

5.0/3.5MM DIRECT INSTALL TUBE ASSEMBLIES.

Assemblies of PE tubes, each with low friction performance suitable for fibre blowing. The tube bundle is surrounded by a layer of moisture-barrier aluminium tape (shown green for clarity) and a flexible sheath of black PE. These products are designed for use in ducts and sub-ducts.

The sheath is marked in one plane, at 1 metre intervals, with the following legend:

—||| M * **PRYSMIAN TUBING PGH** yyyy **DIRECT INSTALL n WAY**

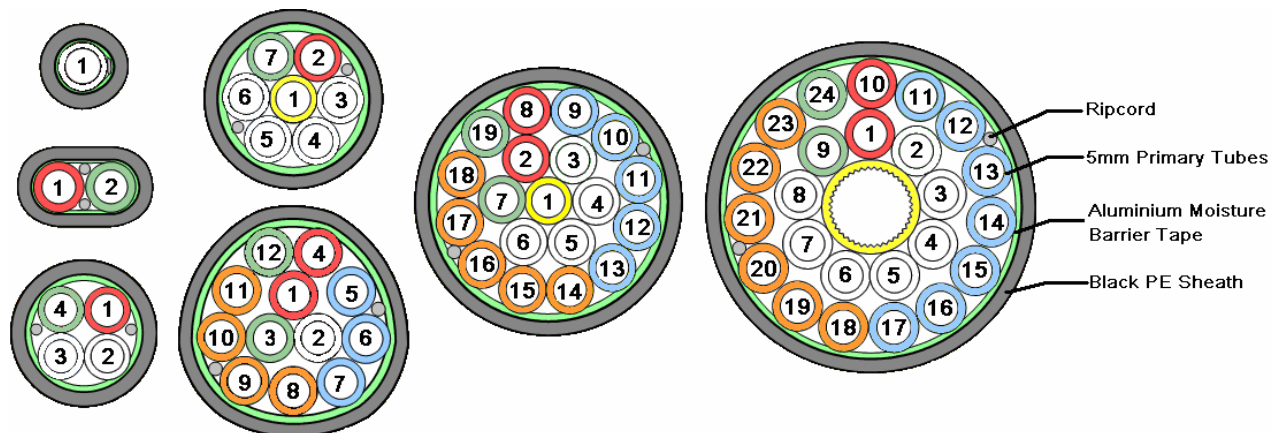
where: ||| - sequential length mark
 yyyy - year of manufacture
 n - number of PE tubes

Primary Tubes Technical Details

Internal diameter (nominal): 3.5mm
 External diameter (nominal): 5.0mm
 Operation Pressure rating: 10 Bar

Assembly Technical Details

| | Reference | Nom OD (mm) | Max Tensile (N) | Weight (kg/km) | Bend Radius (mm) | Crush (N) |
|-----------|-----------|-------------|-----------------|----------------|------------------|-----------|
| DI-1 Way | 5500510 | 8.6 | 500 | 50 | 100 | 1000 |
| DI-2 Way | 5500511 | 14 x 8.6 | 800 | 80 | 165 x 105 | 1000 |
| DI-4 Way | 5500512 | 15.3 | 1200 | 120 | 185 | 1000 |
| DI-7 Way | 5500513 | 18.3 | 1650 | 165 | 220 | 1000 |
| DI-12 Way | 5500514 | 23.5 | 2450 | 245 | 285 | 1000 |
| DI-19 Way | 5500515 | 28.3 | 3400 | 340 | 340 | 1000 |
| DI-24 Way | 5500516 | 33.3 | 4400 | 440 | 400 | 1000 |



Colour Code

| 1 Way | 2 Way | 4 Way | 7 Way | 12 Way | 19 Way | 24 Way |
|-------------|-----------|-----------------|------------------|------------------|-------------------|-------------------|
| 1 - Natural | 1 - Red | 1 - Red | 1 - Yellow | 1 & 4 - Red | 1 - Yellow | 1 & 10 - Red |
| | 2 - Green | 2 & 3 - Natural | 2 - Red | 2 - Natural | 2 & 8 - Red | 2 to 8 - Natural |
| | | 4 - Green | 3 to 6 - Natural | 3 & 12 - Green | 3 to 6 - Natural | 9 & 24 - Green |
| | | | 7 - Green | 5 to 7 - Blue | 7 & 19 - Green | 11 to 17 - Blue |
| | | | | 8 to 11 - Orange | 9 to 13 - Blue | 18 to 23 - Orange |
| | | | | | 14 to 18 - Orange | |

SS/10.08

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Primary Tubes Type Tests:

| Mechanical Properties | International Standard | Test Conditions | Performance |
|-----------------------|-------------------------------|---|--|
| Tensile Strength | IEC 60794-1-2 Method E1 | microduct length under tension: > 1m Tensile load: 0.7 W* Rate of Extension: ≥ 20mm/min Duration of max load: 10 min Where Maximum tensile load = 0.7x 9.81 x W , N, W = mass of 1Km of component in Kg | Pass : No permanent damage or deformation to the primary tubing or component parts of the sheath assembly after an applied load at 20mm/minute. |
| Kink | IEC 60794-1-2 Method E10 | Diameter: ≤20 xO D | Pass : The outer and inner diameter of the microducts shall show, under visual examination without magnification no damage and no reduction of diameter greater than 15% |
| Impact | IEC 60794-1-2 Method E4 | Striking surface radius: 10 mm Impact: 1 Joules Number of impacts: 3 Recovery Time: 1 hr | Pass : Under visual examination, without magnification, there shall be no damage to the microduct. There shall be no residual deformation greater than 15% of the microduct diameter and no splitting or permanent damage. The imprint of the anvil on the sheath is not considered as mechanical damage. |
| Crush | IEC 60794-1-2 Method E3 | Sample length: 1 m Load : 700N Duration of maximum load: 1 minute No applied loads: 3 (500mm apart) Recovery time: 1 hr | Pass : No permanent damage shall be imparted to the tubes as a result of this test Permanent deformation of the individual primary tube diameter shall be less than 0.5mm as a result of this test. |
| Bend | IEC 60794-1-2 Method E11 | No Turns: 5 Mandrel diameter: ≤12 xOD Number of Cycles: 3 | Pass : No permanent damage shall be imparted to the tubes as a result of this test Permanent deformation of the individual primary tube diameter shall be less than 0.5mm as a result of this test. |
| Friction | | Sample length: 1.5 m Mandrel diameter: 300mm The sample length is secured with 450wrap around the mandrel with one end of the tube hanging downwards, the other end pointing horizontally towards the tensile machine | Pass : A 5kg weight shall be pulled at 1000mm/min and travel 100mm. An average force of 2 pulls shall be recorded to give a coefficient of friction less than 0.1 |
| Pressure performance | IEC 86A/1205/CD Annex C | Test temperatures: 0°C to +40°C Pressure medium: Water (+anti freeze) Proof test pressure: 12925 mbar Duration of proof test pressure: 24 hours Minimum burst test pressure: 25850 mbar | Pass : Primary tubing shall be capable of sustaining the stated requirements without bursting or loss of pressure. |

Tube Assembly Type Tests:

| Mechanical Properties | International Standard | Test Conditions | Performance |
|-----------------------|--------------------------|--|--|
| Tensile Strength | IEC 60794-1-2 Method E1 | microduct length under tension: > 1m Tensile load: 1.0 W* Rate of Extension: ≥ 20mm/min Duration of max load: 10 min Where Maximum tensile load = 1.0x 9.81 x W , N, W = mass of 1Km of component in Kg | Pass : No permanent damage or deformation to the primary tubing or component parts of the sheath assembly after an applied load at 20mm/minute. |
| Bend | IEC 60794-1-2 Method E11 | No Turns: 5 Mandrel diameter: ≤12 xOD Number of Cycles: 3 | Pass : The outer and inner diameter of the microducts shall show, under visual examination without magnification no damage and no reduction of diameter greater than 15% |
| Kink | IEC 60794-1-2 Method E10 | Diameter: 20 xOD | Pass : No permanent damage shall be imparted to the sheath or tubes as a result of this test Permanent deformation of the individual primary tube diameter shall be less than 0.5mm as a result of this test. |
| Impact | IEC 60794-1-2 Method E4 | Striking surface radius: 10 mm Impact: 3 Joules Number of impacts: 3 Recovery Time: 1 hr | Pass : Under visual examination, without magnification, there shall be no damage to the microduct. There shall be no residual deformation greater than 15% of the microduct diameter and no splitting or permanent damage. This shall be verified by passing the inner clearance test. The imprint of the anvil on the sheath is not considered as mechanical damage. |
| Crush | IEC 60794-1-2 Method E3 | Sample length: 1 m Load : 1000N Duration of maximum load: 1 minute No applied loads: 3 (500mm apart) Recovery time: 1 hr | Pass : No permanent damage shall be imparted to the sheath or tubes as a result of this test Permanent deformation of the individual primary tube diameter shall be less than 0.5mm as a result of this test. |