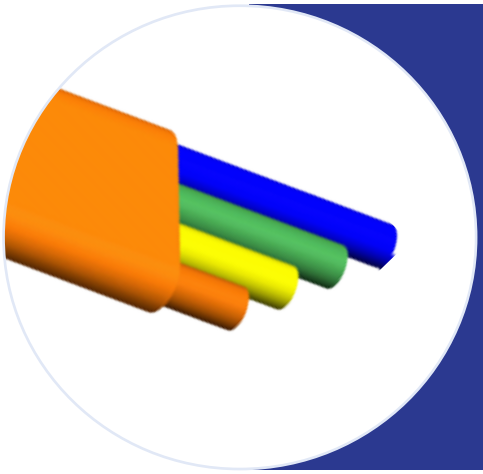
GryphonX™ Micro Ducts & Bundle Ducts

12/8mm HDPE + HDPE Flat Microducts



GryphonX™ flat bundle microducts are a part of an optical fibre cable blowing system which has been designed with expansion in mind and compatibility with existing technologies. The technique is based on laying the bundles of microducts first and afterwards blowing-in optical fibre cables.

The system is flexibility in managing the investment costs and extra flexibility is added by applying "self-protecting" HDPE thick walled tubes; that can easily be extracted from the bundle to create a branch connection.

Cable Description

Number of Fibre	Microduct			Bundle Duct
Diameter (Outer)	12.0 ± 0.1mm	14.0 ± 0.1mm	16.0 ± 0.1mm	See below table
Diameter (Inner)	8 ± 0.1mm	10.0 ± 0.1mm	12.0 ± 0.1mm	--
Sheath Thickness	2.0 ± 0.1mm			1.0 ± 0.1mm
Sheath Material	HDPE			HDPE or LSOH
Sheath Colour	Orange, Blue, Red, Yellow, Grey, White & Green			Blue or Orange
Stripes No. & Colour	N/A			Optional

Number of Ducts		2 WAYS	3 WAYS	4 WAYS	5 WAYS	7 WAYS
Cross Section						
Bundled Duct Dia (mm)	12/8	26.0 * 14.0 ± 0.4	38.0 * 14.0 ± 0.4	50.0 * 14.0 ± 0.4	62.0 * 14.0 ± 0.4	86.0 * 14.0 ± 0.4
	14/10	30.0 * 16.0 ± 0.4	44.0 * 16.0 ± 0.4	58.0 * 16.0 ± 0.4	72.0 * 16.0 ± 0.4	N/A
	16/12	34.0 * 18.0 ± 0.4	50.0 * 18.0 ± 0.4	66.0 * 18.0 ± 0.4	82.0 * 18.0 ± 0.4	N/A
Min Bend Dia. (mm)		10 * individual microduct overall diameter				

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PHYSICAL & MECHANICAL PROPERTIES

Characteristic	Test Method	Acceptance Criteria
MICRO DUCT		
Outer Diameter	ASTM D2122	12.0 ± 0.1 mm
Inner Diameter	ASTM D 2122	8.0 ± 0.1 mm
Wall Thickness	ASTM D 2122	2.0 ± 0.1 mm
Ovality	ASTM D 2122	≤ 5%
Standard Dimension ratio	SDR= Outer dia./Wall thickness	6.0
Pressurization	5 min @ 15 bar each micro duct	No damage, no leaks
Crush	IEC 60794-1-2 Method E3, 1200 N load, 60 sec, 1 hour recovery time.	No residual deformation >15% of inner and outer diameter.
Tensile	IEC 60794-1-2 Method E1A & E1B, Force = mass of 1,000m of duct, 5min test	No residual deformation >15% of micro duct.
Bend	IEC 60794-1-2 METHOD E11A, OD*10 times	No residual deformation >15% of the micro duct inner & outer diameter.
Kink	IEC 60794-1-2 Method E10 15 * OD	No residual deformation >15% of inner and outer diameter.
Impact	IEC 60794-1-2 Method E4, 6.5 J Impact, 10 mm anvil, recovery time 1 hr.	No residual deformation >15% of inner and outer diameter.
Co-efficient of Friction	Bell core, 750 mm Diameter, 450° loop, 5 kg tail mass	μ < 0.08
Heat Reversion	ISO 2505	110°C for 1 hrs (< 3%)
Colour	Visual inspection	See specification
Printing	Visual inspection	HERMESYS GRYPHONX HDPE FLAT BUNDLE DUCT 12/8MM XXXXm MMYY
BUNDLED DUCT		
Wall thickness (Sheathing)	ASTM D 2122	1.0 ± 0.1 mm
Colour of Stripes	Visual inspection	See specification
Pressurization	5 min @ 15 bar each micro duct	No damage, No leaks
Kink	IEC 60794-1-2 Method E10, 20*OD	No residual deformation >15% of inner and outer diameter.

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Crush	IEC 60794-1-2 Method E3, 1800 N load, 60 sec, 1 hour recovery time.	No residual deformation >15% of inner and outer diameter.
Impact	IEC 60794-1-2 Method E4, 15 J Impact, 25 mm anvil, recovery time 1 hour.	No residual deformation >15% of inner and outer diameter.
Colour & Sequence	Visual inspection.	See specification
Environmental Stress Crack Resistance	ASTM D 1693	No crack shall observed at 50 ± 2°C for 96 hours, when used 10% Igepal CO-630 solutions.
Printing	Visual inspection	HERMESYS GRYPHONX HDPE/HDPE FLAT MULTI-DUCT FMD-XXXXXXXXXX <no. of way> * xx/yymm XXXXm MMYY