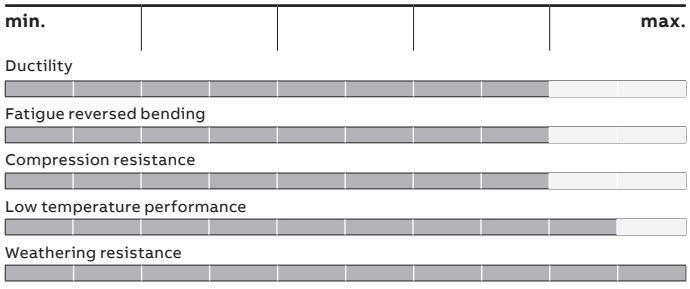
**Weathering resistance:**
- Excellent UV resistance and weathering characteristics

**Colour:**
- Outer layer: black
- Inner layer: green

**Chemical properties:**
- Please refer to www.pma.ch
  (Technical Information / Chemical Resistance)

**Environmental properties:**
- Free from halogens and cadmium
- RoHS and REACH compliant

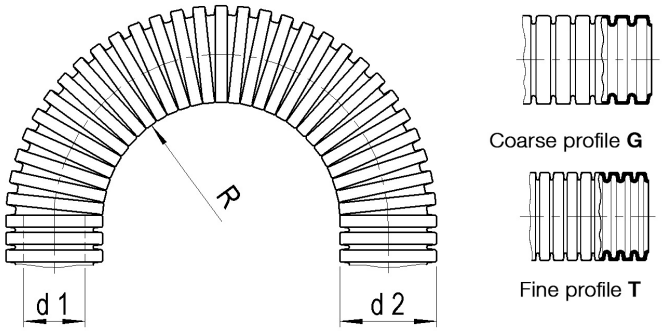
**XPCS-Index**



**Product selection:**

| Part no. | Profile | Conduit size | | rec. fitting thread size | | Dimensions in mm (nom.) | | | | Weight | Packing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| black/green | T/G | NW | metric | PG | metric | d1 | d2 | stat. R | dyn. R. | kg/100 m | metre |
| XPCST-07BG | T | 7 | 10 | 9 | M12x1.5 | 6.9 | 10.0 | 15 | 40 | 2.2 | 100 |
| XPCST-10BG | T | 10 | 12 | 9 | M12x1.5 | 9.8 | 12.8 | 20 | 50 | 2.8 | 50 |
| XPCST-12BG | T | 12 | 16 | 11 | M16x1.5 | 12.1 | 15.6 | 25 | 65 | 3.8 | 50 |
| XPCST-17BG | T | 17 | 20 | 16 | M20x1.5 | 16.5 | 21.1 | 35 | 85 | 5.7 | 50 |
| XPCSG-17BG | G | 17 | 20 | 16 | M20x1.5 | 15.8 | 21.1 | 35 | 85 | 6.3 | 50 |
| XPCSG-23BG | G | 23 | 25 | 21 | M25x1.5 | 21.9 | 28.4 | 45 | 110 | 9.9 | 50 |
| XPCSG-29BG | G | 29 | 32 | 29 | M32x1.5 | 27.7 | 34.5 | 55 | 135 | 13.3 | 50 |
| XPCSG-36BG | G | 36 | 40 | 36 | M40x1.5 | 36.6 | 42.4 | 65 | 170 | 16.0 | 30 |
| XPCSG-48BG | G | 48 | 50 | 48 | M50x1.5 | 47.5 | 54.5 | 85 | 220 | 22.8 | 30 |
| XPCSG-56BG | G | 56 | 68 | - | - | 56.7 | 67.5 | 110 | 270 | 33.0 | 30 |
| XPCSG-70BG | G | 70 | 80 | - | - | 67.5 | 79.6 | 130 | 320 | 46.0 | 10 |
| XPCSG-95BG | G | 95 | 106 | - | - | 91.6 | 107.0 | 170 | 430 | 66.0 | 10 |

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 | > 6 J | (+23°C) | PMA DO 9.21-4330 |
| | > 12.2 J | (-18°C) | CSA C22.2 Nr. 227.3 / UL 1696 |
| | class 3, > 2 J | (-45°C) | IEC EN 61386 |
| | class 4, > 6 J | (-15°C) | IEC EN 61386 |
| | class 5, > 20 J | (+23°C) | IEC EN 61386 |
| | | | |
| Compression strength | > 270 N | (50 x 50 mm) | PMA DO 9.21-4320 |
| | > 540 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 | HL2 | | EN 45545-2 (R22) |
| Oxygen index | > 28 % | | EN ISO 4589-2 |
| Smoke density | < 300 Ds max. | | EN ISO 5659-2 (25 kW/m2) |
| Toxicity | < 0.9 $CIT_{NLP}$ | | NF X 70-100-1/-2: (600°C) |
| | | | |
| Fire hazard level | HL2 | | EN 45545-2 (R23) |
| Oxygen index | > 28 % | | EN ISO 4589-2 |
| Smoke density | < 600 Ds max. | | EN ISO 5659-2 (25 kW/m2) |
| Toxicity | < 1.8 $CIT_{NLP}$ | | NF X 70-100-1/-2: (600°C) |
| | | | |
| Fire performance NFPA 130: | | | NFPA 130 |
| - Flammability | compliant | | ASTM E 162 |
| - Smoke density | compliant | | ASTM E 662 |
| | | | |
| Heat and visible smoke | 23.22 MJ/kg | | ASTM E 1354 |
| Smoke emission toxicity | compliant | | Bombardier SMP 800-C |
| Smoke emission toxicity | compliant | | Boeing BSS 7239 |

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

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TDS - XPCS - 16160-13