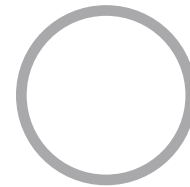
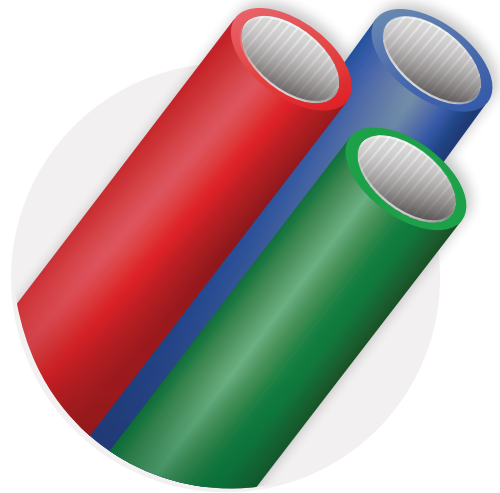


MICRODUCTS

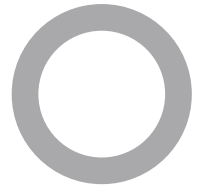
Dura-Line MicroDucts are the best way to utilize that empty space, both today and tomorrow. It allows you to expand your fiber network as you bring on new customers. It enables you to increase bandwidth as your needs increase. Dura-Line MicroDucts are manufactured from 100% virgin grade PE in 2 layer construction with inner layer being SILICORE® super slick permanent lining. MicroTechnology saves you time and money, allowing for economical growth within your communications network. The SILICORE super slick permanent lining remains for future repairs, replacements or upgrades.

FEATURES:

- MicroDucts size range generally from 5mm O.D. to 18 mm O.D.
- Options of smooth or ribbed inner surface
- Utilize space in an occupied duct
- Revitalize existing networks with Over-Rides
- Substantially reduce construction costs and deployment time
- UV stabilized Black colour MicroDucts for exposed installations
- Customizable product: Colour, Stripes, Marking, inner surface, material, application etc.



Thin Walled
DI MicroDuct



Thick Walled
DB MicroDuct

PRODUCT RECOMMENDATIONS

Dura-Line manufactures many different sizes and configurations of MicroDucts for a variety of applications, such as: Backbone, Back-haul, Direct Buried, Directional Drilling, Over-Rides and populating existing conduits. In order to get the best product performance, please follow the suggested guidelines for choosing the best MicroDuct size.

DIRECT BURIED (DB)

In applications where the MicroDucts will be directly buried or bundled into FuturePath configurations, we recommend using a thicker walled MicroDuct to maintain the optimum fill ratios and have faster, easier installations.

DIRECT INSTALL (DI)

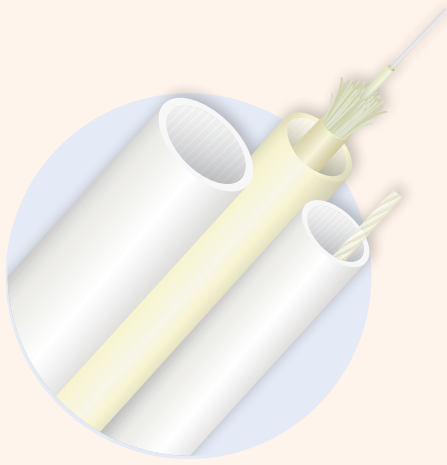
In applications where the MicroDuct or FuturePath configuration will be placed inside an existing conduit, like an Over-Ride or populating an existing conduit, we recommend using a thinner walled product where protection is provided by the existing conduit and space is more sensitive.

MICRODUCT STANDARD SIZES

MICRODUCTS SIZE (MM)	APPLICATIONS DB/DI	OUTSIDE DIA (MM)	AV WALL THICKNESS (MM)	BEND RADIUS SUPPORTED	BEND RADIUS UNSUPPORTED
5/3.5	DI	5.0±0.1	.75±0.1	(10 x OD) - Post Installation	(20 x OD) - During Installation
7/3.5	DB	7.0±0.1	1.75±0.1		
7/5.5	DI	7.0±0.1	0.75±0.1		
8/6	DI	8.0±0.1	1.0±0.1		
8/5	DB	8.0±0.1	1.5±0.1		
10/8	DI	10.0±0.1	1.0±0.1		
12/10	DI	12.0±0.1	1.0±0.1		
12/9	DB/DI	12.0±0.1	1.5±0.1		
14/10	DB	14.0±0.1	2.0±0.1		
14/11.5	DB/DI	14.0±0.1	1.25±0.1		
14/12	DI	14.0±0.1	1.0±0.1		

RECOMMENDED FIBER FILLS

MICRODUCT SIZE* (MM)	FIBER COUNT (FIBER COUNT)	FIBER CABLE OD RANGE (MM)
5/3.5	Up to 12	1.7 - 2.7
7/5.5	Up to 48	2.7 - 4.3
8.5/6	Up to 96	3.0 - 4.7
10/8	Up to 96	4.0 - 6.3
12.7/10	Up to 144	4.9 - 7.8
14/10	Up to 144	5.0 - 7.9
16/12	Up to 192	5.8 - 9.2



INNOVATIVE IBS (IN BUILDING SOLUTIONS) THROUGH CIC MICRODUCTS

CIC Micro Ducts are factory installed with micro fiber cable during manufacturing

- SILICORE® lining (Riser and Plenum rated)
- LSHZ per IEC standards and Riser as per UL standards
- Supply length customized
- Ideal for MDU and FTTx applications Inside Buildings
- CIC MicroDucts sizes ranging from 5/3.5mm to 16/12mm

Notes: MicroDucts can also be offered with pre-installed pull-string in coils for quick cable pulling at site

MICRODUCTS KEY APPLICATIONS

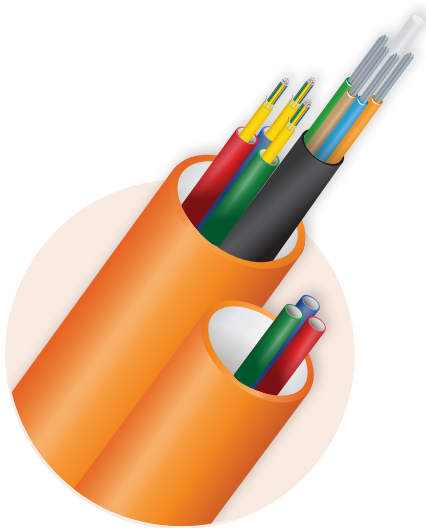
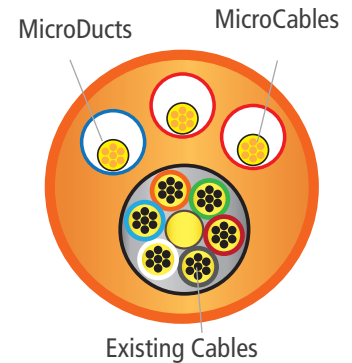
POPULATING SPARE CONDUITS






- Populating spare / empty conduits with MicroDucts
- Installation of MicroDucts by Pulling or Blowing
- Install upto 144 F micro cables
- Ramp up network capacity without digging
- Reduction in Costs and Time

OVER-RIDE APPLICATION

- Utilize empty space in a duct with existing cable by installing multiple MicroDucts
- Revitalize existing networks
- Significant reduction in Costs and Time

For fill factor on MicroDucts in Spare and Occupied conduits, please contact us



INSTALLATION APPLICATION	Empty Duct, Over-Ride in Existing Occupied Duct, Direct Buried
MARKET APPLICATION	 Telecom  Enterprise  Internet of Things  Fiber to Home
COLORS	

MORE INFO	<p>INTERNAL RIBS: Smooth or Straight Ribs are available with MicroDucts. Options vary by MicroDuct Size.</p> <p>FIRE RETARDANT: Available in Fire Retardant Material: Riser, Plenum or Low Smoke Zero Halogen (LSZH)</p> <p>TRACEABILITY: With either constructed copper wire on sizes > 12mm or copper wire sheathed together with MicroDuct</p>
-----------	---