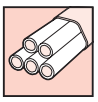
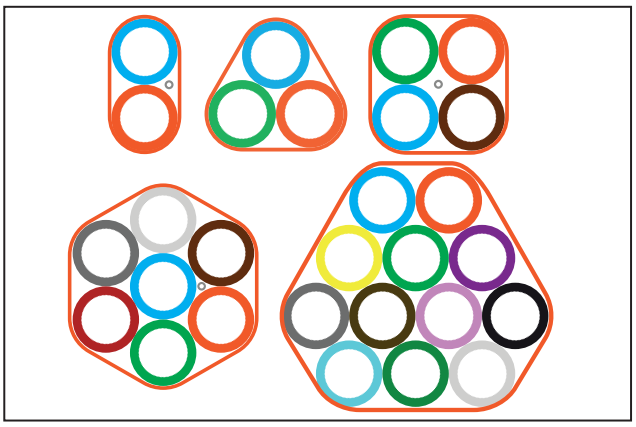


Technical Data Sheet

Microduct Bundles 7/3.5mm

Direct Bury / Thick Walled / HDPE



Microduct Bundles 7/3.5mm.

Application/Product Description

Direct Bury (DB) type of microducts are thick wall products that attain their mechanical robustness and functional performance through their intrinsic thick walls and need no further protection at underground installations. Microducts conform to BS EN 61386 and BS EN 60794-5.

The substantial wall thickness of the microduct and the type of raw material give the bundle features enabling to be used as a direct buried product where the product is installed straight into the ground or as a direct install product, where it is installed into an existing duct.

HellermannTyton microduct bundles are made of virgin high density halogenfree polyethylene - HDPE. Every microduct has a permanent, co-extruded silicone compound inner liner giving a coefficient of friction of less than 0.1. The inner surface of microduct can be manufactured with longitudinal grooves or with a smooth finish. The bundle has a sheath suitable for installation, handling and marking.

The colours of microducts and the color of the sheath as well as the placement of colored microducts in a bundle are fully customizable. Both options - fully colored microducts or natural color with colored stripes - are available. The inclusion of tracing wire, for detecting installed bundles, must be specified by the customer when ordering.

General Data

Mechanical characteristics			
Criteria	**Test Method**	**Examination acc to IEC 60794-5-10 or acc to customer specification**	**Requirements**
Pressure withstand	IEC 60794-1-22, Method F13	Temp 20°C, duration 30 min; 2.5x installation pressure	No leaks*
	IEC 60794-1-22, Method F13	Temp 40°C, duration 24h; 1.3x installation pressure	No leaks*
	EN 50411-6-1:2011 Annex B	Temp 20°C, duration 30min; 18 bar	No leaks*
	Burst pressure	Temp 20°C	Min. 50 bars
Tensile performance	IEC 60794-1-21, Method E1	Temp length >1m, tensile load ≥ weight of 1km x 9.81 in N, load 10 min	No damage**
Kinking	IEC 60794-1-21, Method E10	Temp 23 +/-3° C; the length of non-kinked looped microduct and calculate d=C/π	No kinking 20x OD
Crush	IEC 60794-1-21, Method E3A	Test length 250mm, F= 500N (Single), 1000N (DI bundle), 2000N (DB bundle), duration 1min, recov 1h	No damage**
Impact	IEC 60794-1-21, Method E4	Impact energy 15J, striking surface radius 300mm	No damage**
Bending	IEC 60794-1-21, Method E11B	Mandrel diam 40x OD, 3 cycles	No damage**
Repeated bending	IEC 60794-1-21, Method E6	Bending diam 40x OD, 25 cycles	No damage**
Torsion	IEC 60794-1-21, Method E7	Test length 2m, 180° clockwise/return and 180° counter-clockwise/return - 10 cycles	No damage**
Inner clearance test	IEC 60794-1-21, Annex E	To confirm inner diameter with steel ball in diameter 85%	Passes full length
Coefficient of Friction	IEC 62470	Tension around a curve 1040mm	CoF less than 0.1
ESCR test	ASTM D1693	Condition B>500h	Min 5 OK out of 10
Min-max recommendations			
Temperature ranges	For installation	-15 ... +50°C	
	Transport, storage, operation	-45 ... +70°C	
Fibre Optical Cable dims for blowing	Duct 7/3.5 mm	50% ... 75% of duct ID	
Outdoor exposure at Central Europe without protection	Standard	up to 36 months	
The extra UV stabilized microduct is Black in color and contains min 2.5% well dispersed carbon black			

(*) Under visual examination without magnification the microduct shall show no damage (**) Under visual examination without magnification the microduct shall show no damage and the test piece shall pass inner clearance test after recovery time. HellermannTyton production quality control plan follows EN 50411-6-1 and IEC 60794-5 and IEC 60794-5-10 and IEC 60794-5-20 requirements.

Technical Data Sheet

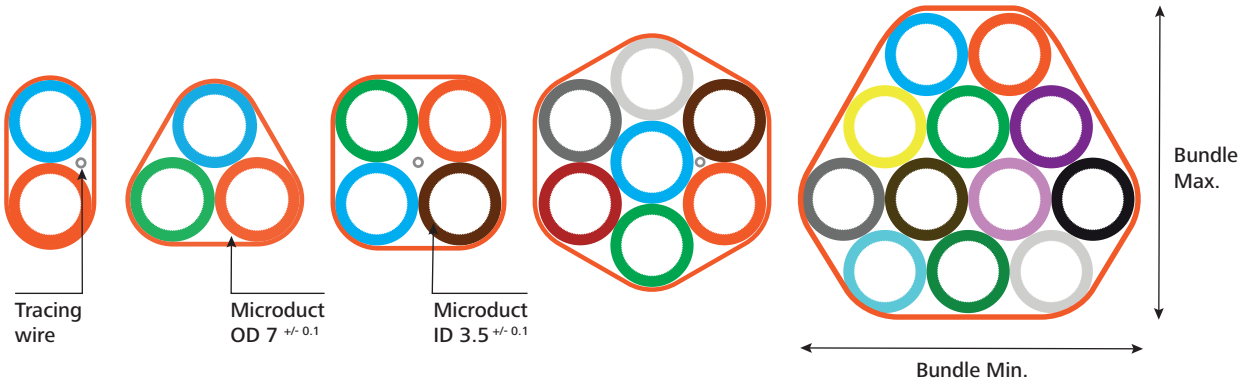
Material Data

Single Microduct 7/3.5mm					
Duct Type	OD	ID	Inner clearance test	Min bending radius	Install tensile force
	mm	mm	% of ID	mm	N
7/3.5mm	7 +/- 0.1	3.5 +/- 0.1	85	70	390
Test method	EN 50411-6-1:2011 Annex A:A1		IEC 60794-1-21 Full Length		

Multi Microduct Bundles 7/3.5mm					
Duct Type	Microduct OD	Microduct ID	Bundle min x max	Min bending radius	Install tensile force
	mm	mm	mm	mm	N
2 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	9 x 16	90	780
3 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	12 x 17	140	1200
4 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	16 x 19	160	1560
7 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	22 x 23	220	2730
12 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	28 x 30	280	4600
16 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	28 x 38	280	6200
24 x 7/3.5	7 +/- 0.1	3.5 +/- 0.1	34 x 44	400	9200

Technical Diagrams

2 x 7/3.5mm 3 x 7/3.5mm 4 x 7/3.5mm 7 x 7/3.5mm 12 x 7/3.5mm



All measurements in mm unless otherwise stated.

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