

DESCRIPTION,
APPLICATION

Microduct DuraMicro DI 5/3,5 mm - SK

Microduct DuraMicro Direct Install (DI) is designed for the protection of optical microcables. Outer layer (1) is smooth, made of high density polyethylene (HDPE). Co-extruded smooth inner core (2), is made of Silicore™ permanently solid lubricant significantly reducing the surface friction. Strong mechanical properties of the microduct make it suitable for placing into the ground; details of installation methods and conditions are provided in respective Installation Manuals. Microcables can be installed into the microduct by pulling or blowing; the microduct is designed to withstand inner pressure of minimum 20 bars applied during actual cable installation. The microduct can also be supplied as a part of DuraMulti or DuraFlat bundles.



STANDARDS

- DURA-LINE CT's quality system is certified according to EN ISO 9001:2009, EN ISO 14001:2005 and OHSAS 18001:2008
- The microduct does not contain chemicals in accordance to the Directive of the European Parliament and the Commission no. 2006/1907/EC (REACH)
- The microduct meets requirements of the Directive of the European Parliament and the Commission no. 2011/65/EU (RoHS), as amended on January 3, 2013 (RoHS II).

MATERIAL
MODIFICATION

The microduct can be supplied in various material modifications for specific applications, containing different types of additives or their combinations:

- **Standard** is made of virgin HDPE material that is suitable for most telecom applications;
- **UV stabilized additives** increase material resistance to ultraviolet radiation. Storage time of UV stabilized products in open air can be prolonged up to 24 months at Central Europe's outdoor climatic conditions. The storage time can be further prolonged with increased dosing of UV stabilizers based on customers' specifications.
- **Antistatic additives** decrease microduct's electrical surface resistance
- **Anti-rodent additives**, based on special repellents, increase product resistance to rodents.

MARKING

Microducts are printed along the entire length with text according to the customer's requirements. Printing colour is in contrast to the microduct colour. Printing scheme is repeated each 1 meter along the microduct, unless specified otherwise.

Example of the printing scheme:

DURA-LINE CT DuraMicro DI 5/3,5 mm SILICORE 12/2014 LOT No 12345678 0000 m >|<

COLOR LIST

Microducts can be manufactured in natural translucent colour, or in wide range of solid-body colours. For standard range of colours, see the table of RAL swatch; additional colours are available on request.

2009	2003	3020	6029	6018	6017	6001	6027	5015	5021
1016	1018	1021	3015	4003	4006	8015	8017	9017	1015
7045	9003	tran							

* Additional colours are available by request.

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PACKING AND STORAGE

The microduct is supplied wound on plywood disposable drums with cardboard cores (MTBxx) of appropriate size. Upon customer request, other drums for shipping and handling the microduct can be used (plastic, wooden etc.). The winding ends app. 10mm below the flange edge, and is completely wrapped by a black stretch foil for UV protection.

Ends of the microduct are sealed with plastic caps preventing ingress of impurities into the microduct.

Identification stickers are placed on the drum flange.

Additional information on suitable drum types for this product, drum dimensions and its other parameters can be found in **TDS DuraMicro packaging**

MATERIAL PARAMETERS

Parameter	Value	Standard, conditions
Material Density	≥ 950 kg/m ³	ISO 1183
OIT Stability	≥ 60 minutes	EN 728, 190°C
Environmental stress crack resistance, ESCR	≥ 1 000 hours	ASTM D 1693, Condition A

MECHANICAL PARAMETERS

Detailed description of methods to determine mechanical parameters are in company working standards CWS 103-2014 and CWS 104-2014 (LSHF).

Parameter	Value	Standard, conditions
Outer diameter (OD)	5±0,1 mm	CWS 103-2014
Inner diameter (ID)	min. 3,4 mm	CWS 103-2014
Wall thickness (WT)	min. 0,7 mm	CWS 103-2014
Ovality	max. 5%	CWS 103-2014, before coiling
Blown ball test (BB test)	pass	CWS 103-2014, ball diameter 3,0 mm
Inner coefficient of friction	max. 0,1	CWS 103-2014
Burst pressure	min. 50 bar	ČSN EN ISO 1167-1, 2
Tensile performance	no damage after the test	EN ISO 527
Kink	min. 100 mm	ČSN EN 60794-1-2, method E10
Crush	no damage after the test	ČSN EN 60794-1-2, method E3, sample length 250 mm, load 450 N, recovery time 1 h
Impact	no damage after the test	ČSN EN 60794-1-2, method E4h
Bending stiffness	min. 0,012 N.m ²	CWS 103-2014
Thermal expansion	*1,6.10 ⁻⁴ K ⁻¹	ISO 11359-2, temperature range from -20°C to
Longitudinal reversion	max. 3%	ČSN EN ISO 2505, oven, 110°C, 60 min.
Elongation at break	≥ 450 %	ISO 527
Percentage deflection	≤ 3 %	ISO 2505+70°C
Pipe stiffness	≥ 250 N	EN IEC 61386-24
Determination of friction	≤ 0,1	British Telecom specifications LN 461 D, LN 650
Yield Point	≥ 18 MPa	ISO 527
Standard Dimension Ratio (SDR = OD/WT)	*6,7	-
Weight	*10 kg/km	-
Transport and storage temperatures	from -40°C to +70°C	-
Installation temperatures	from -20°C to +50°C	-
Operating temperatures	from -40°C to +70°C	-
Installation tensile force	max. 150 N	-
Recommended cable dimens. for blowing	from 1,1 to 2,5 mm	-
Minimum bending radius	50 mm	-
Blowing pressure	20 bar	max. 2 hours at max. +50°C
Outdoor exposure limit	max. 12 months	Central Europe conditions
Product lifetime when burried underground	at least 50 years	-

* informative value