

Microtubes MIKROHARD

Single wall protective pipes **MIKROHARD** are designed for the latest technology used for optical networks FTTx (Fibre-to-the-X) micro technology. Microtubes can be used for installation in an existing ducts of PE-HD tubes (MIKROHARD DI), same as for direct installation in the ground without the use of additional protective tube (MIKROHARD DB).

Various quantities of microtubes can be installed inside OPTOHARD protectors depending on the inner diameter of the protector and the outer diameter of the microtube (these quantities are derived from the need to install microcables with varying numbers of optical fibres).

Microtube designs:

- standard (DI)
- hardened (DB)

Standard primary microtubes (DI)

• these are designed for installation into existing OPTOHARD protective tubes, both empty and partially full. Microtubes are installed by blowing or pulling for shorter distances.

item	outer diameter	inner diameter	min. bend radius	max. installation tension force	max. blowing pressure
	mm	mm	mm	N	bar
5/3,5	5	3,5	50	100	12
7/5,5	7	5,5	70	200	16
10/8	10	8	100	380	16
12/10	12	10	120	490	16
14/12	14	12	140	500	16

Hardened microtubes (DB)

• these are designed for installation into trenches when constructing new access networks without additional protective tubes. The reinforced walls and mechanical properties of these microtubes ensure adequate protection for optical microcables.

item	outer diameter	inner diameter	min. bend radius	max. installation tension force	max. blowing pressure
	mm	mm	mm	N	bar
7/3,5	7	3,5	60	390	20
10/5,5	10	5,5	100	750	20
12/8	12	8	120	760	20
14/10	14	10	140	980	20
16/12	16	12	160	980	15
20/16	20	16	500	1000	16

Tube design

- STANDARD microtubes are produced with an inner wall - smooth, grooved or grooved with sliding layer.
- HARDENED microtubes are produced with an inner wall - smooth, grooved or grooved with sliding layer.

Material

- High-density polyethylene (PE-HD).
- With UV stabiliser on request.

Coefficient of internal friction

- Low coefficient of internal friction (<0,1).

Temperature resistance

- Installation temperature: PE-HD microtubes can be handled within a temperature range of -10°C to +50°C.
- Operating temperature: of -40°C to +70°C.
- Storage temperature: of -40°C to +60°C.

Resistance to induced currents

- Standard polyethylene is an excellent insulator. No induced currents are created in the pipe, even when the piping system is near a high-voltage line.



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Resistance to environmental factors

- The chemical resistance of the microtubes is guaranteed through the use of PE-HD.

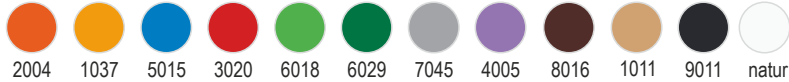
Connection of microtubes

- “Straight” connectors, reduction connectors, terminals (blind flanges), gas-tight and water-tight grommets.
- Properties: easy to install. Transparent design.
- Accessories available for all size ranges.

Microtube colours

- Microtubes are produced in the colours required by the customer. Determination of microtubes with different colors is very helpful in identifying the microtube, when using more of them in a single system.

RAL:



Labelling of microtubes

- During the production process microtubes are labelled with a description. The lettering is standard black and min. 2 mm in size.
- Standard description: material * size * production date * production time * code * length. Labels always spaced 1 m apart.

Environment

- The use of MIKROHARD microtubes does not damage the environment. The used material is fully recyclable.

Microtube packaging

- Supplied on drums (front made of plywood, core made of pressed paper).

Reel dimensions:

front diameter	core diameter	drum width	bore
mm	mm	mm	mm
900	300	620	75
1 200	400	790	75

Length of coils:

micropipe outside diameter	coil length
mm	m
5	5 000 (10 000)
7	2 500 (4 000)
10	2 500
12	2 000
14	1 500
16	1 000
20	600

Small coils (without core):

OD of pipe	coil length	coil width	OD of coil	ID of coil
mm	m	mm	mm	mm
7	200	100	750	600
7	500	100	850	600
10	200	100	800	600
10	400	100	950	600
12	200	200	800	600
12	400	200	900	600

Storage

- Up to 3 months if stored outdoors in Central Europe.
- Microtubes must be protected against direct sunlight.

