



# Microduct

## 12/9.6mm LSZH

### Description

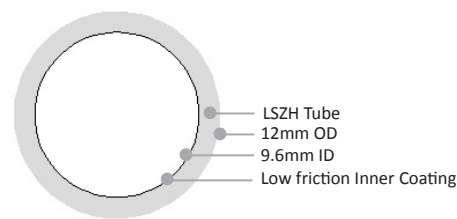
Low Fire Hazard tube providing an indoor pathway for blown fibre cables. Produced with materials designed for low smoke emission and containing no halogens (LSZH - Low Smoke Zero Halogen Materials)

Suitable for indoor use only. The tube can be used as a one way fibre route but should be handled with care and used in areas where mechanical properties are less demanding.

Not suitable for installation by pulling, must be laid directly or blown in.

With permanent low friction solid inner lining for optimised blowing distances.

Can be supplied as single loose tubes or as sheathed assemblies of various configurations.



Schematic drawing, not to scale

### Dimensions & Material

O.D/I.D Nominal (mm)	O.D Min-Max (mm)	Wall Min- Max (mm)	Weight (g/m)	Min Bend Radius (mm)	Max Tensile Pulling by hand only (N)	Max Pressure (bar)
12/9.6	11.95-12.1	1.0-1.2	55.5	240	205	12
<b>Material</b>	Low Toxic Gas Emission, Low Smoke Generation, ZERO % Halogen Content (chlorine, bromine, fluorine) according to IEC 60754-1					
<b>Inner Wall</b>	Smooth wall as standard					
<b>Low friction</b>	Permanent co-extruded low friction internal coating with coefficient of friction typically less than or equal to 0.09					
<b>Colour</b>	White solid as standard - colour optional					
<b>Elongation at break</b>	160% min and 128% min after 7 days at 100°C					
<b>Temperature Index</b>	280°C minimum (ISO 4589-3)					
<b>Operating Temperatures</b>	Transport, Installation and Service -20°C to +60°C Operation (Blowing) -5°C to +35°C					
<b>Ovality</b>	3% production; 5% on drum					

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### Tests

Fire Test	Test Standard	
Flammability	DIN EN 60332-1-2:2004 + A11:2016, DIN EN 50339:2011 + A1:2016, Pass	
Smoke Emission	To DIN EN 61034-2:2005 +A1:2013	
Acid Content	DIN EN 60754-2:2014	
Fire Behaviour (CPR)	B2 ca s1a d2 a1 class; Tested to EN 50399, EN 60332-1, EN 61034-2 & EN 60754-2. Evaluated to EN 13501 (Note the ducting was tested without fibre)	
Classification Code	DIN EN 61386-22: 2-1-2-1-2-2-0-0-0-1-0	
Type Test	Test Standard	Requirement
Tensile Performance	IEC 60794-1-21-E1	205N, 10 min, v=100mm/min
Pressure	IEC 60794-1-22 - F13	2.5xPressure=30bar, 0.5h, 20 °C
Crush	IEC 60794-1-2-E3	200N, 60 s, 1h recovery time There shall be no splitting nor permanent damage. Any permanent residual deformation shall not exceed 15%.
Impact	IEC 60794-1-21-E4	1J (rec. 1h)
Bend & Repeated bend	IEC 60794-1-21-E11 & E6	D= 40 x OD = 480mm, 25 cycles D= 40 x OD = 480mm, 3 turn Bend radius ≤ 240mm
Kink	IEC 60794-1-21-E10	D= 20 x OD = 240mm
Friction Properties & Lubrication	Radius Inhouse	1.5m of tube is secured with 450° wrap around a 300mm mandrel with one end of the tube hanging downwards. The other end pointing horizontally towards the tensile testing machine. A 2kN twine is installed through the tube and connected to a 5kg weight. The twine shall be pulled at 1000mm/min and travel a minimum of 100mm. The average force of 2 pulls shall be recorded to give a coefficient of friction less than 0.09.

### Marking

The following print (Inkjet) is applied at 1-meter intervals:

- RADIUS
- Product Description (e.g 12/9.6mm)
- Batch Number
- Meter Count
- Line Number

Customer specific print is optional

### Packing

Microduct will be shipped on either disposable wooden drums, treated wooden drums. Duct end will be capped off.

### Delivery Lengths

Available in various drum lengths, typically 1000m. Other lengths available.

Drum lengths to be agreed at the time of order.