EMTELLE

TELECOM
USA CATALOG 2024

Full Solution with FiberFlow

Pre-Fibered & Pre-Connectorized Specialists

Global Manufacturer of FTTx Network Solutions

01 CONTENTS

INTRODUCTION 02

Superfast connectivity is becoming an increasingly essential part of our daily lives. As technology capabilities expand, the global connectivity expectations grow in tandem. Whether it be for home office, wifi supply, streaming services, remote calling and much more, it's an essential requirement that 21st century lives cannot live without a superfast, quality and reliable connection.

Without optical fiber, such a feat would not be possible. Optical fiber brings a variety of benefits compared to more conventional cabling methods including; increased bandwidth capabilities, faster speeds, improved reliability, and further flexibility for the future. To effectively combat the ever-growing connectivity requirements - with more and more fiber deployments being rolled out across the globe daily - there is a high reliance on ensuring optical fiber deployments are easy-to-install, efficient, and futureproof.

The complete Emtelle solution delivers this and more. The innovative direction of Emtelle FiberFlow, QWK and FIT solution ranges, enable operators to utilise a fully compatible, fully tested, and fully futureproof solution, aiding and enhancing in fiber optic rollouts. Having assisted a high proportion of the key players with quality and reliable fiber and duct solutions for deployments worldwide over the last 40 years, the proof is in Emtelle's positioning, providing a premium end-to-end product solution, to a long list of global projects.

On the following pages you will find out more on why Emtelle are the supplier of choice, and how the Emtelle product solution library enhances global fiber roll-outs.

03 WHY EMTELLE

Our Factories

With operations in USA, UK, Germany, Denmark and Dubai as well as sales representatives in The Netherlands, Sweden, Eastern Europe & Malaysia. Emtelle serves over 100 countries globally, combining proven knowledge with continuous innovation for the last 40 years.

Established Industry Leader

Having dominated the blown fiber & ducted solution manufacturing space since its inception, Emtelle have pioneered some of the most innovative solutions within the industry as the company has advanced over the past four decades. Ranging from standard fiber, microduct and tube bundle products to Pre-Fibered and Pre-Connectorized solutions, they focus on creating the best value, reducing total project costs, and minimizing installation time and disruption.

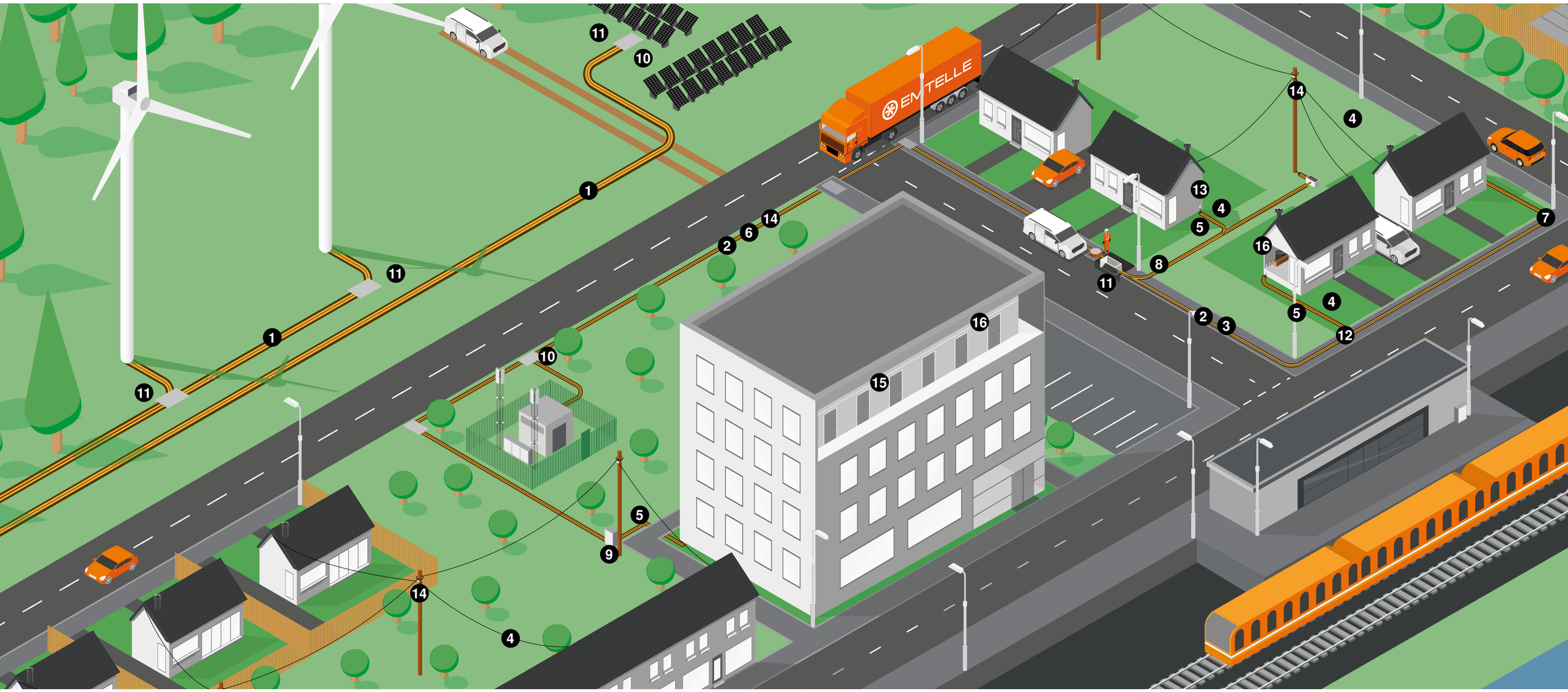
Full Solution Provider

Supplying a unique and complete solution to an ever-expanding market is more pertinent now than ever. Emtelle acknowledge the challenges that providers and operators face when combining all the different components within a passive network, and ensuring efficient delivery of all at the right time. Emtelle with it's one-stop-shop ethos is all about providing customers with one direct route to sourcing a complete end-to-end solution; from microducts to fiber cables, from connectors to closures, from tools to blowing equipment. It's a way of making our customers' lives easier, enabling them to focus on what is paramount – creating connections effectively and efficiently.

Offering Superior Support

Emtelle offer the full solution in terms of solution supply, customer service, support and training, from initial concept to installation and beyond. The highest standard of excellence is provided by Emtelle throughout all its activities by using the company's production capacity and technical knowledge to develop, perfect & sustain the optimum solutions; the entire Emtelle offering adds value to FFTx networks around the world.

04 FULL SOLUTION



For more information please see the following pages

page 8 — 1 — HDPE Sub-Duct

page 15 — 2 — Tube Bundles

page 43 — 3 — Pre-Fibered Solutions

page 51 — 4 — QWK-Range

page 12 — 5 — Universal Drop Tube

page 37 — 6 — FiberFast Blown Mini Cable

page 35 — 7 — FiberFast Xtreme

page 35 — 8 — FiberFast Fiber Unit

page 73 — 9 — Cabinets

page 61 — 10 — Closures

page 71 — 11 — Vaults

page 71 — 12 — Boundary Boxes

page 69 — 13 — Customer Entry

page 75 — 14 — Accessories

page 50 — 15 — LFH Cable Range

page 70 — 16 — LFH Solutions

FiberFlow™

HDPE Sub-Ducts offer high protection for telecommunication and power networks and protect cables such as optical fiber, copper or electricity cables against mechanical and chemical damage and for rodent protection. They are ideally suited for direct burial into suitable prepared ground, or they can be pulled into existing underground ducts.

HDPE Sub-Ducts act as ideal containment for telecommunication backbone networks where high capacities are needed or the option of subsequent installation with microducts is requested. HDPE Sub-Ducts are suitable for different underground installation methods such as open trench, moleploughing or HDD. HDPE Sub-Ducts can be manufactured according to regional standards and can have a ribbed or smooth low friction bore. Our HDPE Sub-Ducts guarantee the highest level of operational reliability, long service life, high load capacity and efficient storage.

Alongside our HDPE Sub-Duct we offer three different models of microducts: Standard Wall, Thick Wall and Low Fire Hazard (LFH). Our high-quality microducts come in a range of sizes from 3-16mm in diameter.

- **HDPE Sub-Ducts offer high protection for telecommunication and power networks**
- **HDPE Sub-Ducts are suitable for different underground installation methods**
- **An internal low friction liner to reduce frictional contact**
- **The duct is supplied in coils or on drums**
- **Flexibility, strength and fused joints are as strong as the original duct itself**
- **Can be pre-roped**

HDPE SUB-DUCT

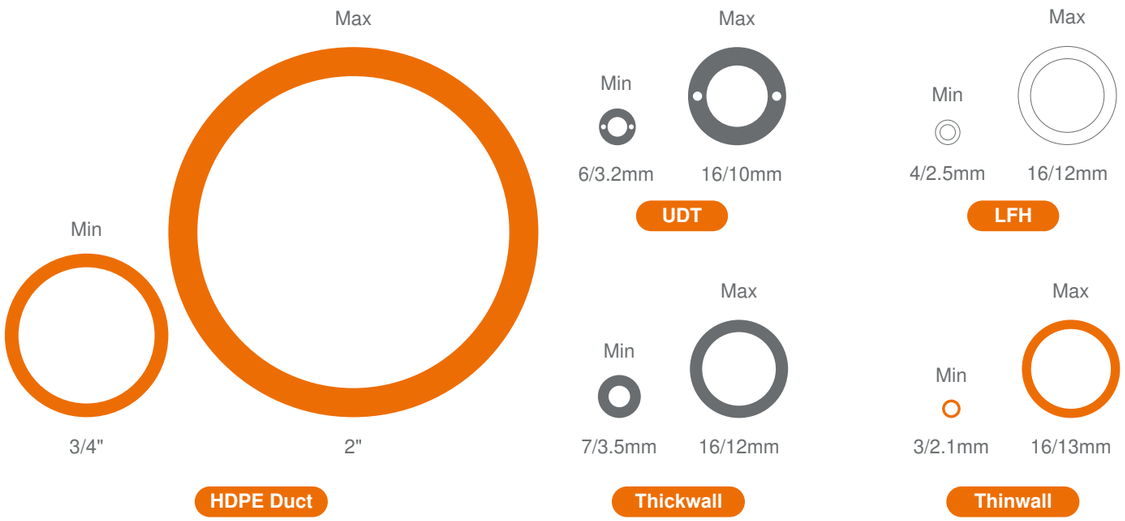
HDPE SUB-DUCT SOLUTIONS

Our ducts are compatible with many of our Fiberflow products, below is a guide to what products are suitable with each microduct.

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

(custom colors available upon request)

DUCT ACTUAL SIZE



Emtelle offers a complete range of subduct up to 2" sizing, in various SDR and SIDR ratios

HDPE SUB-DUCT DATASHEETS

HDPE Sub-Duct
MHT582
Scan QR code for
Datasheet

Thin Wall Duct
MHT2630
Scan QR code for
Datasheet

Thick Wall Duct
MHT2643
Scan QR code for
Datasheet

Low Fire Hazard
MHT2680
Scan QR code for
Datasheet

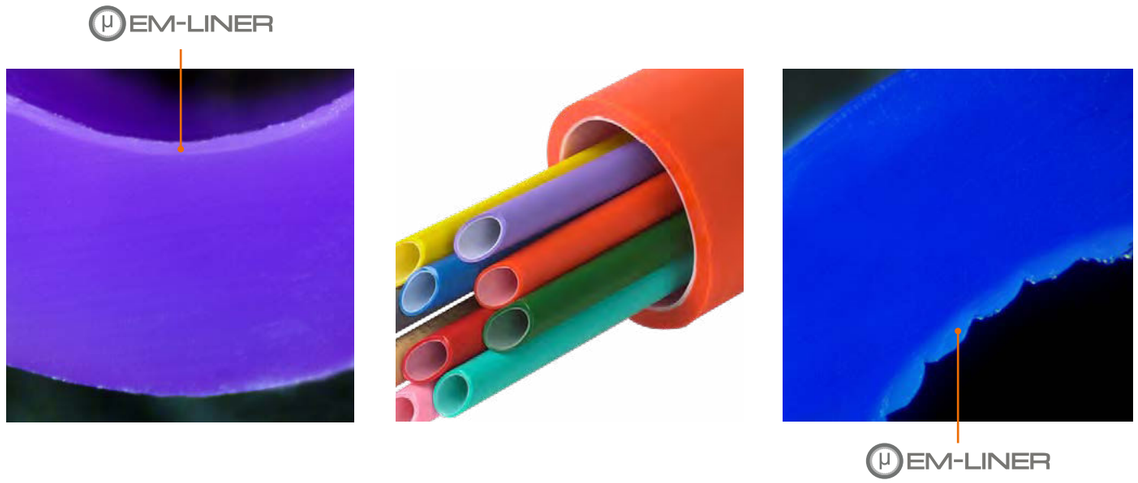
Universal Drop Tube
MHT2806
Scan QR code for
Datasheet

EM-LINER

One of the most important factors of blowing a fiber cable into a duct or microduct successfully is an optimised air stream and a low friction coefficient μ.

FEATURES & BENEFITS

- **Better blowing results up to 50%**
- **Up to 5-times less friction coefficient μ**
- **No extra lubricant needed**
- **Reduced cable installation time without any damage and cable wear**
- **No extra Vaults needed**
- **Reduced cable fleeting / coiling**
- **Reduced installation costs for the whole network**



See Page 75
for Tools &
Accessories

HDPE SUB-DUCT

High Density Polyethylene (HDPE) Sub-Ducts are used for the construction of underground duct system for both fiber optic and microducts in the telecommunication's network. The HDPE Sub-Ducts are intended for protecting fiber optic cables installed by traditional pulling techniques.

PRODUCT SPECIFICATIONS

Polyethylene SDR 13.5: Meets Material and Dimensional Requirements Of ASTM D3035

Normal Duct Size	Outside Diameter	Wall Thickness	Inside Diameter	Minimum Unsupported Bend Radius	Safe Working Pull Strength	Weight Per 1000 ft
3/4"	1.050"+.012"	.078"+.020"	.874"	12"	505 lbs.	110 lbs.
1"	1.315"+.012"	.097"+.020"	1.101"	14"	790 lbs.	168 lbs.
1-1/4"	1.660"+.012"	.123"+.020"	1.394"	18"	1260 lbs.	264 lbs.
1-1/2"	1.900"+.012"	.141"+.020"	1.598"	20"	1455 lbs.	343 lbs.
2"	2.375"+.012"	.176"+.021	2.002"	26"	2580 lbs.	531 lbs.

PRODUCT SPECIFICATIONS

Polyethylene SDR 11 Meets Material and Dimensional Requirements Of ASTM D3035

Normal Duct Size	Outside Diameter	Wall Thickness	Inside Diameter	Minimum Unsupported Bend Radius	Safe Working Pull Strength	Weight Per 1000 ft
3/4"	1.050"+.012"	.095"+.021"	.839"	12"	605 lbs.	130 lbs.
1"	1.315"+.012"	.119"+.026"	1.051"	14"	950 lbs.	203 lbs.
1-1/4"	1.660"+.012"	.151"+.026"	1.332"	18"	1520 lbs.	319 lbs.
1-1/2"	1.900"+.012"	.173"+.026"	1.528"	20"	1760 lbs.	415 lbs.
2"	2.375"+.012"	.216"+.026	1.917"	26"	3105 lbs.	639 lbs.

See Page 29 for Fiber Optic Cable Solutions

THICK WALL MICRODUCT

Thick Wall Microducts are exceptionally tough and can be directly buried without the need for additional protective closures at branch-off points, or inline connections. The ducts have a solid, low friction liner for best installation performance.

PRODUCT SPECIFICATIONS

Microduct Size	Mass (Nominal)	Generic Specification
7/3.5mm	28g/m	MHT2643
7/4mm	25g/m	
8/3.5mm	39g/m	
8/4mm	36g/m	
8/5mm	29g/m	
10/6mm	48g/m	
12/8mm	60g/m	
14/10mm	71g/m	
16/10mm	117g/m	
16/12mm	84g/m	

THIN WALL MICRODUCT

Thin Wall Microducts are normally installed in existing ducts with limited space and where thick-walled ducts will not fit. The ducts are thinner in diameter and are suitable for installation of air blown fiber. The ducts have a solid, low friction liner for best installation performance.

PRODUCT SPECIFICATIONS

Microduct Size	Mass (Nominal)	Generic Specification
3/2.1mm	3.3g/m	MHT2630
4/2.5mm	7.1g/m	
4/2.7mm	6.4g/m	
4/2.8mm	6g/m	
5/3.5mm	9.3g/m	
6/4.5mm	11.5g/m	
7/5.5mm	13.7g/m	
8/6mm	20.4g/m	
10/8mm	26.3g/m	
12/10mm	32.1g/m	
14/11.5mm	46.5g/m	
14/12mm	39g/m	
16/13mm	63.5g/m	

UNIVERSAL DROP TUBE

Universal Drop Tube is used as a customer drop tube for a variety of installations – it can be used overhead, in duct, along walls or directly buried. With GRP strength members in the wall, the Universal Drop Tube is spade resistant and means contractors have the option to bury the product at a shallower depth due to added strength.

PRODUCT SPECIFICATIONS		
Microduct Size	**Mass (Nominal)**	**Generic Specification**
6/3.2mm	21g/m	MHT2806
7/3.7mm	26g/m	
8/4mm	37g/m	
10/6mm	46g/m	
16/10mm	105g/m	

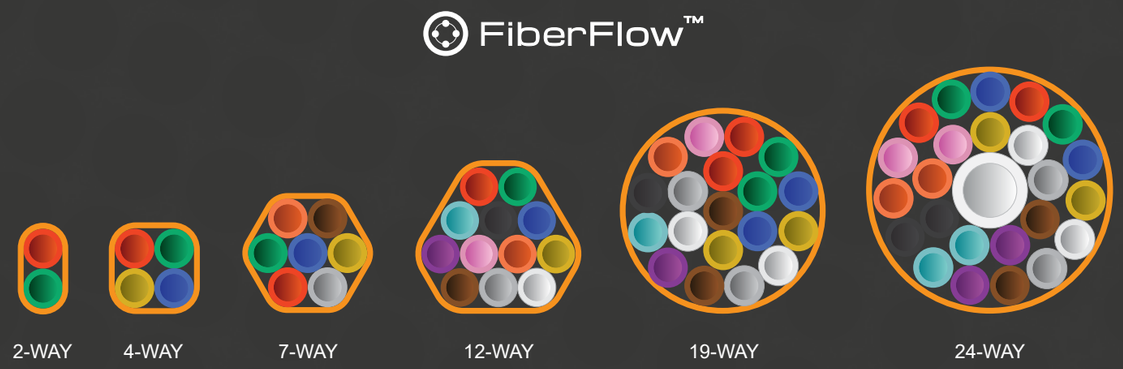
LFH MICRODUCT

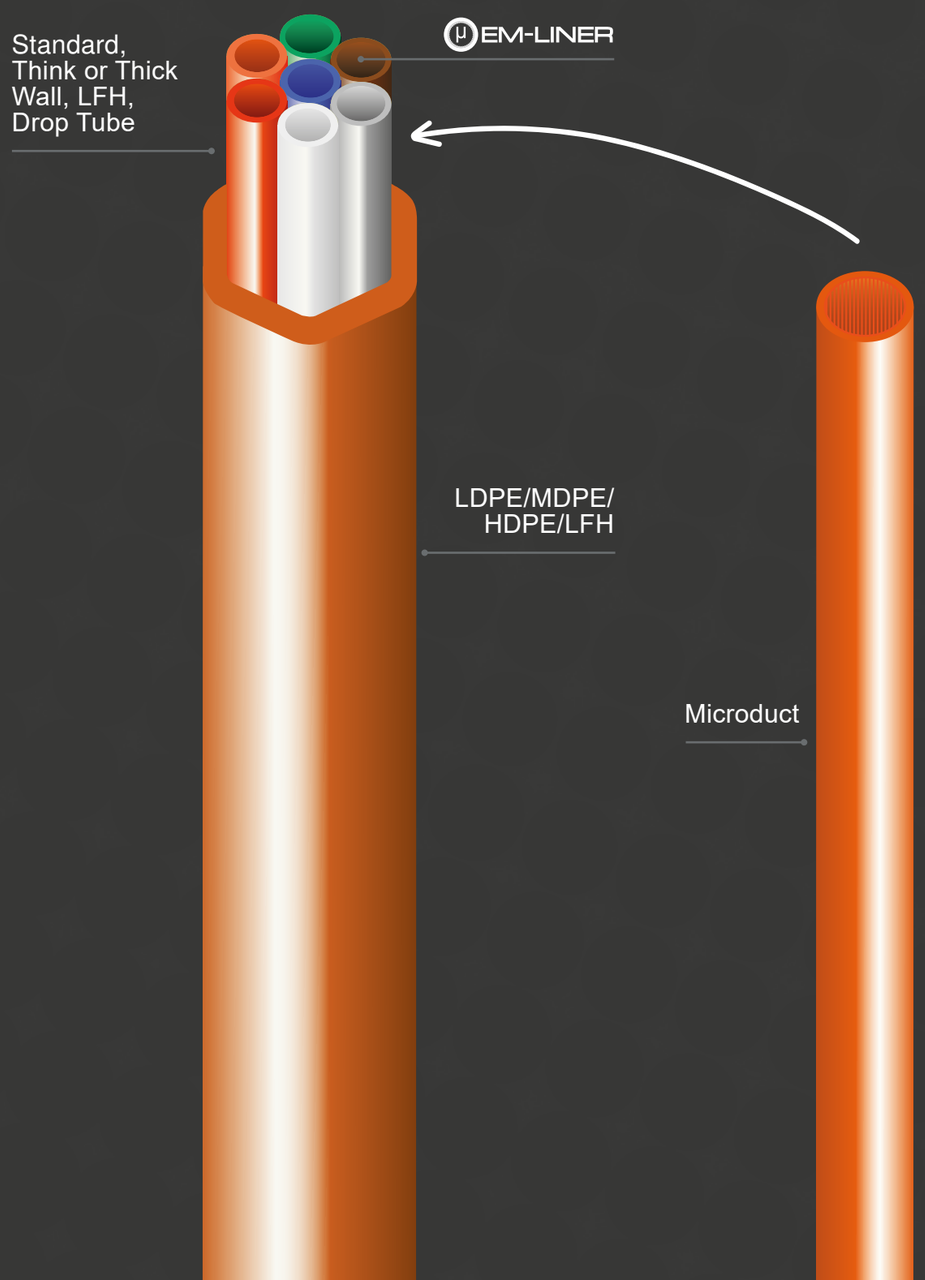
Low Fire Hazard Microduct contains material suitable for indoor fire regulation use, giving excellent performance in fire scenarios. The ducts have a solid, low friction liner for best installation performance.

PRODUCT SPECIFICATIONS		
Microduct Size	**Mass (Nominal)**	**Generic Specification**
4/2.5mm	11.3g/m	MHT2680
5/3.5mm	14.8g/m	
5/2.1mm	24.5g/m	
6/3.8mm	25.8g/m	
7/5.5mm	21.7g/m	
7/4mm	39.2g/m	
7/3.5mm	43.8g/m	
8/6mm	32.8g/m	
8/5mm	45.2g/m	
8/4mm	57.4g/m	
10/6mm	76.4g/m	
12/8mm	95.4g/m	
14/10mm	114.3g/m	
16/12mm	133.3g/m	

DRUM WEIGHT & DIMENSION

DRUM SPECIFICATIONS			
Product Code	**Type**	**Dimensions (OD x W)**	**Weight**
-	Coil	600 x 300 mm	-
13648	350 ply	350 x 200 mm	5kg
13646	450 ply	450 x 250 mm	7kg
13650	600 ply	600 x 300 mm	8kg
11021	650 ply	650 x 300 mm	9kg
13651	700 ply	700 x 350 mm	10kg
999962	1000 ply	-	-
12063	E	800 x 516 mm	27kg
12064	F	1000 x 646 mm	40kg
12065	G	1200 x 718 mm	61kg
13698	HH	1000 x 475 mm	35kg
-	MB5	1200 x 1018 mm	65kg
12066	1.2D	750 x 1018 mm	65kg
12011	1.4D	1400 x 1100 mm	92kg
13660	1.7D	1700 x 1140 mm	131kg
13900	2.0D	2000 x 1140 mm	188kg
13998	2.2D	2200 x 1165 mm	281kg
13875	2.35D	2350 x 1165 mm	316kg





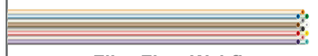
06

Our tube bundles are tightly protected microducts suitable for installation of microcable containing between 1 to 24 fibers, as well as 24-576 fibers in Minicables. Our high-quality bundles come in a range of sizes from 3mm-16mm microduct outside diameters and contain up to 26 individual microducts. As standard, each of the microducts within every tube bundle we manufacture has a low friction liner on the inner bore, which improves blowing performance.

- **Sizes from 3mm - 16mm microduct outside diameters**
- **Meet & exceeds the requirements of industry standard IEC60794**
- **Can contain up to 26 individual microducts**
- **Over 2000 specifications available for a huge array of applications**
- **Customised to meet specific customers' needs**
- **A low friction liner on the inner bore which improves blowing performance**
- **Quick Installation**
- **Available in several types including direct bury, direct install and low fire hazard**
- **Suitable for installation of microcables containing between 1-24 fibers, as well as 24-576 fibers in Minicables.**

TUBE BUNDLES

TUBE BUNDLES SPECIFICATIONS

PRODUCT SPECIFICATIONS					PRODUCT SPECIFICATIONS						
Product	Microduct Count	Dimension	Length	Material	Application						
					Overhead	Underground	Indoor	Installation into Underground Duct	Moleplough	Micro Trench	Open Trench
 DBMF Traditional	1 - 24	3/2.1 - 12/10 mm	500 - 4000m	HDPE	✗	✓	✗	✗	✗	✗	✓
 DBMF Thickwall	1 - 24	5/2.1 - 16/12 mm		HDPE	✗	✓	✗	✗	✓	✓	✓
 Direct Bury (DB) - with foil	1 - 24	5/3.5 - 12/10 mm		HDPE	✗	✓	✗	✗	✗	✗	✓
 Direct Install (DI) - with Foil	1 - 24	5/3.5 - 12/10 mm		HDPE	✗	✗	✗	✓	✗	✗	✗
 Direct Install metal free (DImf)	1 - 24	5/3.5mm		HDPE	✗	✗	✗	✓	✗	✗	✗
 FiberFlow Webflex	12	7/4 or 8/4 mm		HDPE	✗	✓	✗	✗	✗	✓	✓
 FiberFlow Vertex	1 - 16	6/3.5 - 16/10 mm		HDPE	✗	✓	✗	✗	✗	✓	✓
 Aerial Tube Bundle	1 - 12	5/3.5 - 12/10 mm		HDPE	✓	✗	✗	✗	✗	✗	✗
 Low Fire Hazard (LFH)	1 - 24	4/2.5 - 14/10 mm		LFH Material	✗	✗	✓	✗	✗	✗	✗
 Loose Protected Microduct	1 - 26	25/20.4 - 63/51.4 mm		HDPE	✗	✓	✗	✗	✓	✗	✓

TUBE BUNDLES DATASHEETS

DBMF Traditional
MHT2803
Scan QR code for
Datasheet

DBMF Thick Wall
MHT2804
Scan QR code for
Datasheet

FiberFlow WebFlex
CP4281
Scan QR code for
Datasheet

FiberFlow Vertex
CP1608
Scan QR code for
Datasheet

DB - with foil
MHT2802
Scan QR code for
Datasheet

DI - with Foil
MHT175
Scan QR code for
Datasheet

DI - metal free
MHT2801
Scan QR code for
Datasheet

Aerial
MHT2681
Scan QR code for
Datasheet

LFH
MHT423
Scan QR code for
Datasheet

Loose Protected Microduct
MHT2639
Scan QR code for
Datasheet

DBMF - TRADITIONAL

Direct Bury Metal Free assemblies of PE microducts, each with low friction performance. Each tube bundle is surrounded by a water blocking tape that reacts to block water movement. Over the bundle is one sheath of flexible black PE, and one sheath of tough orange direct burial-grade PE.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
8361T	3/2.1mm	2DBmf	99g/m	13.3 x 10.3 mm	550N	MHT2156
8362T		4DBmf	130g/m	14.5mm	700N	
8363T		7DBmf	157g/m	16.3mm	850N	
8364T		12DBmf	207g/m	19.5mm	1100N	
8365T		19DBmf	256g/m	21.9mm	1400N	
8247T		24DBmf	320g/m	25.3mm	1750N	
8351T	5/2.1mm	1DBmf (heavy-wall)	74g/m	10mm	400N	MHT1281
8233T	5/3.5mm	1DBmf	62g/m	10mm	250N	MHT2156
8213T		1DBmf	62g/m	10mm	250N	
8216TS		1DBmf	62g/m	10mm	250N	
8216T		1DBmf	62g/m	10mm	250N	
8217T		2DBmf	145g/m	12.3 x 17.3 mm	750N	
8217TL		2DBmf	145g/m	12.3 x 17.3 mm	750N	
8218T		4DBmf	203g/m	19.4mm	1100N	
8219T		7DBmf	262g/m	22.3mm	1450N	
8220T		12DBmf	389g/m	28.1mm	2150N	
8221T		19DBmf	500g/m	32.1mm	2750N	
8222T		24DBmf	637g/m	37.7mm	3500N	
8239	10/8mm	1DBmf	184g/m	17.7mm	1000N	MHT1743
60208		2DBmf	261g/m	17.3 x 27.3 mm	1400N	MHT1805
60209		4DBmf	480g/m	31.9mm	2300N	
60210		5DBmf	471g/m	34.4mm	2600N	
60211		7DBmf	650g/m	37.8mm	3100N	
60212	12/10mm	2DBmf	309g/m	19.1 x 31.1 mm	2400N	
60213		4DBmf	505g/m	36.8mm	4000N	
60548		5DBmf	573g/m	39.8mm	4800N	
60144		7DBmf	684g/m	43.8mm	5600N	

DBMF - THICKWALL

Direct Bury Metal Free assemblies of direct burial microducts, each with low friction performance. Each assembly (tube bundle) is surrounded by a thin, tough sheath. These strong products are designed for direct burial installation into suitably prepared ground.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
8351T	5/2.1mm	1DBmf	74g/m	10mm	400N	MHT1281
60171	7/3.5mm	1DBmf	28g/m	7mm	200N	MHT2309
60172		2DBmf	97g/m	9.2 x 16.4 mm	650N	
60173		4DBmf	170g/m	19.1mm	1200N	
60174		7DBmf	266g/m	23.2mm	1800N	
60175		12DBmf	429g/m	30.7mm	3000N	
60176		19DBmf	640g/m	36.2mm	4500N	
60177		24DBmf	860g/m	44.2mm	6000N	
60178	7/4mm	1DBmf	25g/m	7mm	180N	
60179		2DBmf	91g/m	9.2 x 16.4 mm	600N	
60180		4DBmf	159g/m	19.1mm	1100N	
60181		7DBmf	247g/m	23.2mm	1700N	
60182		12DBmf	395g/m	30.7mm	2800N	
60183		19DBmf	587g/m	36.2mm	4100N	
60184		24DBmf	793g/m	44.2mm	5600N	
8470	8/3.5mm	1DBmf	38g/m	8mm	250N	MHT2059
8477	8/3.5mm (+ Sheath)	1DBmf	67g/m	10mm	400N	
60728	10/6mm	1DBmf	48g/m	10mm	320N	MHT1563
60200		2DBmf	150g/m	12 x 22 mm	800N	
60351		3DBmf	218g/m	12 x 22 mm	1000N	
60202		4DBmf	266g/m	26.1mm	1200N	
62816		5DBmf	343g/m	29.2mm	2500N	
60203		7DBmf	430g/m	32mm	2400N	
63073		12DBmf	646g/m	43mm	4000N	CP929
60014	12/8mm	1DBmf	60g/m	12mm	400N	MHT1564
60015		2DBmf	184g/m	14 x 26 mm	900N	
60016		3DBmf	267g/m	14 x 38 mm	1400N	

more specifiactions on the next page

DBMF - THICKWALL CONT.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
60017	12/8mm	4DBmf	347g/m	31mm	1800N	MHT1564
60018		5DBmf	434g/m	34.4mm	2400N	
60019		6DBmf	465g/m	38mm	2600N	
60020		7DBmf	531g/m	38mm	2800N	
61152		12DBmf	862g/m	51mm	4800N	
8506	14/10mm	1DBmf	73g/m	14mm	500N	MHT2308
8524		2DBmf	215g/m	30 x 16 mm	1200N	
8499		3DBmf	314g/m	44 x 16 mm	1700N	
60022		4DBmf	391g/m	36mm across corners	2000N	
60023		5DBmf	507g/m	40mm across corners	2700N	
60352		6DBmf	561g/m	44mm across corners	3000N	
8523		7DBmf	631g/m	44mm across corners	3500N	
60618	16/12mm	1DBmf	84g/m	16mm	850N	MHT2432
60722		2DBmf	249g/m	34 x 18 mm	1600N	
60723		3DBmf	363g/m	50 x 18 mm	2400N	
60724		4DBmf	447g/m	41mm across corners	3000N	
60725		5DBmf	580g/m	45.5mm across corners	3800N	
60726		6DBmf	642g/m	50mm across corners	4300N	
60727		7DBmf	736g/m	50mm across corners	4800N	

See Page 7 for HDPE Sub-Duct Solution

DB - WITH FOIL

Direct Bury assembly is surrounded with a 125µm aluminium layer, bonded inside a sheath of flexible black PE with a heavy duty orange colored HDPE sheath making the product suitable for direct burial. Rip cords are pre-installed along the entire length, under the sheath, to rip through the aluminium and sheath using correct procedure.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
6627	5/3.5mm	1DB	72g/m	10mm	500N	MHT113
6406		2DB	159g/m	12.2 x 17.2 mm	1200N	
6375		4DB	216g/m	19.3mm	1600N	
6314		7DB	278g/m	22.2mm	2000N	
6556		12DB	411g/m	28.2mm	2800N	
6352		19DB	526g/m	32.2mm	4000N	
6557		24DB	671g/m	37.8mm	5000N	
61035	8/6mm	1DB	162g/m	15.2mm	1000N	
61036		2DB	232g/m	15.2 x 23.2 mm	1500N	
61037		4DB	368g/m	27.1mm	2500N	
8521		7DB	487g/m	31.8mm	3500N	
60153		12DB	698g/m	40.4mm	4800N	
61038		19DB	987g/m	47.8mm	7000N	
6893	10/8mm	1DB	185g/m	17.2mm	1300N	MHT167
61380		2DB	285g/m	17.2 x 27.2 mm	2000N	
6655	10/8mm (Roundl)	4DB	450g/m	31.9mm	3000N	
6593	10/8mm	7DB	606g/m	37.8mm	4000N	
60152		12DB	946g/m	49.5mm	6000N	
60360	12/10mm	1DB	205g/m	19.1mm	1500N	
60361		2DB	331g/m	19.1 x 31.1 mm	2400N	
60736	12/10mm (Roundl)	4DB	542g/m	36.8mm	4000N	
60365	12/10mm	7DB	726g/m	43.8mm	5500N	

DI - WITH FOIL

Direct Install assembly is surrounded with a 125µm aluminium layer, bonded inside a sheath of flexible black PE for direct-in-duct installation. A rip cord is pre-installed along the entire length, under the sheath, to rip through the aluminium and sheath using correct procedure.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
6285	5/3.5mm	1DI	49g/m	8.4mm	400N	MHT175
6286		2DI	77g/m	8.4 x 13.4 mm	600N	
6287		4DI	118g/m	15.5mm	700N	
6438		7DI	162g/m	18.4mm	1500N	
6870		12DI	240g/m	23.8mm	1600N	
6289		19DI	329g/m	27.8mm	2500N	
6701		24DI	437g/m	33.4mm	4000N	
8357	10/8mm	1DI	98g/m	13.4mm	700N	MHT888
6797		2DI	162g/m	13.4 x 23.4 mm	1000N	
6709L		4DI	262g/m	27.5mm	1700N	
6886		7DI	368g/m	33.4mm	2500N	
60744	12/10mm	1DI	108g/m	15.3mm	750N	
60745		2DI	178g/m	15.3 x 27.3 mm	1400N	
60746		4DI	302g/m	32.4mm	2300N	
60748		7DI	413g/m	39.4mm	3200N	

See Page 11 for Microduct Solutions

DIMF - METAL FREE

Direct Install Metal Free range of products are for use in areas where aluminium foil is not an option. The products can be pulled into existing underground ducts. The products have great flexibility for ease of installation.

PRODUCT SPECIFICATIONS

Product Code	Microduct Size	Description	Mass (Nominal)	Generic Specification
8321T	5/3.5mm	1DImf	47g/m	MHT2801
8374T		2DImf	71g/m	
8353T		4DImf	109g/m	
8008LT		7DImf	151g/m	
8375T		12DImf	224g/m	
8367T		19DImf	310g/m	
60782		24DImf	410g/m	

LOOSE PROTECTED MICRODUCT

Loose Protected Microduct solution comprises a range of microduct that are composed of standard, strong HDPE tubing as the outer duct, with a super smooth silicone coating inside. This outer duct provides complete protection of cables before, during and after installation.

PRODUCT SPECIFICATIONS

Size OD/ID	Loose Sub-Duct QTY 5mm	7mm	10mm	12mm	14mm	Generic Specification
25/20.4mm	10	5	2	1	1	MHT2639
32/26mm	14	7	3	1	1	
32/27mm	18	7	4	3	1	
40/32.6mm	18	12	6	4	1	
40/34mm	24	14	7	5	2	
50/40.8mm	24	18	7	7	4	
50/42mm	26	22	10	7	5	
50/44mm	26	24	12	7	5	
63/51.4mm	26	26	14	10	7	

FIBERFLOW WEBFLEX

FiberFlow Webflex is a product that is unique to Emtelle that has 12 microducts joined together in a ‘branch’ formation ideal for microtrenching. This design makes it easy to locate and branch any of the 12 microducts easily, with minimal disruption to the remaining microducts.

PRODUCT SPECIFICATIONS				
Product Code	Microduct Size	Description	Mass (Nominal)	Generic Specification
-	7/3.5mm	12DBmf	491g/m	CP4281
64321	7/4mm	12DBmf	488g/m	CP3748
65271	8/5mm	12DBmf	517g/m	CP4749

FIBERFLOW VERTEX

FiberFlow Vertex is a range of tube bundles designed for installation into microtrench and slot cut installations. They are narrow to enable the trench width to be smaller, which increases trenching speed and therefore reduces costs.

PRODUCT SPECIFICATIONS					
Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Generic Specification
62227	6/3.5mm	12DBmf	323g/m	38.2 x 17 mm	CP1970
62346	7/3.5mm	16DBmf	626g/m	67 x 16.2 mm	CP2015
62215	12/8.5mm	1DBmf	515g/m	80 x 14.2 mm	CP1967
62342	14/10mm	3DBmf Combo	243g/m	24.9mm	CP1831
62343		3DBmf	326g/m	44.2 x 16.2 mm	CP2001
61843		4DBmf	410g/m	62 x 16 mm	CP1573
62228		4DBmf	364g/m	58.2 x 16.2 mm	CP1971
62345		6DBmf	643g/m	90 x 16.2 mmm	CP1909
62344	16/10mm	3DBmf Combo	378g/m	45.6 x 17.6 mm	CP1832

AERIAL TUBE BUNDLE

Aerial Tube Bundle has a figure-8 construction with steel or glass reinforced strength member. All compatible fittings are available. In particular, it is essential that the customer verifies that existing or proposed cable supports (towers or poles) are sufficiently robust and suitable to carry the required clamps and cable.

PRODUCT SPECIFICATIONS				
Product Code	Microduct Size	Description	Mass (Nominal)	Generic Specification
8194	5/3.5mm	Drop	42g/m	MHT1470C
60889		Drop	36g/m	CP575
60789	6/2.7mm	Drop	26g/m	CP963
61514	6/2.7mm	1F8	36g/m	CP1138
61515	6/2.7mm	1F8	37g/m	CP1217
61165	10/8mm	1F8	282g/m	CP1203
60662	14/10mm	1F8	316g/m	CP1019
60563	4/2.5mm + 1x12/8mm	12F8	485g/m	CP968
61166	4/2.7mm	4F8	257g/m	CP1077
60752		7F8	317g/m	CP999
60753		12F8	383g/m	CP1001
60894	4/2.7mm + 1x12/10mm	12F8	458g/m	CP980
60754	4/2.7mm + 1x8/6	24F8	542g/m	CP981
60890	5/3.5mm	4F8	313g/m	CP870
8195		7F8	367g/m	MHT1411
60891	5/3.5mm + 1x10/8mm	9F8	449g/m	CP1032
61167	5/3.5mm + 1x12/10mm	10F8	456g/m	CP1136
60755	5/3.5mm	12F8	453g/m	CP1030
60892	5/3.5mm + 1x10/8mm	12F8	450g/m	CP1070
60757	5/3.5mm + 1x10/8mm	17F8	576g/m	CP1033
60756	5/3.5mm	19F8	549g/m	CP1031
60893	10/8mm	4F8	486g/m	CP915
60758		7F8	606g/m	CP952
61170	12/10mm	4F8	401g/m	CP1175
60759		7F8	676g/m	CP1069

LFH TUBE BUNDLE

Low Fire Hazard microducts, each with low friction performance and suitable for fiber blowing. Each assembly is surrounded with a sheath of LFH material suitable for indoor fire regulation use and giving excellent performance in fire scenario. LFH microducts are manufactured to meet IEC 60332-3 and IEC 60332-1 standards.

PRODUCT SPECIFICATIONS

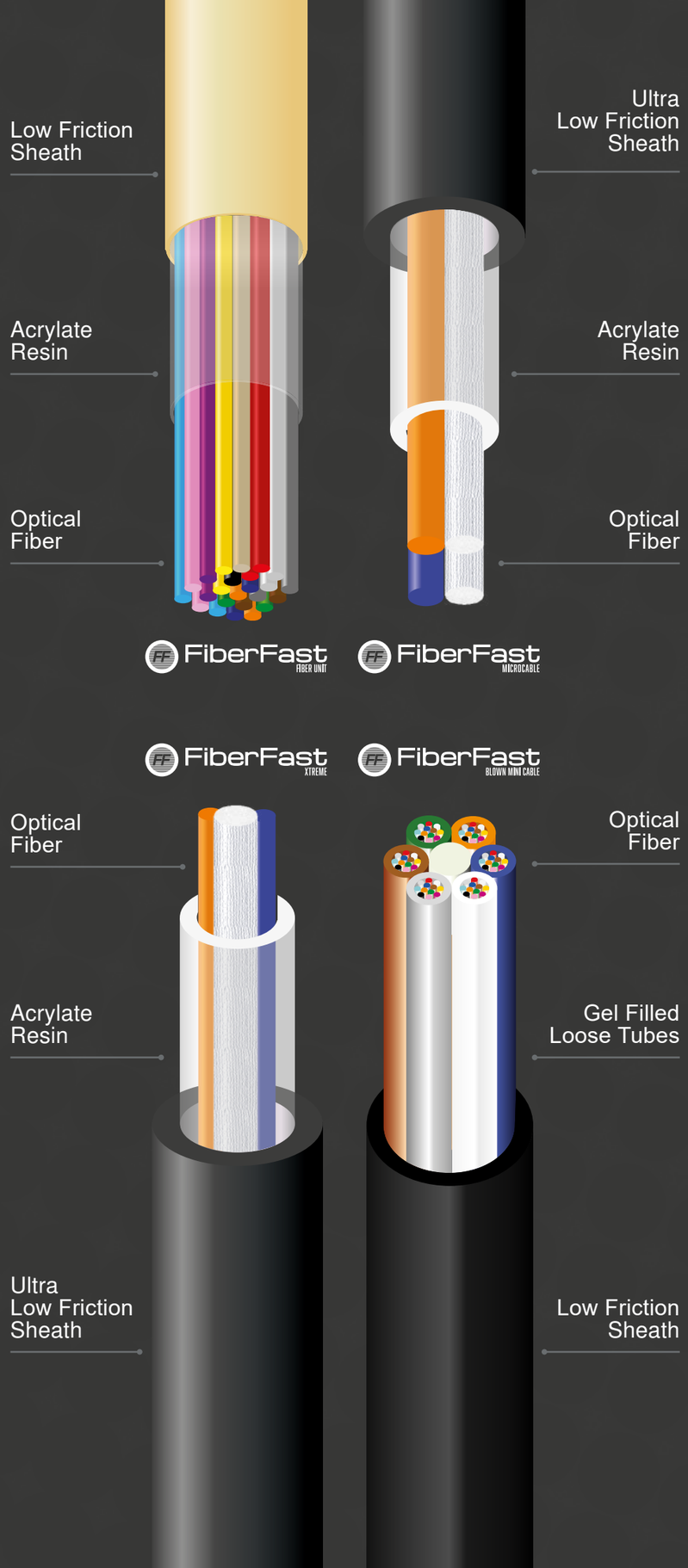
Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
62401	4/2.5mm	1LFH	40.5g/m	6.2mm	130N	MHT2617
62402		2LFH	65g/m	6.2 x 10.2 mm	200N	
62403		4LFH	104g/m	11.9mm	330N	
62404		7LFH	151g/m	14.2mm	500N	
62405		12LFH	244g/m	18.7mm	850N	
62406		19LFH	344g/m	22mm	1200N	
62407		24LFH	461g/m	26.6mm	1600N	
6318	5/3.5mm	Primary	15.5g/m	-	60N	MHT423
6634		Primary	15.5g/m	5mm	60N	
6595		Primary	15.5g/m	5mm	60N	
6772		1LFH	48g/m	7.2mm	150N	
6403S		2LFH	80g/m	7.2 x 12.2 mm	250N	
6502		2LFH	80g/m	7.2 x 12.2 mm	250N	
6403		2LFH	80g/m	7.2 x 12.2 mm	250N	
6511		4LFH	126g/m	12.2 x 14.3 mm	400N	
6643		4LFH	126g/m	12.2 x 14.3 mm	400N	
6404		4LFH	126g/m	12.2 x 14.3 mm	400N	
6515		7LFH	190g/m	17.2mm	600N	
6610		7LFH	190g/m	17.2mm	600N	
6405		7LFH	190g/m	17.2mm	600N	
6533S		12LFH	310g/m	22.9mm	950N	
6533		12LFH	310g/m	22.9mm	950N	
6533A		12LFH	310g/m	22.9mm	950N	
6611S		19LFH	438g/m	26.9mm	1300N	
6611		19LFH	438g/m	26.9mm	1300N	
6611A		19LFH	438g/m	26.9mm	1300N	
6513		24LFH	591g/m	32.5mm	1800N	
6612		24LFH	591g/m	32.5mm	1800N	

LFH TUBE BUNDLE CONT.

PRODUCT SPECIFICATIONS

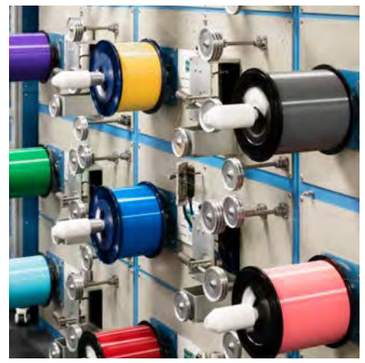
Product Code	Microduct Size	Description	Mass (Nominal)	Bundle OD	Max Pull	Generic Specification
6612L	5/3.5mm	24LFH	591g/m	32.5mm	1800N	MHT423
62191	7/4mm	Primary	39g/m	7mm	110N	CP820
61487		Primary	39g/m	7mm	110N	
61488		1LFH	84g/m	9.2mm	240N	CP821
61371		2LFH	148g/m	9.2 x 16.2 mm	350N	CP1229
61372		4LFH	266g/m	19.5mm	700N	CP1230
61933		7LFH	407g/m	21mm	1200N	CP1524
61489		12LFH	665g/m	30.9mm	1400N	CP1411
61373		19LFH	960g/m	36.5mm	2400N	CP1231
61490		24LFH	1371g/m	44.9mm	3000N	CP1412
60008	14/10mm	Primary	115g/m	14mm	350N	CP772
61156		Primary	115g/m	14mm	350N	CP772
61157		2LFH	377g/m	30.5 x 16.5 mm	1000N	CP1112
61158		3LFH	518g/m	32.7mm	1500N	CP897
61159		4LFH	658g/m	34.2mm	1750N	CP1079
61160		6LFH	964g/m	41.4mm	2500N	CP1199
61161		7LFH	1079g/m	44.7mm	3000N	CP898

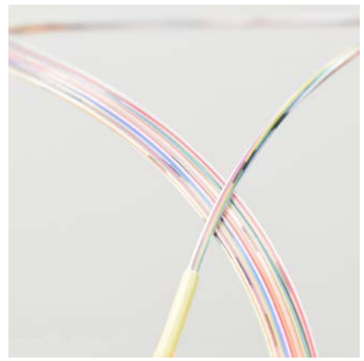
See Page 71 for Indoor Accessories



FTTH networks use fiber optic cables to deliver internet connectivity directly to homes, providing faster and more reliable internet speeds compared to traditional copper-based networks. Fiber optic cables can support much higher bandwidths, allowing for the transmission of large amounts of data and multimedia content such as video streaming and online gaming.

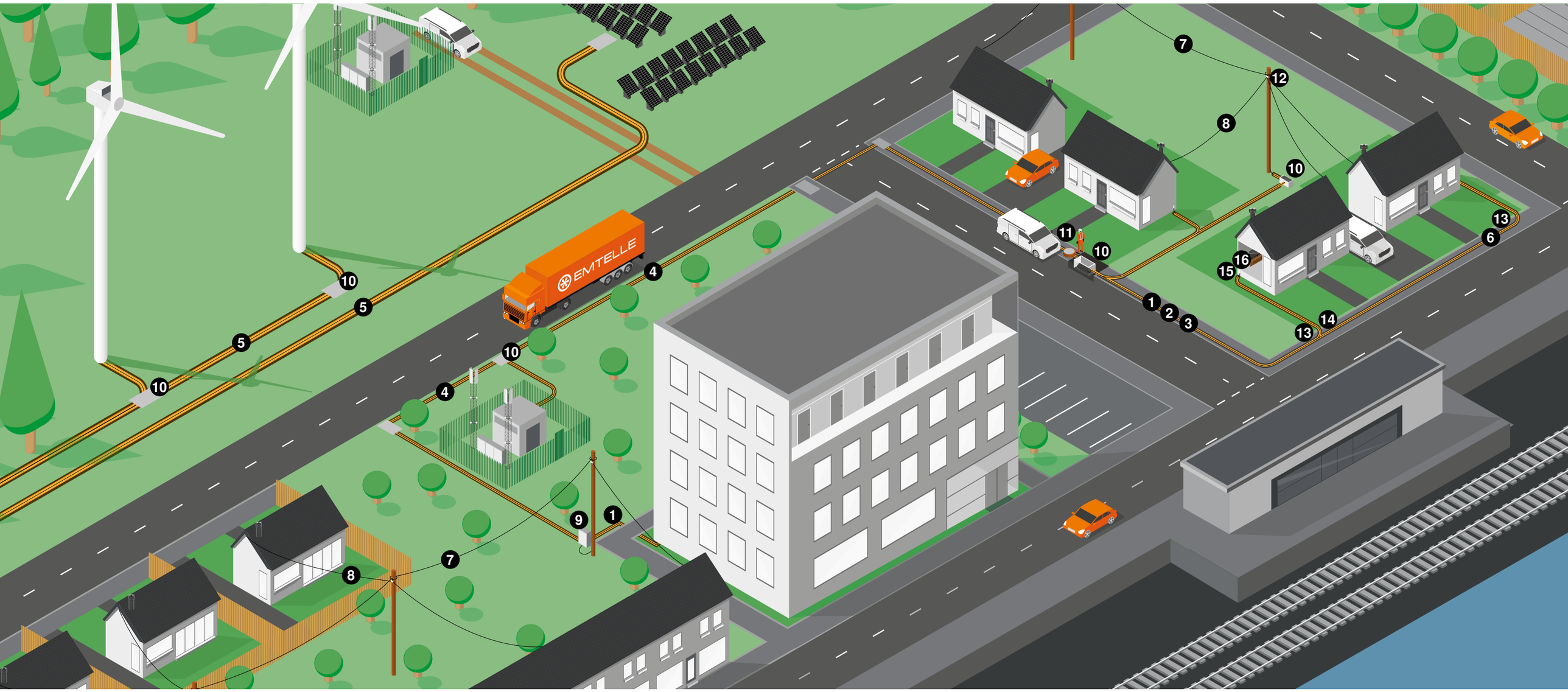
Moreover, FTTH networks can deliver symmetrical upload and download speeds, which is crucial for applications that require fast and stable internet connections. Additionally, fiber optic cables are more durable and have a longer lifespan than traditional copper cables, which reduces maintenance and replacement costs. Overall, fiber optic cables are the backbone of FTTH networks, providing users with a high-speed, reliable, and future-proof internet experience.





FIBER OPTIC CABLES

FIBER OPTIC CABLE SOLUTIONS



For more information please see the following pages

page 35 — 1 — FiberFast Fiber Unit
page 35 — 2 — FiberFast Microcable
page 37 — 3 — FiberFast Xtreme
page 37 — 4 — FiberFast Blown Minicable
page 39 — 5 — DI Traditional Cable
page 39 — 6 — DAC Cable
page 40 — 7 — ULW
page 40 — 8 — Aerial Drop Cable
page 73 — 9 — Cabinets
page 61 — 10 — EM-Finity Closures
page 78 — 11 — Blowing Equipment
page 75 — 12 — Accessories
page 77 — 13 — EM-Bend
page 79 — 14 — Connectors
page 77 — 15 — Trunking
page 71 — 16 — Boundary Wall Box

FIBER OPTIC CABLE SPECIFICATIONS

PRODUCT SPECIFICATIONS				PRODUCT SPECIFICATIONS					
Product	Fiber Count	Dimension	Material	Application		Installation			
				Overhead	Underground	Installed within protected ducts	Blown	Pulled	Pushed
 FiberFast Fiber Unit	2 - 24f	1.1 - 2.05 mm	Low Friction HDPE	For use within existing microducts 5/3.5mm to 12/8mm		✓	✓	✗	✓
 FiberFast Microcable	2 - 4f	1.05mm	Patented Low Friction Design	For use within existing microducts 5/3.5mm to 8/5mm		✓	✓	✗	✓
 FiberFast Xtreme	2 - 8f	2mm	Patented Low Friction Design	For use within existing microducts 5/3.5mm to 12/8mm		✓	✓	✗	✓
 FiberFast Blown Minicable	2 - 576f	2.4 - 10.5 mm	Designs available in HDPE or PA	For use within existing microducts 12/8mm to 25/20mm		✓	✓	✗	✓
 Direct Install Traditional Cable	12 - 72f	11.9mm (2.7kN)	HDPE	✓	✓	✗	✓	✓	✓
 DAC Cable	2f	5.4mm	HDPE	✗	✓	✗	✗	✓	✗
 Ultra Lightweight Cable (ULW)	2 - 48f	7mm	HDPE with UV resistance	✓	✓	✗	✗	✓	✓
 Aerial Drop Cable (3mm)	1f	3mm	PUR with UV resistance	✓	✗	✗	✗	✓	✗

FIBER OPTIC CABLE DATASHEETS

FiberFast Fiber Unit
MHT2185
Scan QR code for
Datasheet

FiberFast Microcable
MHT2811
Scan QR code for
Datasheet

FiberFast Xtreme
MHT2708
Scan QR code for
Datasheet

FiberFast Blown Minicable
MHT441
Scan QR code for
Datasheet

DI Traditional Cable
CP2596
Scan QR code for
Datasheet

DAC Cable
UK_DS_DAC
Scan QR code for
Datasheet

ULW
CP2976
Scan QR code for
Datasheet

Aerial Drop Cable
1f Pre-Terminated OH Drop Cable
Scan QR code for
Datasheet

FIBERFAST FIBER UNIT

FiberFast Fiber Unit is a patented design featuring a low friction outer jacket / sheath that is designed for superior blowing performance when paired with our FiberFlow microduct systems. All our solutions are tested in according to IEC 60794 mechanical and environmental test methods.

PRODUCT SPECIFICATIONS

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Min Bend Radius	Generic Specification
2f	Acrylate Bundle	1.1mm	1.0g/m	50mm	MHT2185
4f		1.1mm	1.0g/m	50mm	
6f		1.3mm	1.6g/m	65mm	
8f		1.5mm	1.8g/m	80mm	
12f		1.6mm	2.2g/m	80mm	
24f		2.05mm	2.8g/m	150mm	MHT2669
24f $^{200\mu}$		1.73mm	2.1g/m	80mm	MHT28

FIBERFAST MICROCABLE

FiberFast Microcable now features improved tensile performance making this product ideal for our pre-terminated blowable fiber cable solutions. It has applications in 5G / FTTA (antenna) / IoT, distributions network infrastructure and FTTH (home) as a blowable customer connection cable. Deployed in 2.1mm – 5.0mm internal diameter microduct infrastructure.

PRODUCT SPECIFICATIONS

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Min Bend Radius	Generic Specification
2f	Acrylate Bundle	1.05mm	1.047g/m	60mm	MHT2811
4f					

FIBER & MICRODUCT COMPATIBILITY

PRODUCT SPECIFICATIONS

	FiberFast Fiber Unit - Fiber Count						
Microduct Size	2	4	6	8	12	24	24f $^{200\mu}$
3/2.1mm	✓	✓	-	-	-	-	-
5/3.5mm	✓	✓	✓	✓	✓	✓	✓
7/4mm	✓	✓	✓	✓	✓	✓	✓
8/5mm	✓	✓	✓	✓	✓	✓	✓
12/8mm	✓	✓	✓	✓	✓	✓	✓

NET WEIGHT OF FIBER & PAN

FIBER PAN SPECIFICATIONS

Standard Length	2 Fiber	4 Fiber	6 Fiber	8 Fiber	*12 Fiber	24 Fiber
2,000km	8.2kg (Small)	8.2kg (Small)	9.4kg (Small)	9.8kg (Small)	10.6kg (Small)	12kg (Medium)
4,000km	10.2kg (Small)	10.2kg (Small)	12.6kg (Small)	13.6kg (Medium)	15.2kg (Medium)	19.8kg (X-Large)
6,000km	12.4kg (Medium)	12.4kg (Medium)	16kg (Medium)	19.1kg (Large)	21.5kg (Large)	-
12,000km	20.3kg (Large)	20.3kg (Large)	27.5kg (Large)	-	-	-

***24f $^{200\mu}$ weighs the same as our 12f**

Small
Diameter - 540mm
Height - 200mm

Medium
Diameter - 540mm
Height - 300mm

Large
Diameter - 540mm
Height - 400mm

X-Large
Diameter - 540mm
Height - 460mm

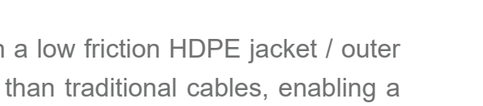
FIBERFAST XTREME

FiberFast Xtreme is a robust designed optical fiber microcable with fibers set in an encapsulating layer along with a GRP providing excellent dimensional and thermal stability. Featuring a similar low friction outer jacket / sheath for excellent blowing performance. The robust design also enables installation via pushing techniques lending this microcable to be the ideal customer connector cable.

PRODUCT SPECIFICATIONS

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Min Bend Radius	Generic Specification
2f	Acrylate Bundle	2mm	3.2g/m	40mm	MHT2708
4f			3.4g/m		
6f			3.46g/m		
8f			3.49g/m		

FIBERFAST BLOWN MINICABLE



FiberFast Blown Minicables are designed to be lightweight with a low friction HDPE jacket / outer sheath. These designs have an outer diameter that is smaller than traditional cables, enabling a microducts space to be optimally filled with optic fiber. We offers a full range solution of blowing mini cables up to 576 fibers.

PRODUCT SPECIFICATIONS - 5.3MM

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Operating Temperature	Generic Specification
4f	PBT gel filled loose tubes	5.3mm	25g/m	-30°C to +70°C	MHT2708
8f					
12f					
24f					
36f					
48f					
72f					

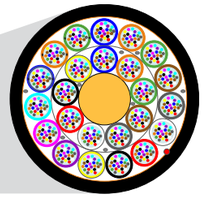
BLOWN MINICABLE RANGE

250µ Actual Cable Size

Dual Layer Microcable	Uni-tube Microcable	Standard Microcable	Standard Microcable	Standard Microcable	24f per tube Microcable	Standard Microcable
2-12f	24f	12-72f	96f	144f	192f	288f
2.4mm	2.5mm	5.3mm	5.9mm	7.9mm	7.9mm	9.3mm

200µ Actual Cable Size

24f per tube Microcable	24f per tube Microcable	24f per tube Microcable	24f per tube Microcable	24f per tube Microcable
144f	192f	288f	432f	576f
6,3mm	7,7mm	8,1mm	9,6mm	10,5mm



576f

MINICABLE & MICRODUCT COMPATIBILITY

When installing blown minicables various factors must be considered like cable weight / stiffness / friction of coefficient as well as microduct installation quality. These ultimately determine the average blowing installation distance. Other than these factors a quick guide to compatibility is the cable fill ratio. Emtelle recommend a fill ratio of <75% when selecting blown minicables. Emtelle conducts blowing performance testing on all Fiberflow microducts and FiberFast cables.

FiberFlow™

PRODUCT SPECIFICATIONS

	Compatible Microducts for Blown Minicables 250µ						Compatible Microducts for Blown Minicables 200µ				
Microduct Size	2.4mm	2.5mm	5.3mm	5.9mm	7.9mm	9.3mm	6.3mm	7.7mm	8.1mm	9.6mm	10.5mm
7/4mm	✓	✓	-	-	-	-	-	-	-	-	-
8/5mm	✓	✓	-	-	-	-	-	-	-	-	-
10/8mm	✓	✓	✓	✓	-	-	✓	-	-	-	-
14/10mm	-	-	✓	✓	✓	-	✓	✓	✓	-	-
16/12mm	-	-	✓	✓	✓	✓	✓	✓	✓	✓	-
18/14mm	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓

DI TRADITIONAL CABLE

Direct Install Traditional Cable range is all dielectric and designed for installation into a duct by pulling. The DI Traditional Cable is a stronger version of a Minicable allowing for the cable to be pulled into an existing duct if required.

PRODUCT SPECIFICATIONS

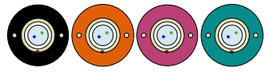
Fiber Count	Number of Tubes	Cable Outer Diameter	Mass (Nominal)	Min Bend Radius	Generic Specification
12f	6	12.5mm	115g/m	10 x Ø	CP2597
24f			116kg		
36f			116kg		
48f			116kg		
72f			117kg		
96f	8	13.9mm	144kg		
144f	12	17mm	213kg		

DAC CABLE

DAC cables have a compact design with a robust PE outer jacket. These cables are ideal for deployment in shallow direct buried applications. Two FRP rods are embedded in the outer sheath that provides additional protection during installation. Supplied in various outer jacket colors for easy identification.

PRODUCT SPECIFICATIONS

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Min Bend Radius	Generic Specification
2f	Acrylate Bundle	5.4mm	25g/m	25 x Ø	UK_DS_DAC

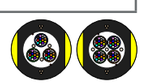


ULW CABLE

Ultra Lightweight cables are designed to be compact (7mm diameter), lightweight <38kg/km and easy to install. The ULW is designed to be installed on distributions line up to 11kV and comes in two designs a dry acrylate tube or soft easy strip tube with water-blocking gel.

PRODUCT SPECIFICATIONS

Fiber Count	Element Type	Outer Diameter (Nominal)	Mass (Nominal)	Tensile Strength	Generic Specification
4f	Acrylate Bundle or PBT tubes	7mm	35g/m	800N	ULW MB
8f					
12f					
24f					
36f					
48f					



AERIAL DROP CABLE - 3MM

Aerial Drop Cable is a small, lightweight cable which can be used for final FFTx aerial or façade connections. This cable solution can be Pre-connectorized, reducing splicing costs and installation time as well as simplifying the installation.

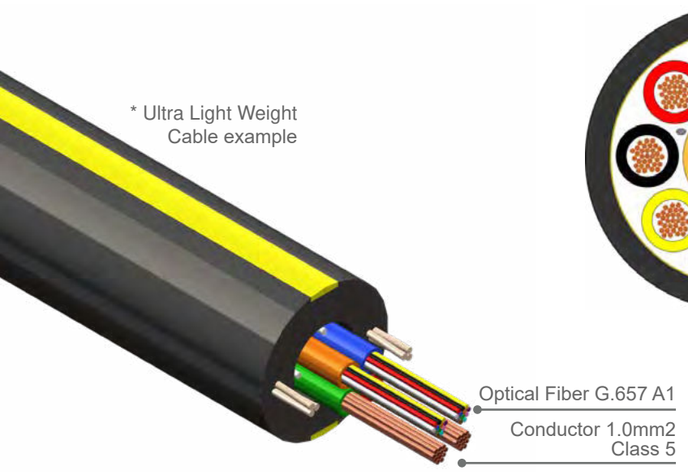
PRODUCT SPECIFICATIONS

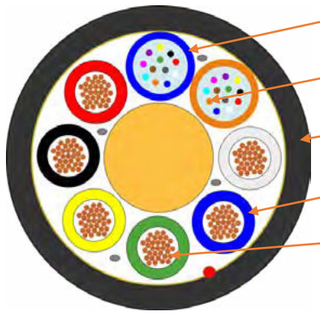
Fiber Count	Fiber Type	Outer Diameter (Nominal)	Mass (Nominal)	Operating Temperature	Generic Specification
1f	ITU-T G657A2	3mm	9g/m	-40°C to +60°C	ADSS 1F SM

HYBRID CABLES

Having separate power and communication networks are becoming a struggle to efficiently rollout and manage. Power infrastructure are usually managed by 3rd parties (Building owners, Local utility) making it timely and costly to provision. The need to further converge these services are becoming a necessity as the era of Smart City and Smart networks are becoming a reality.

Working with innovative partners we have enhanced our FiberFlow products to remotely power low voltage network access devices. Using our optical fiber network solutions as a basis to design a optical communication system with electrical conductors. The applications and benefits for a dual distributions network (power and communication) are truly vast and revolutionary.





ONEDIG™

Save time and money,
Speed up deployment.

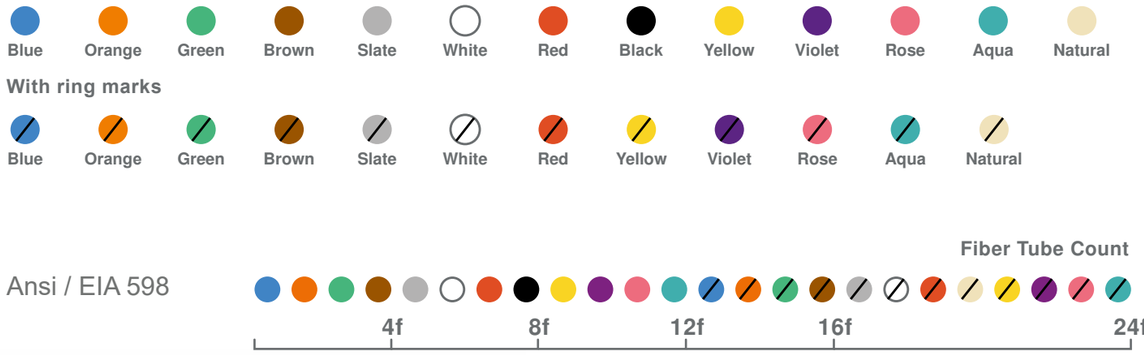
FEATURES & BENEFITS

- **Single installation capex for communications and power network.**
- **Single point of failure – Manage backup power systems at a centralized point.**
- **Safe low voltage DC to DC systems with lightweight cables that can be deployed easily.**
- **Compact powered fiber cable systems to overcome various installation challenges.**
- **Minimal deployment disruptions with a single systems**
- **Minimal footprint for lower visual pollution.**
- **Safer electricity (DC to DC and Digital Electricity) with more network deployments this risk of electrical faults increase. Centralized control with safer technologies mitigates this risk.**

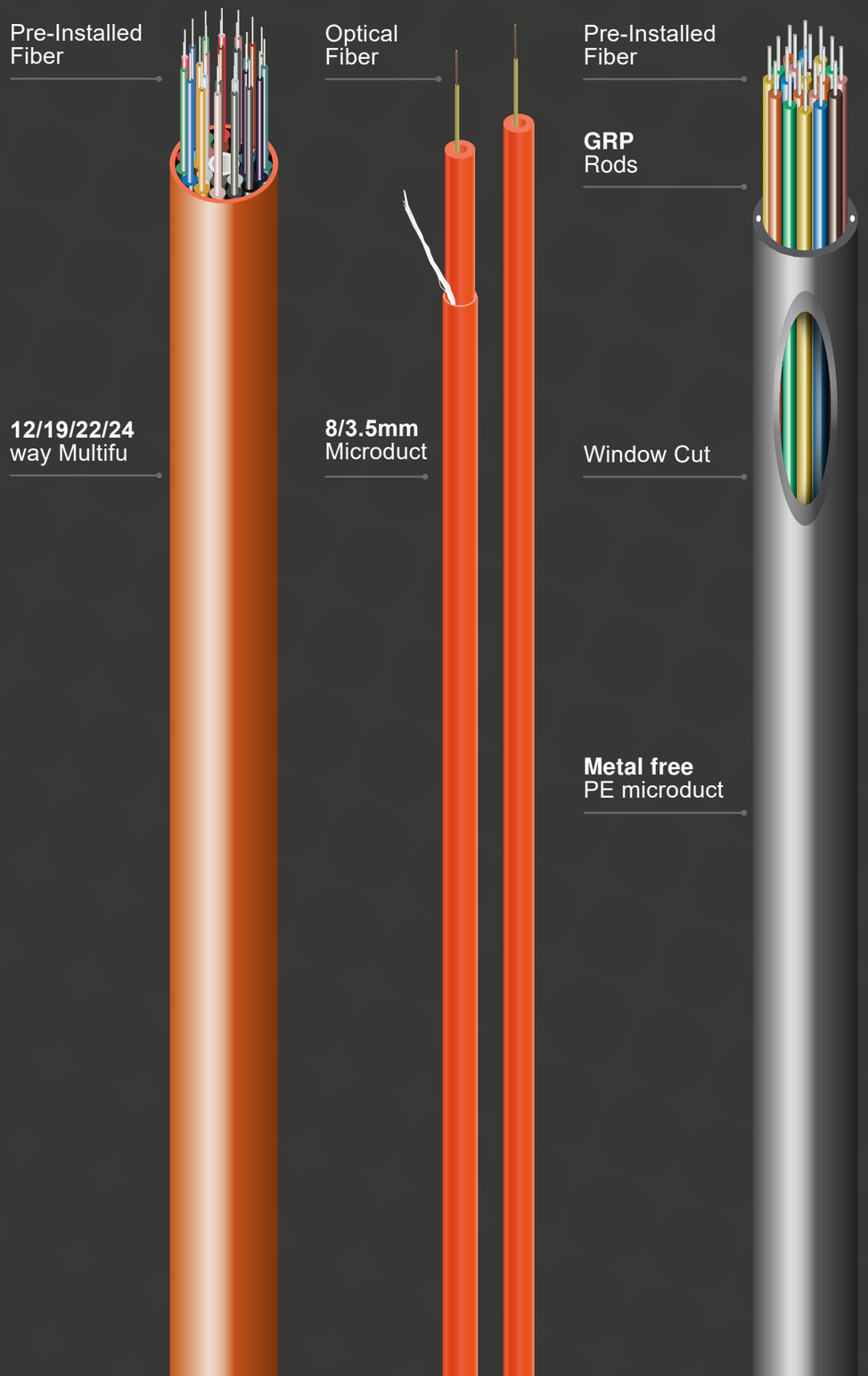
EMTELLE

FIBER COLOR IDENTIFICATION

As a supplier of fiber optic network solutions in the US Telecoms market, we recognize the paramount importance of Fiber Color Identification in ensuring the seamless deployment and maintenance of robust networks. Our commitment to adhering strictly to the Electronic Industries Association (EIA) 598 standard underscores our dedication to providing reliable solutions for our valued partners. By supplying fiber optic cables with meticulously implemented color codes, we empower network operators with the confidence that our products align seamlessly with industry standards, facilitating error-free installations and efficient network management. Trust in our commitment to quality and compliance as we deliver fiber optics that meet and exceed the rigorous demands of the evolving telecommunications landscape.



See Page 80
for Fiber Cable
Accessories



The FIT-range combines Emtelle's core fiber and duct products and offers factory pre-installed microducts and bundles. Pre-installed solutions provide the benefits of blown fiber without the need of blowing on-site so you can achieve a fully "blown" network from Day 1 of installation. These solutions reduce the total costs of a project, minimise time, install equipment, and eliminate the expenses associated with blowing. The FIT (Fiber-in-Tube) range offers high-speed installation and "FTTH in ONE DIG".

MULTIFU™

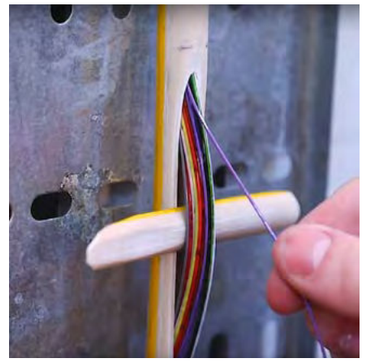
- **Reduce CAPEX per home passed and home connected on Day 1**
- **Minimise installation time and reduce failure rate**

RTRYVA™

- **Fiber tubes (within the RTRYVA) can vary from 2-12 fibers per tube**
- **Pull back distance can be up to 150m *dependant on exact route**
- **GRP rods to offer additional strength and longevity**

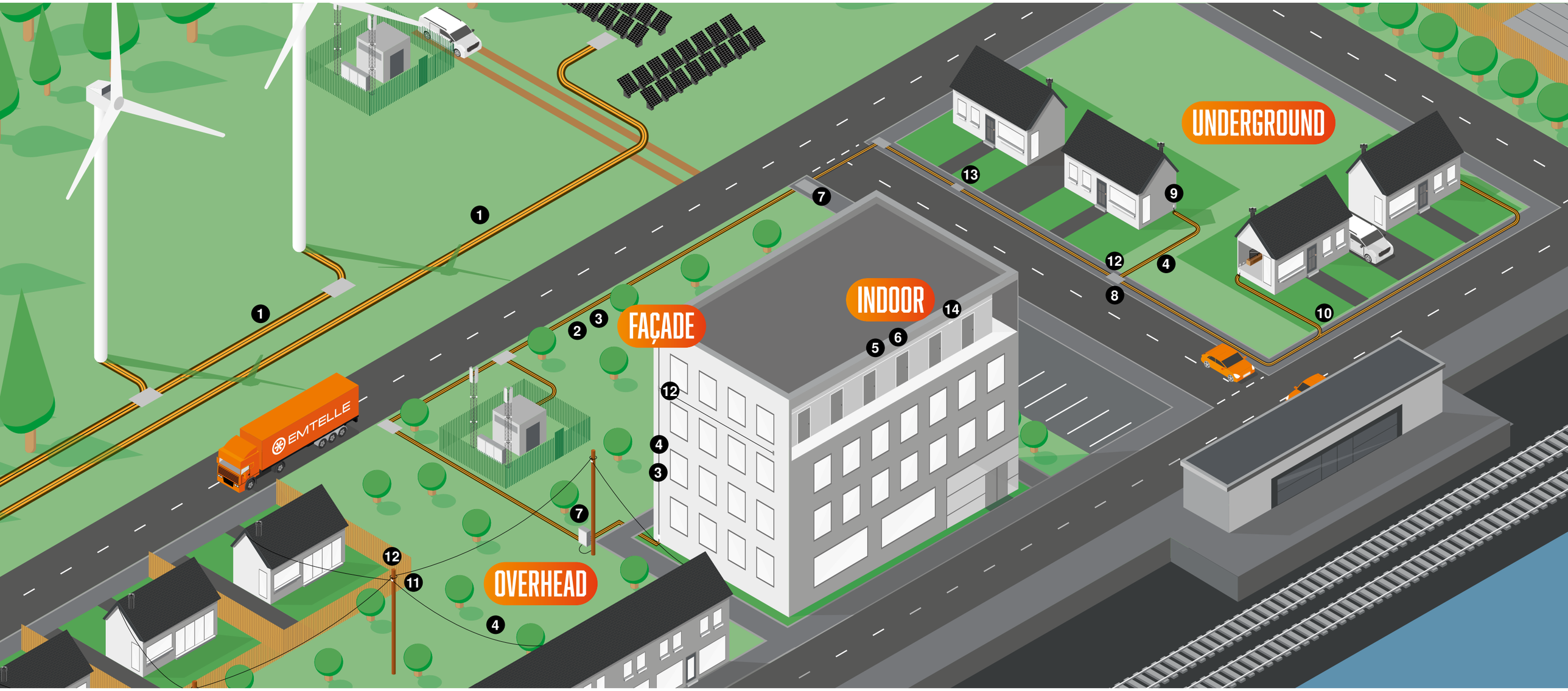
PIFU™

- **A Direct Buried cable thats upgradable**
- **Quick to repair and replace fibers even where physical damage has occurred**
- **Capable of being direct buried into suitably prepared ground**



PRE-FIBERED

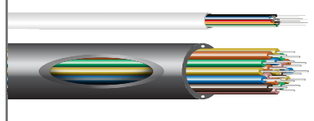
PRE-FIBERED SOLUTIONS



For more information please see the following pages

page 49 — 1 — Pre-Cabled Sub-Duct
page 49 — 2 — MULTIFU
page 50 — 3 — RTRYVA
page 50 — 4 — PIFU
page 50 — 5 — Indoor PIFU
page 50 — 6 — Indoor RTRYVA
page 59 — 7 — EM-Finity Closures
page 71 — 8 — Access Box
page 71 — 9 — Boundary Wall Box
page 77 — 10 — EM-Bend
page 81 — 11 — Overhead Accessories
page 69 — 12 — EMU Box
page 77 — 13 — EM-Marker
page 71 — 14 — RTRYVA 6mm BOBM

PRE-FIBERED SPECIFICATIONS

PRODUCT SPECIFICATIONS					PRODUCT SPECIFICATIONS						
Product	Fiber Count	Dimension	Length	Material	Application						
					Overhead	Underground	Indoor	Moleplough	HDD	Micro Trench	Open Trench
 Pre-Cabled Sub-Duct	2 - 4f	8/3.5mm	1000 - 2000m	Low Friction	✓	✓	✗	✓	✓	✓	✓
 MULTIFU	1 - 576f	2.05mm	25 - 1000m	Thermoplastic	✗	✓	✗	✗	✗	✓	✓
 RTRYVA	8 - 360f	15mm	2500m	HDPE	✓	✓	Using LFH Sheath	✗	✓	✓	✓
 PIFU	2 - 4f	8/3.5mm	1000 - 2000m	Low Friction	Using Universal Drop Tube	✓	Using LFH Microduct	✗	✓	✓	✓

PRE-FIBERED DATASHEETS

MULTIFU
MHT2675
Scan QR code for
Datasheet

RTRYVA
CP2509
Scan QR code for
Datasheet

PIFU
MHT2059
Scan QR code for
Datasheet

See Page 71 for EMU Box Solution

PRE-CABLED SUB-DUCT

Pre-Cabled Sub-Duct can have either fiber optic or fiber mini-cables as a pre-installed product. Lengths of up to 10km are available dependent on the cable type and materials. Emtelle can produce various combinations of a single fiber cable in HDPE duct. This cable can be removed at a later date and upgraded as required.

PRODUCT SPECIFICATIONS				
Cable Type	Cable Diameter	Mini Trenching	Mole Ploughing	Overhead
Fiber Bundle	1.1 - 1.6 mm	8/3.5mm	16/10mm	6/2.7mm
Microcable	2.8mm	10/6mm	25/17mm	8/5mm
Minicable	6 - 10.5 mm	20/16mm	25/17mm	20/16mm
Conventional Fiber Cables	10 - 16 mm	31/25mm	31/25mm	25/20mm

Please see Page 11 - 12 for Subduct details
Please see Page 35 - 40 for Cable details

MULTIFU

MULTIFU is a tube bundle – a duct with microducts pre-installed with a fiber unit – ensuring fiber and duct can be installed in one process. This means the Multifu solution reduces the need to use specialist blowing equipment when connecting customers and allows for increased rollout speeds and reduced skill requirements.

PRODUCT SPECIFICATIONS			
Type	Bundle OD	Mass (Nominal)	Generic Specification
2-Way DBmf	12.2 x 22.2 mm	153g/m	MHT2675
7-Way DBmf	32.2mm	435g/m	
8-Way DBmf	38.7mm	463g/m	
12-Way DBmf	42.8mm	737g/m	
14-Way DBmf	46.1mm	817g/m	
19-Way DBmf	50.3mm	1024g/m	
24-Way DBmf	62.2mm	1154g/m	

RTRYVA

RTRYVA is a high-density fiber pull back cable constructed of pre-installed loose fiber units, protected within a PE microduct. RTRYVA offers a solution where duct access and branching from the solution is quick and easy, using minimal amount of tool, training and installation equipment.

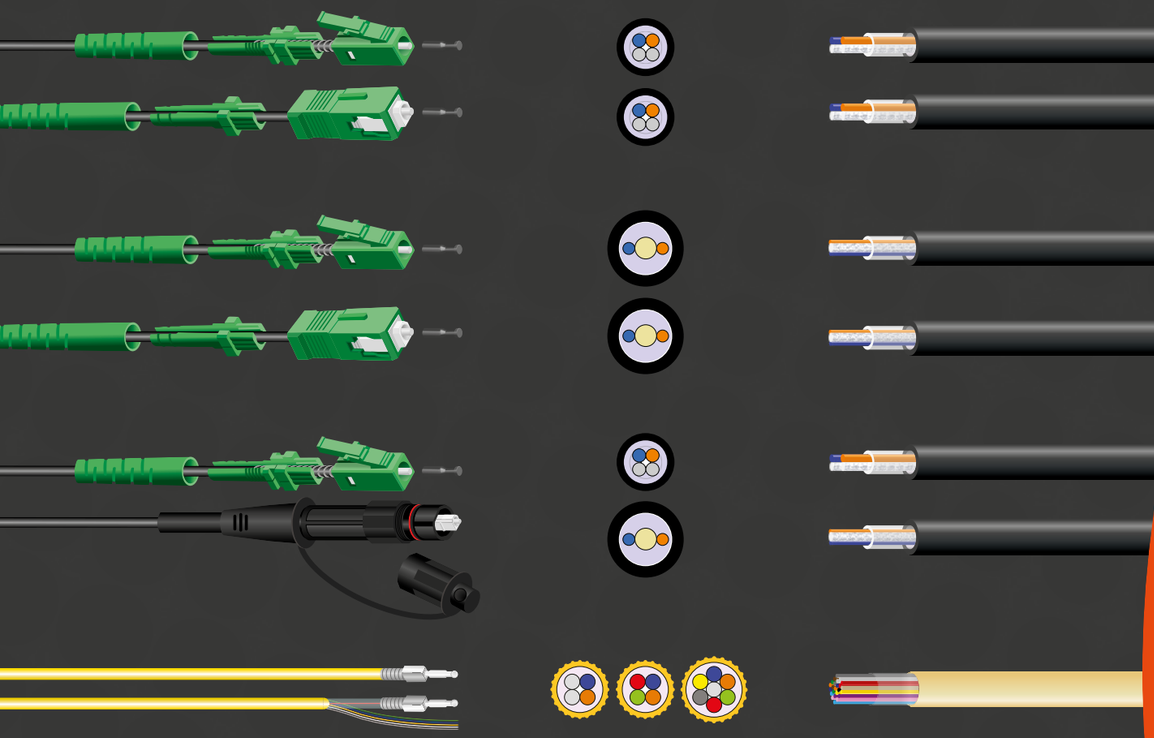
PRODUCT SPECIFICATIONS		
RTRYVA Size	Fiber Count	Generic Specification
6/4mm LFH - B2ca-s1a,d0,a1	8 x 1f	CP4681 - Indoor CPR Rated
8/5mm	12 x 2f	CP2509
	12 x 4f	
	6 x 12f	
10/6mm	14 x 2f	
	14 x 4f	
	8 x 12f	
12/8mm	24 x 2f	
	24 x 4f	
	14 x 12f	
15/9mm	48 x 2f	
	48 x 4f	
	30 x 12f	
16/10mm	48 x 2f	
	48 x 4f	
	30 x 12f	

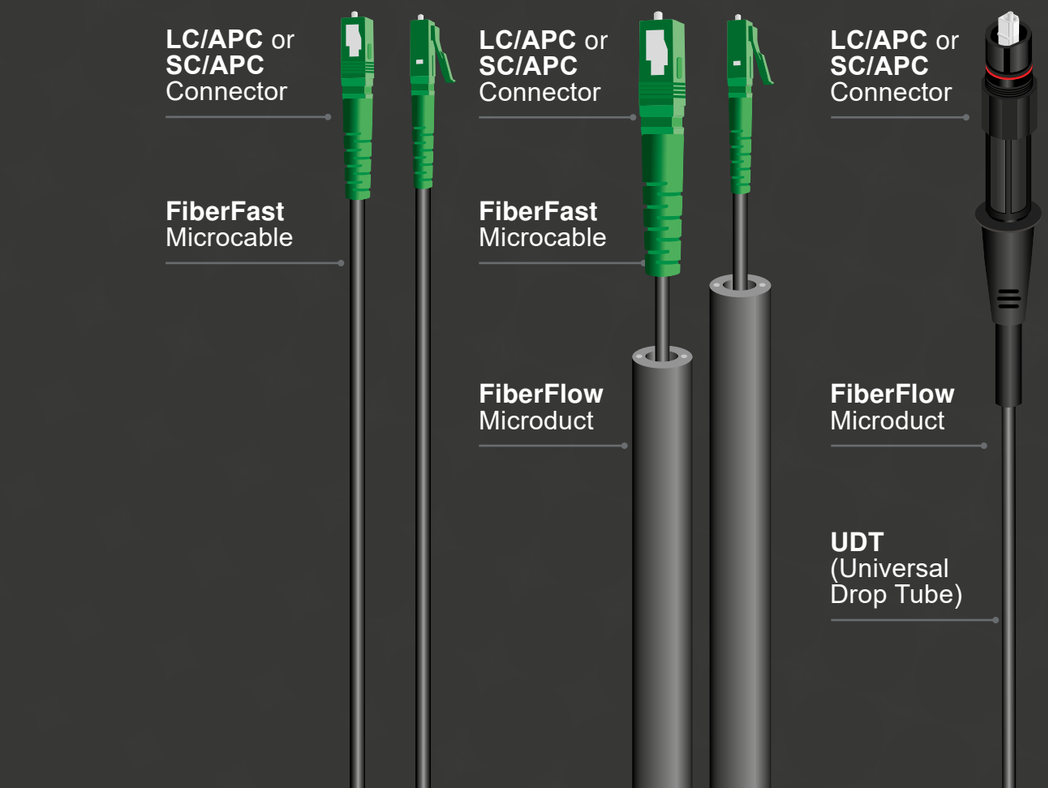
PIFU

PIFU is an ideal product for FTTH drops to homes as it is quick to repair and replace the fibers in an event where physical damage has occurred.

PRODUCT SPECIFICATIONS		
PIFU Size	Description	Generic Specification
5/3.5mm	2/4 PIFU - Dca-s1a,d2,a1	Indoor CPR Rated
7.4mm	2/4 PIFU - B2ca-s1a,d2,a1	
8/3.5mm	2 PIFU MM OM3	MHT2059
8/3.5mm	2 PIFU G652d	
8/3.5mm	4 PIFU G652d	
8/3.5mm	2 PIFU G657A1	

CONNECTORISED DROP SOLUTIONS





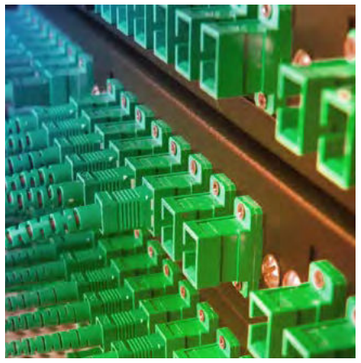
Are you looking for high-speed installations and Plug & Play? Emtelle has fiber termination facilities that create Pre-connectorized solutions according to the customer's requirements. Our Pre-connectorized QWK-range comes with connectors on one or both ends and has been deployed globally across the fiber and duct industry. Choosing a Pre-connectorized solution offers all the benefits of blown fiber without the need for splicing. The solutions focus on creating the best value, reducing total project costs, and minimising time and disruption.

QWKlink™

- **QWKlink is blown into Emtelle's 3.5mm - 4mm bored Microducts**
- **Can be connectorised at one end or both ends** (SC & LC APC connector options available)
- **No fiber splicing required for the customer drop**

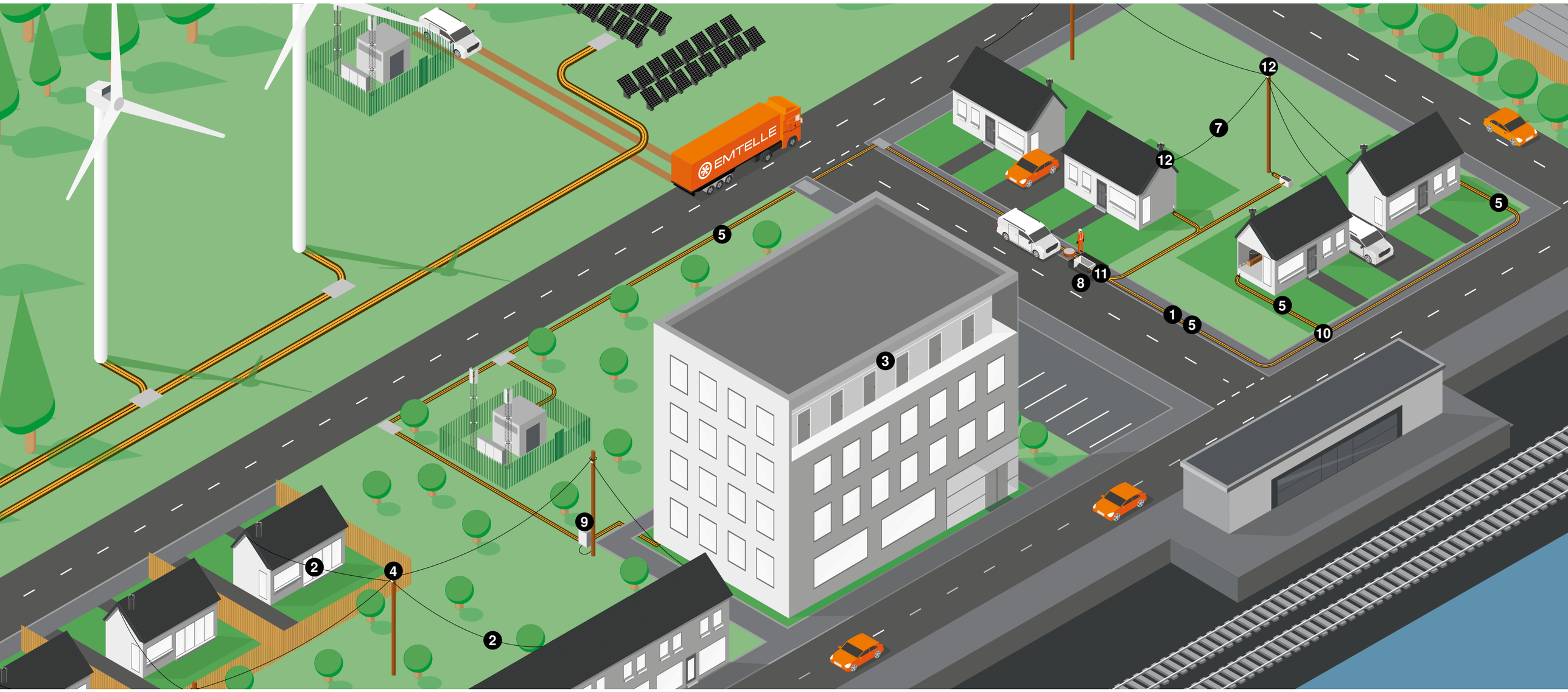
QWKconnect™

- **Universal uses from direct bury, ducted, façade & aerial**
- **Reduced skill set & training required for the install**
- **Cost (and space) effective compared to similar products in the market**



PRE-CONNECTORIZED

PRE-CONNECTORIZED SOLUTIONS



For more information please see the following pages

page 51 — 1 — QWKlink
page 51 — 2 — QWKconnect
page 51 — 3 — QWKconnect Indoor
page 51 — 4 — Hardened Connector
page 11 — 5 — Microducts
page 25 — 6 — FiberFlow WebFlex
page 12 — 7 — Universal Drop Tube
page 59 — 8 — EM-Finity Closure
page 73 — 9 — Cabinets / Manholes
page 71 — 10 — Boundary Boxes
page 80 — 11 — ELF
page 81 — 12 — Overhead Accessories

NO SPLICING
ON PRE-CONNECTORIZED SOLUTIONS

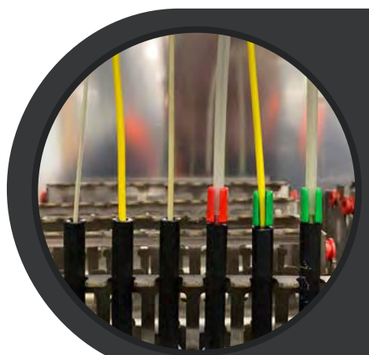
PRE-CONNECTORIZED SPECIFICATIONS

PRODUCT SPECIFICATIONS					PRODUCT SPECIFICATIONS						
Product	Connector	Dimension	Length	Material	Application			Installation			
					Overhead	Underground	Indoor	Assembled in field or factory	Blown	Pulled	Pushed
 QWKlink	LC/APC or SC/APC	1.05mm	in 25 / 50m increments	Low Friction Liner	✓	✓	✓	field	✓	✗	✓
 QWKconnect	LC/APC or SC/APC	6/3.2mm	in 25 / 50m increments	HDPE	✓	✓	✗	field	✗	✓	✓
		7/3.7mm		HDPE	✓	✓	✗	field	✗	✓	✓
		5/3.5mm		HDPE	✓	✓	✗	field	✗	✓	✗
		7/4mm		HDPE	✓	✓	✗	field	✗	✓	✗
 QWKconnect Indoor	LC/APC or SC/APC	5/3.5mm		LFH	✗	✗	✓	field	✗	✓	✗
		7/4mm		LFH	✗	✗	✓	field	✗	✓	✗
 Hardened Connector	LC/APC or SC/APC	2.02mm	in 25 / 50m increments	HDPE	✗	✓	✗	factory	✗	✗	✓

PRE-CONNECTORIZED DATASHEETS

UK_DS_QWKLINK
Scan QR code for
Datasheet

UK_DS_QWKCONNECT
Scan QR code for
Datasheet



See Page 80 for ELF Solution

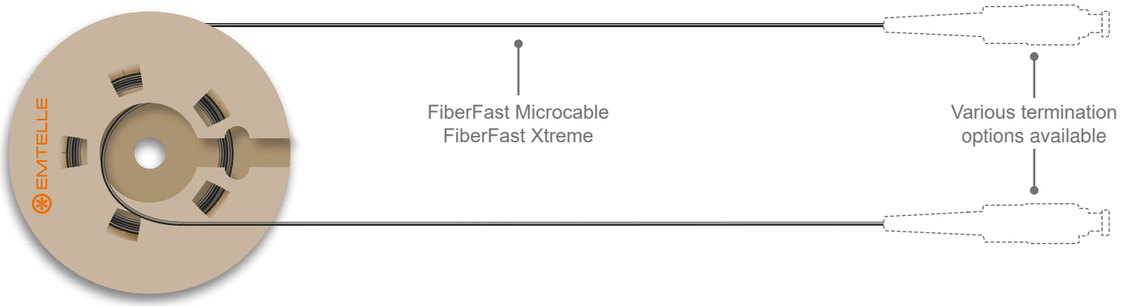
QWKLINK

QWKlink is our patented fiber bundle pre-connectorized during manufacture. The pre-connectorized fiber bundle allows for fiber connectors of specific types – SC or LC APC ferrule to be installed. This eliminates the need for splicing fiber, meaning no specialist training or tools are required for the install.

PRODUCT SPECIFICATIONS

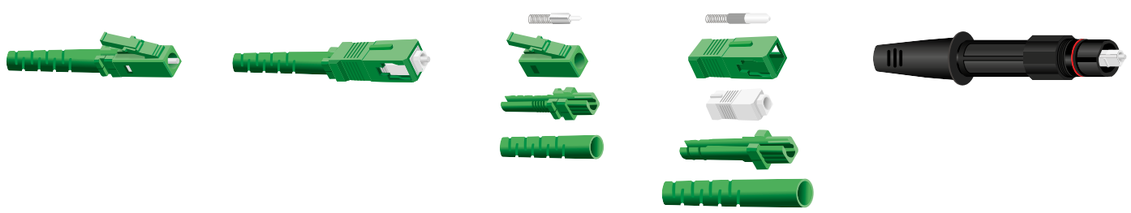
Fiber Type	Fiber Count	Connector	Generic Specification
G.652.D	2f	LC/APC or SC/APC	UK_DS_QWKLINK
	4f		
G.657.A1	2f		
	4f		
G.657.A2	2f		
	4f		

BUILD YOUR OWN QWKLINK

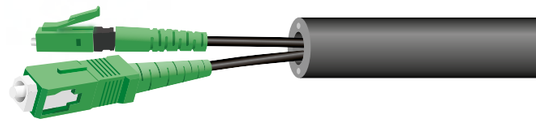


Termination Options

LC Connector | SC Connector | LCv Connector | SCv Connector | Hardened Connector



QWKCONNECT

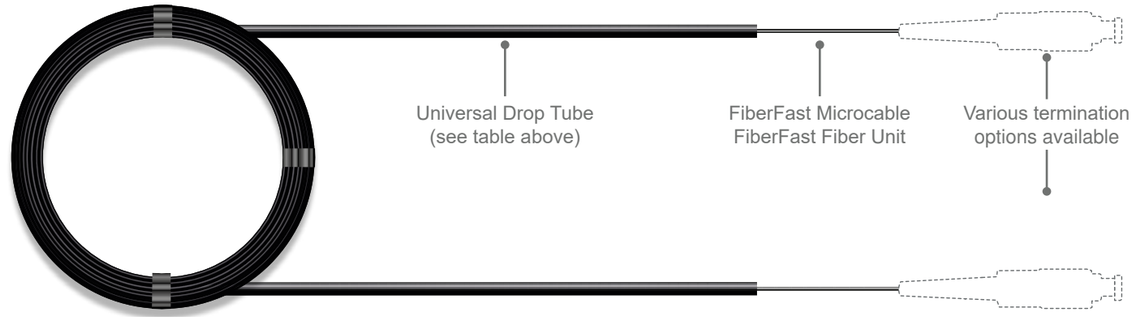


QWKconnect is effectively Pre-connectorized fiber within a FiberFlow microduct that is pre-installed during the manufacturing process that gives a dedicated pathway to each home. This innovative design means no blowing or fiber splicing is required, thus offering a simple solution that ensures a quick connection process without the need for specialist training or tools.

PRODUCT SPECIFICATIONS

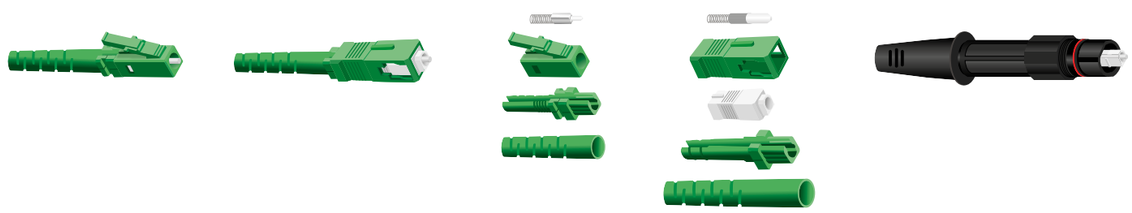
QWKconnect Size	Application	Fiber Type	Fiber Count	Connector	Generic Specification
5/3.5mm	External HDPE	G.652.D G.657.A1 G.657.A2	2f - 4f	LC/APC or SC/APC	UK_DS_QWKCONNECT
7/4mm					
8/4mm					
5/3.5mm	Internal LFH - Dca s1, d2, a1				
7/4mm	Internal LFH - B2ca-s1a, d2, a1				
6/3.2mm	Aerial MDPE				
7/3.7mm					

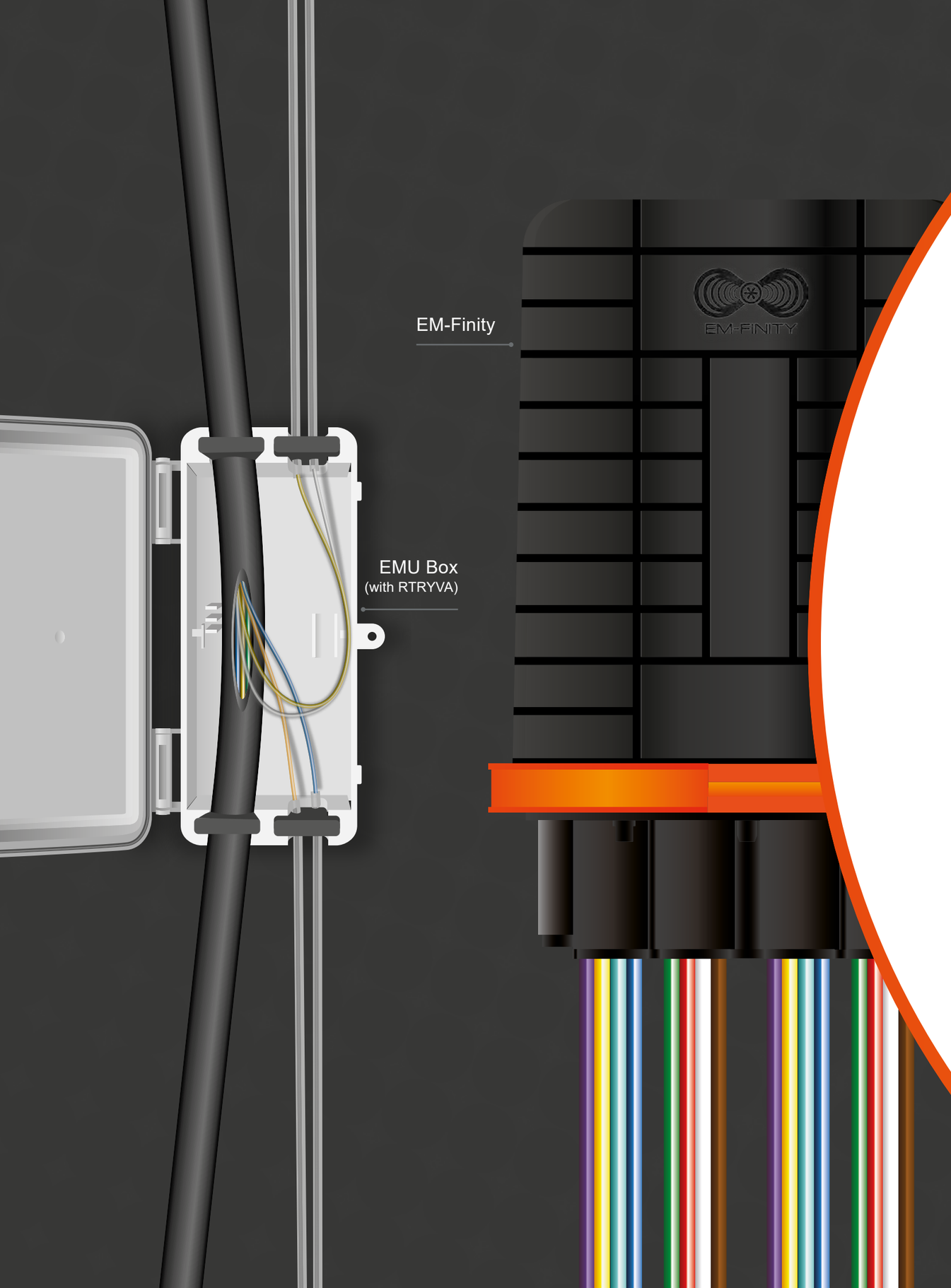
BUILD YOUR OWN QWKCONNECT



Termination Options

LC Connector | SC Connector | LCv Connector | SCv Connector | Hardened Connector





It takes more than fiber and ducts to build an extensive network and ensure its efficiency and effectiveness. Emtelle doesn't just offer a product - but a complete, quality solution. Our range of accessories complements and completes the full solution. We offer everything from closures & cabinets to marker pens to labels. All accessories are tested on compatibility – a network is only as strong as its smallest components.

CLOSURES

EM-FINITY CLOSURE

The EM-Finity fiber optic splice closure brings innovation to make the expansion process more straightforward and, at the same time, environmentally friendly. In the future, splice closures will be the only access point in a drop network, so having a splice closure that's easy to manage, intuitive and color-coordinated, ensures quality workmanship for years to come.

Communications Networks use color to identify ducts, microducts, fiber cables and fibers. Now Emtelle have introduced color into splice enclosures to ensure your network is fully color co-ordinated and Intuitive for installers now and in the distant future.

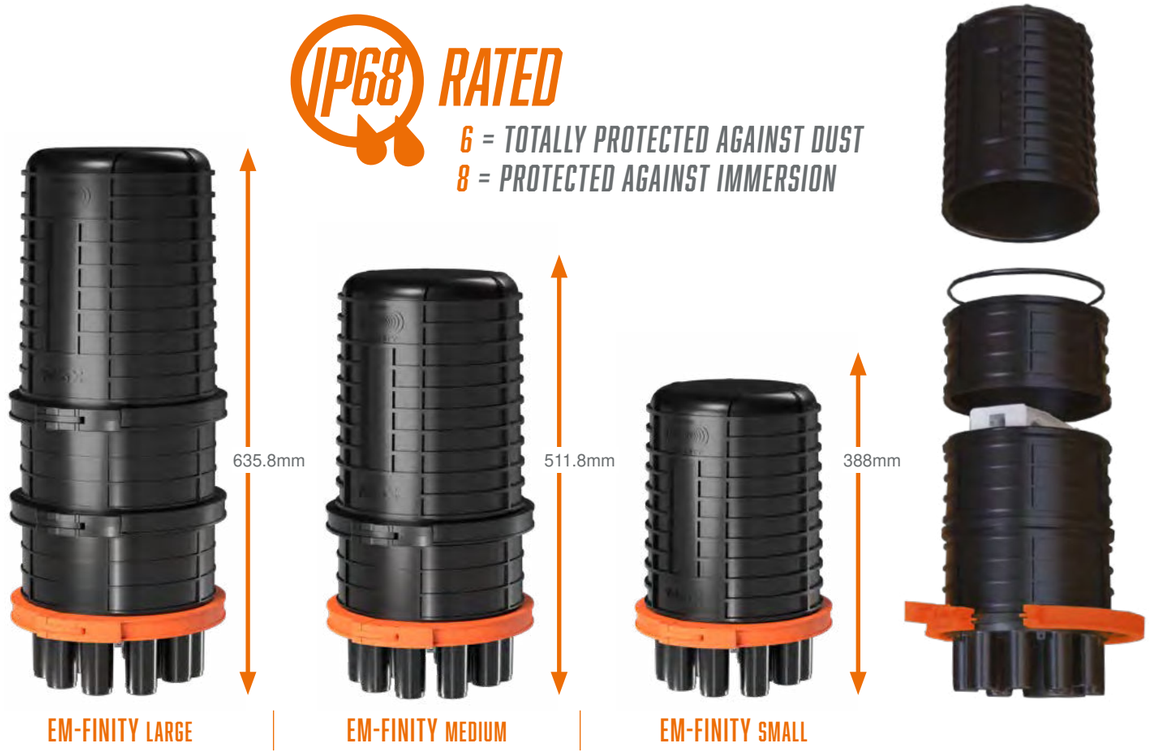
EM-Finity **Installation Video** Scan QR code for **Video**

EM-Finity **Brochure** Scan QR code for **Brochure**

FEATURES & BENEFITS

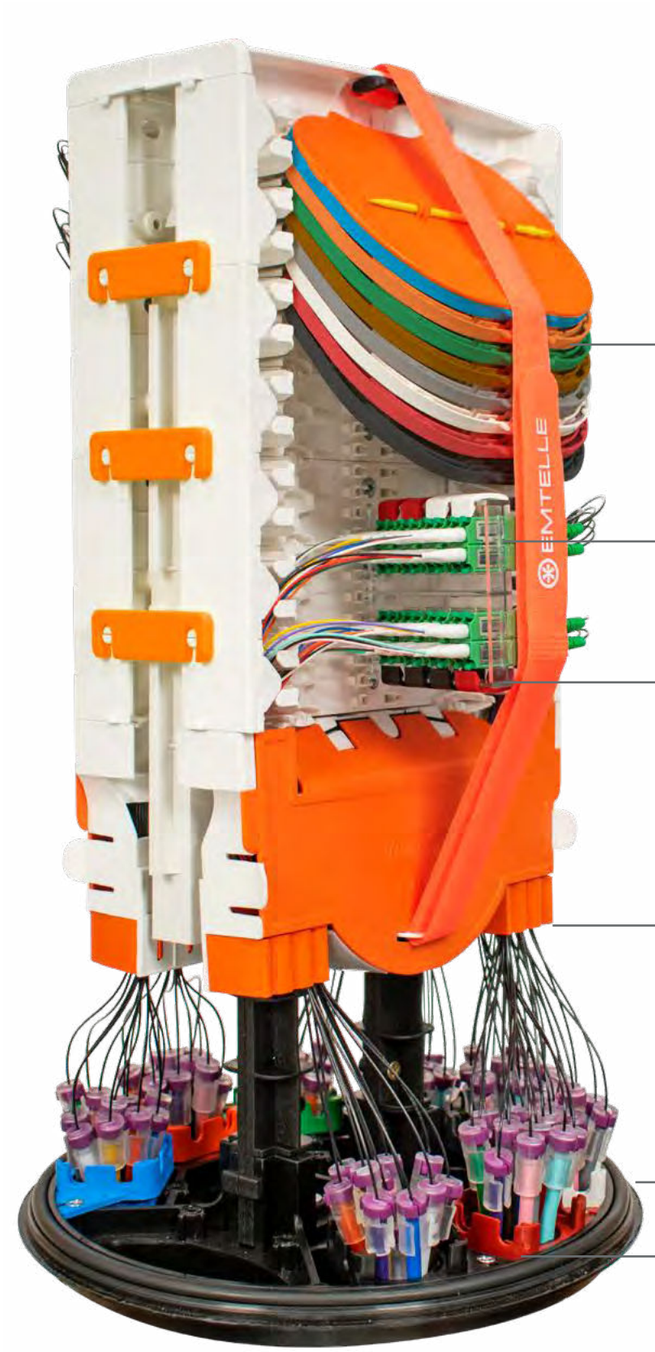
BOTH THE CAPEX & OPEX ARE FUTURE-PROOF!

- 3 standard versions, **S, M & L** with the same basic body for all sizes.
- Infinite capacity, with splice expansion kits inc. dome rings available to enable further expansion.
- Two vertical tray stacks for high fiber count splicing, fully utilising the space within the dome.
- Splice trays can hold **12 / 24** fusion splices.
- Splitter trays can hold up to four splitters 40x4x4mm or two splitters 40x4x4mm + one splitter 60x7x4mm and up to 8 fusion splices for the "INPUT" of the splitters.
- The base of each **EM-Finity** closure has **12** round cable ports **+1** oval port.
- Cables can be sealed using either thermal sleeves and/or mechanical glands.
- Multi-way entry glands allow for more cables to be accommodated inside the closure - **2 to 12** cables or microducts multi-way glands.
- Fibers pass from stack to stack through the bottom of the fiber management.
- Central loop fiber storage with special cassette.
- Capable of sealing Emtelle microducts **4-12mm**.
- Can be configured for Pre-connectorized, **24, 48, 72** and **96** customer connections.
- Can also be configured with no trays for a custom build.



EM-FINITY COLOR CODED SYSTEM

PRE-CONNECTORIZED FEATURES & BENEFITS



96 customer connections max.

Splitters or splice trays can accommodate PLC splitters, and fusion splicing. With fiber management for front to back routing of the fibers.

One modular termination bracket can hold up to **32** customers.

Unique color coded locking mounts and connector collars makes installation identification simple, quick and self-explanatory.

The 90mm internal height gives extra room for gas/water blocking internally and holds the bending radius of the fiber.

Upto **96** individual drop ports avaiable on the base.

SUITABLE FOR OVERHEAD & UNDERGROUND INSTALLATION

The EM-Finity closure can be installed vertically and horizontally, directly buried in the ground or with specific wall and pole installation supports.

The metallic pole and wall support for the EM-Finity closure are designed in a way that the installer can access in the closure without having to remove it from where it is.

Its “horse-shoe” design allows it to keep the base of the closure fixed, enabling the removal of the dome.

MECHANICAL & HEAT-SHRINK SEALING SYSTEMS

The EM-Finity closure can have the entry cables sealed, either by means of heat-shrink sleeves or mechanical, for all the entry ports.

The heat-shrink sleeves will be supplied in kits with all the components required to prepare and install the cables.

“THE DEFINITION OF SIMPLICITY”

Dave Rames, Emtelle Lead applications engineer and Expert on FOSC.

EM-FINITY SMALL

EM-Finity Small has the capability to have either 288 splices, 12 SC or 24 LC Pre-connectorized customers.

PRODUCT SPECIFICATIONS	
Splice Capacity	12 per tray
Trays Per Dome	2 x 12 = 24
Total Splice Capacity	288

UK_DS_76676
Scan QR code for
Datasheet

EM-FINITY MEDIUM

EM-Finity Medium has the capability to have either 672 splices, 48 SC or 96 LC Pre-connectorized customers.

PRODUCT SPECIFICATIONS	
Splice Capacity	12 per tray
Trays Per Dome	2 x 28 = 56
Total Splice Capacity	672

UK_DS_76677
Scan QR code for
Datasheet

EM-FINITY LARGE

EM-Finity Large has the capability to have either 1056 splices, 48 SC or 96 LC Pre-connectorized customers.

PRODUCT SPECIFICATIONS	
Splice Capacity	12 per tray
Trays Per Dome	2 x 48 = 88
Total Splice Capacity	1056

UK_DS_76678
Scan QR code for
Datasheet

EM-FINITY LITE

EM-Finity Lite delivers versatility, ease of installation and the capability to have either 144 splices, 12 SC or 24 LC Pre-connectorized customers.

PRODUCT SPECIFICATIONS	
Splice Capacity	24 per tray
Trays Per Dome	1 x 6 = 6
Total Splice Capacity	144

UK_DS_EM-Finity_Lite
Scan QR code for
Datasheet

EM-FINITY SPLICE TRAYS

EM-Finity Splice Trays sub-assembly kit for Em-Finity Small, Medium and Large splice domes, sub-assembly consists of 8 x 12 fiber splice trays with heat shrink type splice holder.

UK_DS_Splice_Trays
Scan QR code for
Datasheet

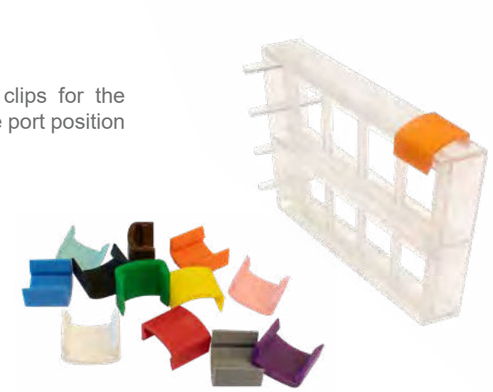
EM-FINITY LOCKING MOUNT

EM-Finity Locking Mount mechanical seal mounting for the round port microduct seals for EM-Finity Small, Medium, Large and LITE splice dome closures.

UK_DS_Locking_Mount
Scan QR code for
Datasheet

EM-FINITY BRACKET CLIP

EM-Finity Bracket Clips are bespoke identification clips for the EM-Finity dome closure range. Each clip identifies the port position for the ease of installation and maintenance.



UK_DS_Bracket_Clip
Scan QR code for
Datasheet

EM-FINITY OVAL PORT SEAL

Oval Port Seal for Emtelle microducts. The mechanical seals work by compression to seal the microducts or cables into the EM-Finity range of splice domes.

UK_DS_Oval Port Seal
Scan QR code for
Datasheet

UK_DS_Oval Port Lite
Scan QR code for
Datasheet

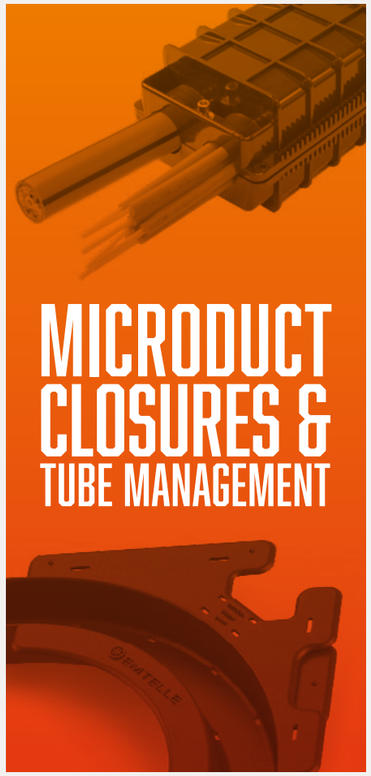
EM-FINITY ROUND PORT SEAL

Round Port Seal for Emtelle microducts. The mechanical seals work by compression, to seal the microducts or cables into the EM-Finity range of splice domes. Small, Medium and Large.

UK_DS_Round Port Seal
Scan QR code for
Datasheet

UK_DS_Round Port Seal No Collar
Scan QR code for
Datasheet

See Page 51
for Pre-connectorized
Solutions



Upgrade your FFTx network effortlessly with our Microduct Closures & Tube Management solutions, designed for optimal performance and durability. These innovations seamlessly integrate into your network, providing secure access points for efficient microduct terminations and splices. Emtelle's tailored solutions ensure precision and adaptability, elevating your network's efficiency.



CLO1

CLO1 closure is a protective closure to manage and distribute microducts. The closure offers superior ingress protection with 4 large diameter port. Slightly more compact then the H-Branch.

UK_DS_9501
Scan QR code for
Datasheet

EM-WRAP

EM-Wrap product is designed to be quick and easy to install. It offers protection to exposed microducts and tube connectors when performing a tube breakout. It also offers ingress protection to the exposed system.

UK_DS_75128
Scan QR code for
Datasheet

EM-BEND

EM-Bend product is designed to be quick and easy to install only using cable ties. It offers a smooth 90° bend while protecting the tube connector for optimal cable blowing performance. Can also be used as an L/T-branch.

UK_DS_75444
Scan QR code for
Datasheet

EXTERNAL CUSTOMER LEAD IN (LARGE)

External Customer Lead In and through wall protection of fiber optical customer drop cable.

UK_DS_71503
Scan QR code for
Datasheet

EXTERNAL CUSTOMER LEAD IN (SMALL)

External Customer Lead In and through wall protection of fiber optical customer drop cable. The solution offers an aesthetically pleasing installation while functionally protecting infrastructure.

UK_DS_71501
Scan QR code for
Datasheet

3 / 4 PORT ITFP

Indoor Tube Flexibility Point closure for easy routing of internal microducts inside a building riser or cable tray while offering bend protection and connector protection.

UK_DS_7258
Scan QR code for
Datasheet

INTERNAL TDC

Internal Tube Distribution Closure is a protective closure to manage and distribute microducts. The closure allows for easy routing in almost any direction through its 7 ports. Flame retardant material allows for use inside.

UK_DS_70283
Scan QR code for
Datasheet

Y-BRANCH

Y-branch closure for deviation microtube in separate directions inside a building riser or cable tray while offering bend protection and connector protection.

UK_DS_9018
Scan QR code for
Datasheet

RTRYVA 6MM BOBM

RTRYVA 6mm Break Out Bend Manager is a discrete protective wall mountable housing / closure. The closure can support a 60mm window cut with built in fiber bend management.

UK_DS_6MM BOBM
Scan QR code for
Datasheet

RAPID-STOR

Rapid-Stor is a multi-purpose bracket designed to manage cable slack, enclosure fixation, store cables within underground vaults and aerial cable hardware attachment.

UK_DS_Rapid-Stor
Scan QR code for
Datasheet

BOUNDARY WALL BOX SLACK

The Boundary Wall Box Slack Storage is a versatile storage box deployed in the FFTx network. The box can be used to store the slack from pre-terminated drop cables or fiber modules at the end of a riser cable.

UK_DS_ Boundary_Wall_ Box_Slack_ Storage
Scan QR code for
Datasheet

CCP

Customer Connection Point providing a fiber termination point inside a residential property. The CCP comes complete with a pre-installed pigtail, connector and adaptor.

UK_DS_74428
Scan QR code for
Datasheet

CONNECT POINT

Connect Point is an enclosure that fully encapsulates an internal mounting frame and splice tray, whilst sitting flush against a wall.

UK_DS_Connect_ Point
Scan QR code for
Datasheet

FIBER OPTIC WALL OUTLET

Fiber Optic Wall Outlet enables a fiber optic cable termination point to be presented within the end user home. The wall outlet can accommodate two fiber adaptors, either SC simplex or LC Duplex.

UK_DS_Fiber_ Optic_Wall_Outlet
Scan QR code for
Datasheet

BOUNDARY WALL BOX

Boundary Wall Box is an IP55 termination point, installed as outside plant on walls and fences in the FFTx Network.

UK_DS_ Boundary_Wall_ Box
Scan QR code for
Datasheet

EMU BOX

EMU Box has been designed by Emtelle to to suit many requirements for FTTH and FTTP projects.

UK_DS_72792
Scan QR code for
Datasheet

CCP+DROP

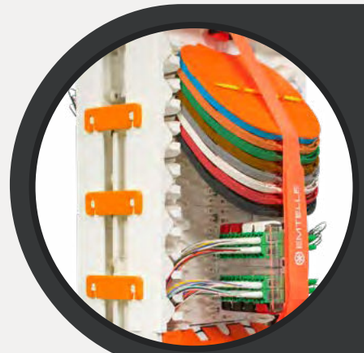
Customer Connection Point solution – pre-installed internal drop cable with customer connection point (CCP). Fully assemble for increased quality assurance and a fast reliable deployment.

UK_DS_DROP-CABLE-HOME
Scan QR code for
Datasheet

MICROLOOP

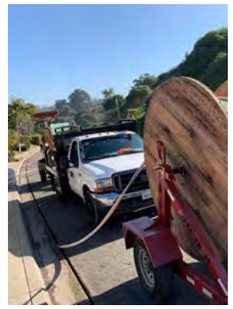
Microloop is a multifunctional enclosure deployed in distribution networks. It can be wall mounted and is suitable for placement in manhole chambers or boundary access points.

UK_DS_Microloop
Scan QR code for
Datasheet



See Page 59
for Closure
Solutions

Elevate your FFTx network infrastructure with our Vaults designed for optimal performance and durability. Our range integrates into your network, providing secure access points for efficient fiber terminations and splices. Choose reliability and scalability with our Vaults, tailored to meet the demands of your network expansion.



VAULTS

Vaults have been designed for both footway and roadway installations where they provide access to underground ducting.

COVER

Covers are suitably designed with manual handling requirements in mind and feature slide out covers with tapered sides for safety.

FFTX BOX

FFTx Box is a compact access point from where a technician can easily maintain and install customer connection infrastructure. It can be used to store excess cable slack or fit a compact splice closure.

UK_DS_SUB_BOXES
Scan QR code for **Datasheet**

ACCESS BOX

Access Box is a micro handhole that provides easy access to feeder & distribution cables and or ducts.

UK_DS_BOUNDARY_ACCESS_BOX
Scan QR code for **Datasheet**

SMART BOX 300

Smart Box 300 is an underground mini chamber for housing microducts and splice closures. It's normally located at the boundary of the customer's property during FTTH installations and is used as an overlength storage.

UK_DS_SUB_BOXES
Scan QR code for **Datasheet**

SMART BOX 400

Smart Box 400 is an underground mini chamber for housing microducts and splice closures. It's normally located at the boundary of the customer's property during FTTH installations and is used as an overlength storage.

UK_DS_SUB_BOXES
Scan QR code for **Datasheet**

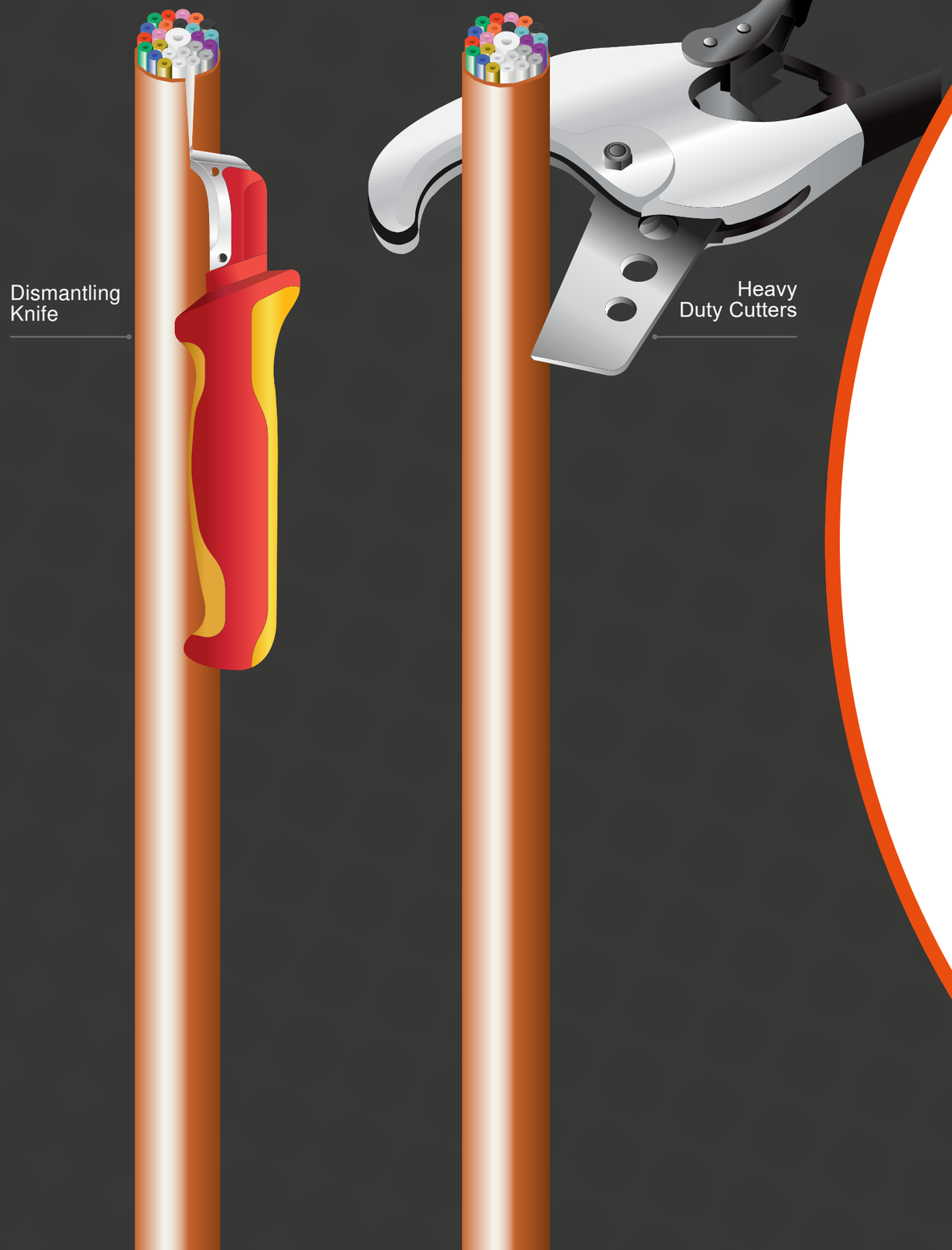
CABINET

Cabinet designed for dense distribution of customer connection and large distribution cable. Customer connections can be directly spliced or distributed though the LGX splitter modules.

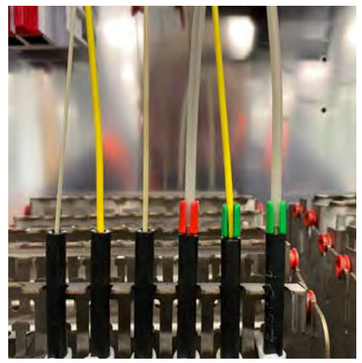
SMARTLOCK LOCK & KEY

Smartlock is a lock and key system that provides an extra line of security to operators and their networks. It allows a cabinet & closure to be protected and only accessed through a dedicated key. GPS tracking & is IP67 rated.

UK_DS_Smartlock
Scan QR code for **Datasheet**



Building up an FTTH network does not end with the products. The key is a proper and professional installation on-site. To support our customers during installation, Emtelle offers installation training and the tools and accessories to assist in a smooth installation. Our blowing equipment is thoroughly tested and suited for use with our ducts and cables. Our tooling equipment allows the preparation of fiber optic splices or the branching of microduct bundles efficiently and correctly.



TOOLS & ACCESSORIES

THICK WALL MICRODUCT CUTTER

Thick Wall Microduct Cutter tool used to cut thick micro walled microduct.

UK_DS_70768
Scan QR code for **Datasheet**

MICRODUCT ROTATIONAL CUTTER

Microduct Rotational Cutter is a handheld tool suitable for stripping cable jackets, cable sub assemblies and microduct both longitudinally and circumferentially.

UK_DS_7299
Scan QR code for **Datasheet**

METAL FREE CUTTER 1DB

Metal Free Cutter 1DB strips round tube bundles in the range of 8-13mm.

UK_DS_7794
Scan QR code for **Datasheet**

WEB SLITTING TOOL

Web Slitting Tool suitable for slitting the web on Emtelle's figure 8 aerial tube assemblies.

UK_DS_9418
Scan QR code for **Datasheet**

ROTATIONAL SHEATH STRIPPER

Rotational Sheath Stripper is designed to strip the outer sheaths from jacketed cables. The depth of the cut is fully adjustable reducing the risk of damaging any sub units within an assembly.

UK_DS_7071
Scan QR code for **Datasheet**

PRIMARY TUBE CUTTER

Primary Tube Cutter gives a clean, straight cut to the FiberFlow microduct before inserting into a connector. Suitable for up to 12mm.

UK_DS_7014
Scan QR code for **Datasheet**

42MM HEAVY DUTY CUTTERS

42mm Heavy Duty Cutters been designed to cut ducts and tube bundles up to an OD of approximately 42mm.

UK_DS_7068
Scan QR code for **Datasheet**

63MM HEAVY DUTY CUTTERS

63mm Heavy Duty Cutters have been designed to cut ducts and tube bundles up to 63mm.

UK_DS_9346
Scan QR code for **Datasheet**

LONGITUDINAL SHEATH STRIPPER

Longitudinal Sheath Stripper has been designed to remove the outer sheath from DB tube bundle. There are four blade depth settings on the tool and it is supplied with two guards giving 12 possible blade depths.

UK_DS_7001
Scan QR code for **Datasheet**

RTRYVA WINDOW CUT TOOL

RTRYVA Window Cut Tool is used to create a longitudinal window cut on Emtelle's 15/9mm RTRYVA. The window cut will allow access to the fiber units within the RTRYVA.

UK_DS_73768
Scan QR code for **Datasheet**

SMALL MICRODUCT ROUNDING TOOL

Small Microduct Rounding Tool used to prepare the microduct correctly.

UK_DS_7949
Scan QR code for **Datasheet**

LARGE MICRODUCT ROUNDING TOOL

Large Microduct Rounding Tool allows you to round any microducts ranging from 14 – 18mm OD after cutting and before adding a connector.

UK_DS_71437
Scan QR code for
Datasheet

DISMANTLING KNIFE

Dismantling Tool used to strip off the outer sheath of a thin walled DB tube bundle.

UK_DS_70935
Scan QR code for
Datasheet

RETRACTABLE KNIFE

Retractable Knife blade for safe operation.

UK_DS_7069
Scan QR code for
Datasheet

SNIPS

Snips used for specific cutting requirements.

UK_DS_9344
Scan QR code for
Datasheet

PLIERS

Pliers with cutter.

UK_DS_7301
Scan QR code for
Datasheet

COMPLETE TOOL BOX

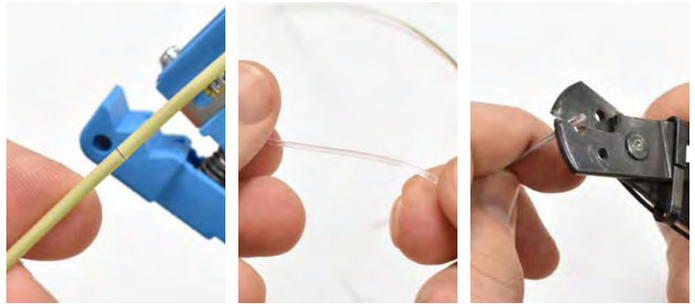
Complete Tool Box contains all the basic FiberFlow tools.

UK_DS_7833
Scan QR code for
Datasheet

The tools shown on the following pages perform best with FiberFast Fiber Unit. For more information about fiber handling instructions please see QR code below for booklet.

Note - *Always test stripping tools on a spare piece of Fiber Unit before using on installed product.*

Fiber Handling Instructions
Scan QR code for
Booklet



FIBERFAST SHEATH STRIPPER

FiberFast Sheath Stripper tool strips buffered fiber up to 2360µm, and jacketed fiber up to 3.5mm quickly and easily.

UK_DS_76132
Scan QR code for
Datasheet

MSAT FIBER STRIPPING TOOL

MSAT Fiber Stripping Tool is a tool that eliminates the struggle of stripping fiber by hand and allows easy access to the fiber beneath the outer jacket.

UK_DS_75345
Scan QR code for
Datasheet

JACKET STRIPPING TOOL

Jacket Stripping Tool is designed to strip the outer sheath from tight jacket Cables/Microcables.

UK_DS_7562
Scan QR code for
Datasheet

FIBER STRIPPER

Fiber Stripper suitable for stripping the outer jacket of Emtelle's 2/4 microcable and aides in the removal of the underlying resin.

UK_DS_9342
Scan QR code for
Datasheet

STRIPPER FIBER 10A

Stripper Fiber 10A is designed to strip 250 micron buffer from primary coated fibers.

UK_DS_7335
Scan QR code for
Datasheet

SHEATH STRIPPER 4.5-40MM

Sheath Stripper 4.5-40mm suitable for making circumference cuts on cable and microducts. The cutting blade is adjustable for depth with a capacity of 4.5 – 40mm.

UK_DS_9728
Scan QR code for
Datasheet

MINICABLE SHEATH STRIPPER

Minicable Sheath Stripper slits the minicable sheath in diametrically opposite locations to expose the individual loose tube elements. The sheath stripper can have either single or double cassettes.

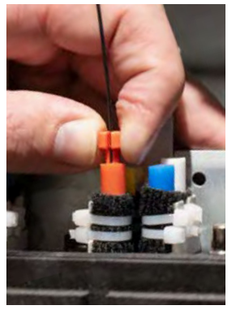
UK_DS_73655
Scan QR code for
Datasheet

HEAVY DUTY KEVLAR SCISSORS

Heavy Duty Kevlar Scissors can be used to cut many products including kevlar strength strands.

UK_DS_7039
Scan QR code for
Datasheet

The tools shown on the following pages perform best with FiberFlow Microducts. Tools to help making blowing easier and als to locate microducts underground.



PUSH-FIT CONNECTOR

Push-fit Connectors are suitable for use with FiberFlow microducts of the same size. Ensuring a seamless and airtight connection when blowing fiber cable at working pressures of up to 15 bar.

UK_DS_SFConn
Scan QR code for
Datasheet

REDUCER

Push-fit Reducers are suitable for use with FiberFlow microducts of different sizes. Ensuring a seamless and airtight connection when blowing fiber cable at working pressures of up to 15 bar.

UK_DS_SFConn
Scan QR code for
Datasheet

END CAP

Push-fit End Caps are used to prevent any debris or contaminants from entering the duct system when installing cable.

UK_DS_SFConn
Scan QR code for
Datasheet

CONNECTORS, END CAPS, REDUCERS

Connectors, End Caps and Reducers are push-fit suitable for use with FiberFlow microduct to ensure a seamless and airtight connection while blowing fiber cable or microcable.

UK_DS_JG Pushfitconn
Scan QR code for **Datasheet**

COMPRESSION CONNECTORS

Compression Connectors are designed to provide a suitable joint and seal between lengths of HDPE duct, for blowing purposes.

UK_DS_ 7891
Scan QR code for **Datasheet**

PROTECTED CONNECTORS

Protected Connectors are clear and rugged / tube lock suitable for use with FiberFlow microduct to ensure a seamless and airtight connection while blowing fiber cable.

UK_DS_70169
Scan QR code for **Datasheet**

EM-MARKER

EM-Marker is a compliant telecommunication underground marker that is placed underground to easily trace key points of infrastructures. Other uses include being used as an end cap or with the EM-Bend.

UK_DS_76465
Scan QR code for **Datasheet**

FIBER & MICROCABLE SEAL

Fiber & Microcable Seal both gas / water block tube end for installation on new and existing infrastructure to prevent gas and water for entering the cable system. Small form factor tubes and cables seals.

UK_DS_71175
Scan QR code for **Datasheet**

DUCT SEALING

Duct Sealing both gas / water block tube end for installation on new and existing infrastructure to prevent gas and water for entering the cable system.

UK_DS_71161
Scan QR code for **Datasheet**

GAS BLOCK CONNECTOR

Gas Block Connector provides an in-line seal between the connector, tube and fiber cable preventing gas and water from entering the cable system and leaking into unwanted areas.

UK_DS_JG GasBlock
Scan QR code for **Datasheet**

CONNECTORS, END CAPS, REDUCERS

Connectors, End Caps and Reducers are push-fit suitable for use with FiberFlow microduct to ensure a seamless and airtight connection while blowing fiber cable or microcable.

UK_DS_9916
Scan QR code for **Datasheet**

ELF

Emtelle Fiber Lock System to eliminate lateral movement of terminated microcables due to vibration or thermal expansion / contraction of the duct system. Design specifically for Emtelle FiberFlow products.

UK_DS_ELF
Scan QR code for **Datasheet**

CABLE CLIP

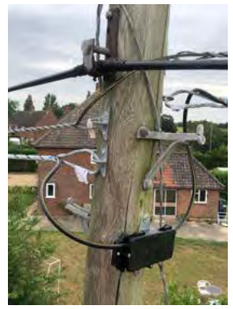
Cable clip is the world's first single component fire rated fixing. There is no need for screws, plugs, or cleats. The clip is simple, strong & easy to install.

UK_DS_Cable_ Clip
Scan QR code for **Datasheet**

See Page 51
for Pre-connectorized Solutions

Emtelle have a large range of accessories that can be installed onto aerial networks for FFTx applications. It is important that the correct cable, closures and accessories are chosen for your network deployment.





TRIANGULAR FITTING CLAMP

Triangular Fitting Clamp has 3-hole anchoring bracket that can be fix onto exterior surfaces by selecting appropriate screws. Used as a termination bracket for customer drop cable clamp.

UK_DS_75362
Scan QR code for
Datasheet

UNIVERSAL POLE BRACKET (UPB)

Universal Pole Bracket has a high mechanical strength aluminium alloy bracket for anchoring various aerial hardware onto all types of infrastructure poles.

UK_DS_9246
Scan QR code for
Datasheet

OVERHEAD RING WITH TOP BOLT

Overhead Ring with Top Bolt is a pole mounted halo style top ring for securing multiple customer drop cable clamps in multiple directions.

MHT2108
Scan QR code for
Datasheet

MINI DROP CLAMP

Drop Cable clamp featuring an all-plastic UV resistant body and toolless design. Used for securing a round aerial drop cables 3-4mm up to 70m spans.

UK_DS_75467
Scan QR code for
Datasheet

GALVANISED HELICAL DROP CLAMP

Galvanised Helical Drop Clamp steel warped -dead end- cable clamp design to warp around aerial cables to tie-off cables onto pole brackets and drop anchoring points.

UK_DS_Helical Dead End Clamp
Scan QR code for
Datasheet

CABLE CLAMP

Cable Clamp suitable for anchoring circular dropwires. Has tapered grip action using jaws that grip the insulation over the dropwire. Use predominantly on figure -8 aerial cables.

MHT2108
Scan QR code for
Datasheet

EXPANDING BOLT 1A

Expanding Bolt 1A is an anchoring point that can be secured into a brick/concrete wall. Used as a termination bracket for customer drop cable clamp.

UK_DS_75117
Scan QR code for
Datasheet

BOLT 16 x 300MM

Bolt 16 x 300mm is a standard bolt set for securing aerial hardware onto poles with through holes greater then 16mm. Suitable for short span aerial hardware.

MHT2108
Scan QR code for
Datasheet

FIBER LOCKING MECHANISM

Fiber Locking Mechanism is used to secure and isolate ULW style cable elements between cable span and splice closure. Evenly spread cable tension over all cable elements.

UK_DS_74523
Scan QR code for
Datasheet

STEEL BANDING

Steel Banding for securing aerial hardware and splice closures onto poles.

MHT2108
Scan QR code for
Datasheet

BUCKLES FOR BANDING (BIB20)

Steel Buckles for securing aerial hardware and splice closures onto poles.

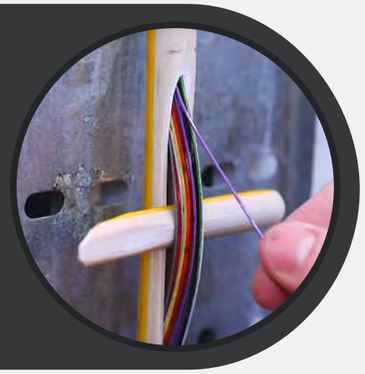
MHT2108
Scan QR code for
Datasheet

EXTENDED DROP CABLE BRACKET

Extended Drop Cable Bracket has 4-holes with extended anchor point for additional clearance of obstructions that can be fixed onto exterior surfaces. Used as a termination bracket for customer drop limited to 40m spans.

UK_DS_74644
Scan QR code for
Datasheet

See Page 43
for Pre-Fibered
Solutions



TENSIONING TOOL BTS

Tensioning Tool for securing aerial hardware and splice closures onto poles.

MHT2108
Scan QR code for
Datasheet

Emtelle's fiber cables are tested at one of our dedicated test tracks and using some of the following accessories can help improve blowing results/performance.

Blowing Brochure
Scan QR code for
Brochure

F.I.G.

Fiber Installation Gun has been designed with the drop fiber installer in mind, the patented F.I.G. is a lightweight, battery-powered compact blowing gun.

UK_DS_74909
Scan QR code for
Datasheet

ACCELAIR 2

AccelAir2 cable blowing machine. Electrical motor with maximum installation speed of 100meters per minute while operating at 15bar pressure.

UK_DS_74773
Scan QR code for
Datasheet

MINIJET

Minijet P400 cable blowing machine. Pneumatic drive motor suitable for installing larger and heavier cable into duct systems via air or water jetting / blown.

UK_DS_70521
Scan QR code for
Datasheet

AIRSTREAM

Airstream cable blowing machine. Electrical drive motor suitable for installing medium sized cable into duct systems. Supports diameters of 5mm to 18mm duct with 2.5mm to 11mm cable.

UK_DS_70899
Scan QR code for
Datasheet

AIR-FLOW METER KIT

Air-Flow Meter Kit with all accessories required to measure the air flow in a microduct system. Adequate air flow is required to ensure a cable can be blown into a duct system.

UK_DS_7778
Scan QR code for
Datasheet

PAN GUIDE

Pan Guide that can be easily attached to a FiberFlow blowing pan. The guide ensures a steady feed of microcables during cable blowing and eliminates snags that can cause damage to the microcables.

UK_DS_7851
Scan QR code for
Datasheet

BALL CHAIN

Ball Chains are recommended by Emtelle for Calibration into Microducts.

UK_DS_Generic Ball Chain
Scan QR code for
Datasheet

CLEANING SPONGES

Cleaning Sponges used to remove foreign objects and clean microducts.

UK_DS_7063
Scan QR code for
Datasheet

BLOWING BEADS

Blowing Beads are fixed to the end of the fiber before blowing starts. It guides the fiber through connectors and around sharp bends.

UK_DS_Blowing Beads
Scan QR code for
Datasheet

INVERSION RING CLAMP

Inversion Ring Clamp is a FiberFlow tool specifically made for FiberFlow blowing pans. This tool secures 2 pans together during a fiber inversion procedure.

UK_DS_7788
Scan QR code for
Datasheet

INVERSION RING

Inversion Ring is a FiberFlow tool specifically made for FiberFlow blowing pans. This tool ensures a seamless connection between 2 pans during a fiber inversion procedure.

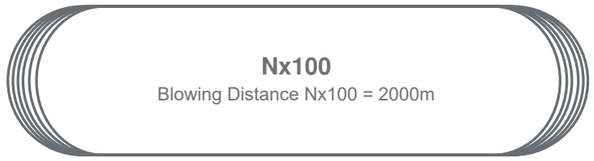
UK_DS_7012
Scan QR code for
Datasheet

LUBRICANT

Lubricant reduces frictional drag during the blowing of small diameter fiber optic minicables into microducts.

UK_DS_70575
Scan QR code for
Datasheet

Nx100 TESTING ROUTE



Nx100 test route criteria

The following will be recorded during the testing procedure

1. Microduct and cable under test
2. Cable OD
3. Microduct OD and ID
4. Microduct internal finish i.e. smooth or ribbed
5. Leg length will be 100m
6. Total route will be 2000m standard
7. Bend radius of the microduct being tested is generally 20 x Radius
8. Lubrication shall / can be used and will be noted in the report
9. Emtelle have a range of blowing machines
10. Emtelle have a range of air compressors available
11. Pushing forces shall be noted continuously
12. Installation speed, distance and time shall be noted continuously

Emtelle Equipment for testing

Available for blowing performance testing

1. Intelijet for cables up to 16mm
2. PR196 for cables up to 8mm
3. CBS Hurricane for cables up to 16mm
4. CBS airstream for cables up to 11mm
5. CBS Accelair2 for cable/fiber unit up to 3mm
6. Condux GS150 for fiber unit up to 2.5mm
7. M17 15bar compressor 1000l/min
8. M31 15bar compressor 2800l/min
9. Last mile 10 bar compressor 270l/min

11 APPLICATIONS

FTTH

In today's ever growing fast-paced, interconnected world, the need for reliable, high-speed broadband internet access is more acute than ever. FTTH solutions from Emtelle have been a key enabler for many large-scale deployments and are ready to meet future challenges as networks evolve.

- **1 million homes passed per year using Emtelle Solutions.**
- **96 maximum home connections in Emtelle RTRYVA pull back system.**
- **99% success rate using Emtelle QWKConnect indoors.**

Datacentres

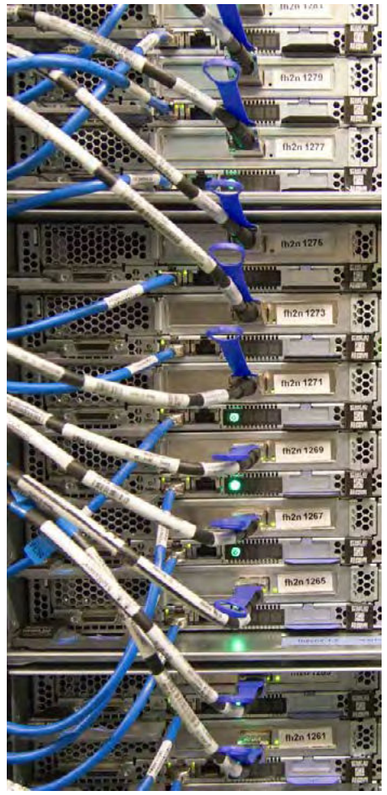
The demand for data transfer and storage has significantly grown over the past few years. Datacentres are designed and developed as mission-critical facilities worldwide. Datacentres can connect consumers and business providers through fiber optic cables via telecommunication broadband connectivity. Emtelle can provide cabling & ducting infrastructure solutions to help you create an IT network that is more agile, more flexible and much simpler to use and manage.

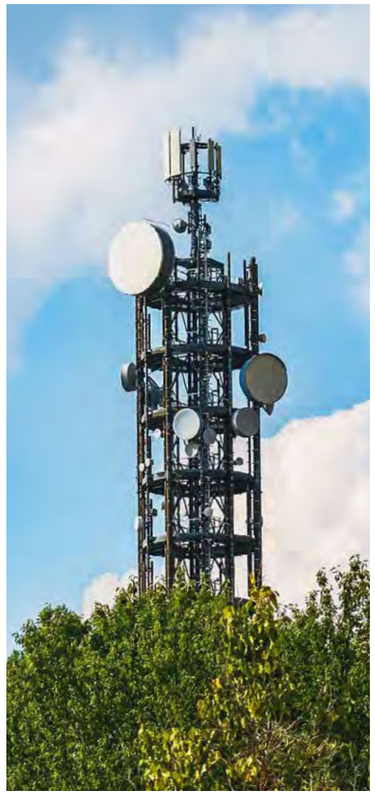
- **3 major global companies have purchased large quantities of Emtelle duct for their datacentres**
- **28 times per year Emtelle have the capacity to wrap fiber around the equator**
- **Innovative Emtelle solutions supplied to 31 out of the 37 OECD countries**

Telecoms

From optical fiber cables to connectivity components, we're helping to link communities and countries faster and more efficiently than ever before. Our broad portfolio of solutions meet the highest communication performance requirements and are flexible and easy to install

- **100% copper switch off is predicted in the UK by 2025**
- **Emtelle have been providing solutions to the Telecoms Industry since 1980**
- **Emtelle supply to 1 or more Internet Service Provider in each European country**





Power

At Emtelle, we have been helping customers deliver innovation and increase efficiency for many years. We can offer you fiber optic and duct solutions for power generation, transmission and distribution.

- **All UK DNOs have purchased innovative solutions from Emtelle**
- **40,000 tonnes of uPVC is processed at our Jedburgh Factory every year**
- **1.2 Gigawatts of offshore renewable wind energy has been connected to the UK grid**

Rail

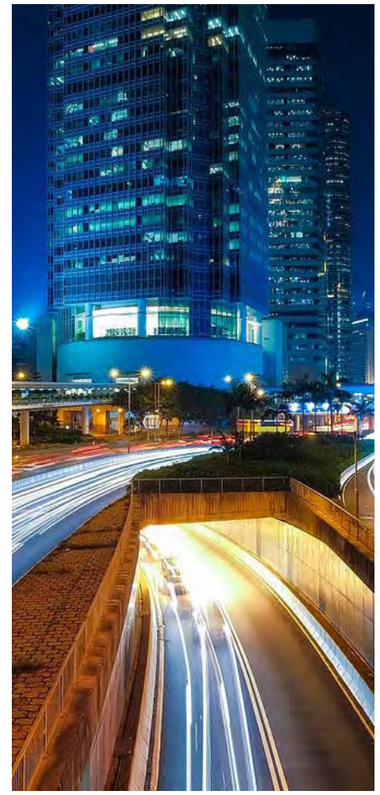
Emtelle has been key in helping enhance many of the existing standards for cables within the railway industry, developing new solutions for increased safety and performance along the way.

- **57 kilometres of cable was supplied by Emtelle for the Gotthard Tunnel, Switzerland**
- **58 kilometres of fiber was manufactured for the Scottish Borders Railway, UK**

5G & IoT

The launch of 5G will bring enhanced capacity and lower latency straight to mobile networks. 5G and FTTH shall be the future of communications, working together to give ultrafast communications to people wherever they live and wherever they are. Communications shall be seamless between work, travel and home. IOT shall also enhance communications and the way we live where sensors and communicative devices shall be used to improve the way we live. For these devices to work effectively, fiber access is required in precise locations which could be any point on nay street or side walk, meaning that you need to be able to dig down to access fiber virtually anywhere. Emtelle's FiberFlow Blown fiber solutions give you this access – FiberFlow can be used for FTTH, 5G, IOT and possibly many more applications in the future.

- **350 thousand kilometres of fiber can be manufactured by Emtelle per year**
- **70.2 million small cells predicted by 2025**



12 INSTALLATION METHODS

HDD

Horizontal Directional Drilling (HDD) is a highly efficient and trenchless installation method for the underground placement of HDPE ducts and Emtelle's FiberFlow microduct bundles.

Directional Drilling is used where open cut installations are not feasible or the option to open trench is not advisable. It has minimal impact on the surrounding area, suitable for a variety of soil conditions and in general only requires two manholes.

- **Minimal disruption to road, river or rail traffic and minimal impact on landscapes**
- **Crossing obstacles such as rivers, highways, railway lines or trees**
- **Distances up tp 500m possible without the need for intermediate pits**

Indoor

Today, requirements for the functionality of facilities and buildings of all kinds – from the detached house to the hospital, from the small production hall to the airport – are becoming increasingly ambitious. Especially in buildings, where many people live and work, fast communication and security aspects are of central importance.

In times of home office and growing multimedia and smart home applications, fiber optic supply is playing an increasingly important role. In all phases and areas of life there is a need for unrestricted high-speed internet access in all living spaces.

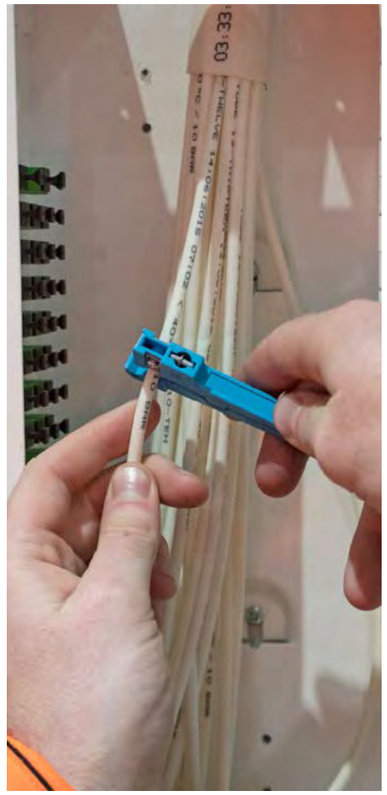
A well-thought-out usage concept for attractive residential properties includes future-oriented and sustainable indoor cabling - whether it is a new building or a renovation project. Installation of fiber optic cables in the apartment not only increases the value of a property massively, but also the quality of life.

- **Route Indoor products from the basement to the apartments or office blocks and simply break out fiber quickly and cost-effectively when the customer demands it.**
- **Having the fiber distribution point installed into a building means that equipment is no longer at risk of being damaged by harsh weather, negligence or vandalism.**
- **Future-orientated Indoor concept and dedicated fiber to each apartment or desk increases the value of a building massively.**

Microtrenching

The Micro Trench technique requires a small compact machine to microtrench pavements, carriageways, driveways and gardens so that a single microduct solution can be branched off from the main microduct route directly to the customer. Multiple microducts or microduct bundles solutions can be buried into a microtrench depending on how deep and wide the slot cut is made.

- **Extremely fast to deploy- up to 5 times faster than traditional ducted methods**
- **It is substantially lower cost- generally less than half the cost of traditional methods**
- **There is minimal disruption resulting in continued traffic flow**



Moleploughing

The Moleplough technique typically involves specialist machines to plough a slot directly into the ground and lay the microduct or subduct into the slot immediately, in one continuous operation. Ideally this method is suited to grass verges and soft ground.

- **Save money on traffic management and disruption**
- **Significantly faster to deploy than traditional trenching**
- **Reduced manpower, one machine can plough and install the microduct or subduct at the same time**

Open Trench

Open Trenching involves excavating down to a given depth, placing the microducts in a suitably prepared trench, for example, sand/pea gravel for protection, then re-instating.

- **Proven traditional method**
- **Control over the reinstatement**
- **Once the open trench is backfilled the roads and footpaths are reinstated as per before work started**

Overhead

Overhead installation is a technique proven to hold a blown fiber network system on telegraph poles, building façade. Aerial installation is generally less obstructive and a more convenient way to carry broadband connectivity.

- **Ease of maintenance and repair**
- **Overhead installation is a viable solution for no dig/difficult terrain environments**
- **Fiber optic cables installed above ground have an excellent reputation for security and reliability**

13 TRAINING

We offer the following courses:

- **FiberFlow Installation and Maintenance**
- **Design and Engineering of FiberFlow Network**
- **Mini Cable Installation and Maintenance**
- **Aerial Installation Training**
- **Train the Trainer for Instructors**
- **Supervisor Training**

Emtelle compiles and develops its courses to suit our customers' needs. We have deployed air blown fiber all over the world, so you can be sure of our expertise. Training can be provided at Emtelle offices or at the customer's office*. In addition, Emtelle works with external training partners. Experts at these companies can provide high-quality instruction for technicians wishing to gain proficiency in Emtelle's air blown fiber technology and products. Emtelle also provides two greatly respected courses, Installation & Maintenance and Design & Engineering. Completion of these courses can lead to Registered Communications Distribution Designer (RCDD) accreditation by BICSI, a global non-for-profit organisation committed to the advancement of Information Transport Systems. Emtelle's air blown fiber courses are the only ones of their kind that lead to BICSI re(qualification).

*subject to availability and minimum number.

Features

Learn the latest Fiber-To-The-Home (FTTH developments and what makes FTTH so important for delivering high-speed communication to customers.

Courses are limited to small numbers–six for all prac-tical courses–so when we say it is a hands-on course, we mean YOUR hands on!

You will receive a comprehensive, easy-to-follow course manual with clear diagrams and photographs, many of actual installations. If you are interested in the Design course, we will show you many examples of prestig-ious installations, such as the biggest FttH deployment in the world so far in Nuenen the Netherlands, the Sky Tower in New Zealand, Perth Metro ring, Sydney Harbour Bridge, Mexico Municipality, Zurich Airport, Woodlands (intelligent neighbourhood) Estate in South Africa, Reserve Bank of South Africa in Pretoria, and the award-winning innovation project for the Ministry of Defence type 45 destroyer.

We use up-to-date training technology. Our courses are presented using multimedia projectors and we include actual products, when needed, to enhance core con-cepts and understanding.

On our Installation and Maintenance course, you will use a range of equipment and materials that you will see in the field.

Installation and Maintenance

Tube bundles – different types of tube bundles and identification of primary tubes

Handling, deploying and testing of the tube bundles

Health and safety procedures

Tube connectors and jointing enclosures

Fiber bundles stripping and handling techniques

Blowing equipment and operation

Blowing techniques including point-to-point blows, cen-tre blowing and onward blowing

Maintenance of the blowing equipment and changing blowing head to accommodate different fiber sizes

Choosing maximum blowing distances for certain tube and fiber combinations

Installation of Emtelle approved closures

Design and Engineering

Appreciate the key components and products used in an air blown fiber network

Learn the importance of product bend radius

Learn what effect water and ice have on the individual products and the air blown fiber system

Appreciate how blowing distance is determined

Learn about the various closure types and where they are used in the network

Learn what components are needed to connect a customer

Understand the importance of manhole selection

Learn about the strengths of Emtelle's portfolio consist-ing of Tube Bundles, Fiber Products, Accessories and Blowing Equipment

Learn about the various deployment techniques

Learn how to extend the blowing distance and the equipment needed

Learn how to plan for a repair

Work through detailed planning examples of actual deployments

Mini Cable Installation

Handle, deploy and test tube bundles

Prepare different tube bundles and identification of primary tubes

Apply health and safety procedures

Understand the importance of tensile and thermal tube assembly relaxation

Use tube connectors and jointing enclosures

Operate blowing equipment, including the fleeting machine

Understand and apply blowing techniques including point-to- point blows, centre blowing and series blowing

Maintain the blowing equipment and change out blow-ing head parts to accommodate different mini cable sizes

Aerial Installation Training

Provide suitable aerial installation training and assessment for blown fiber installation engineers. The course will cover the following topics;

Health and Safety as it relates to working at height and in and around Vaults

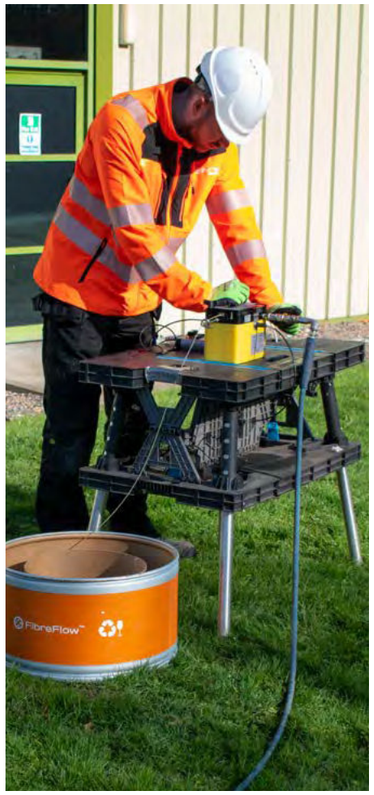
Handling, Deploying and Installing of aerial tight protect-ed microduct products

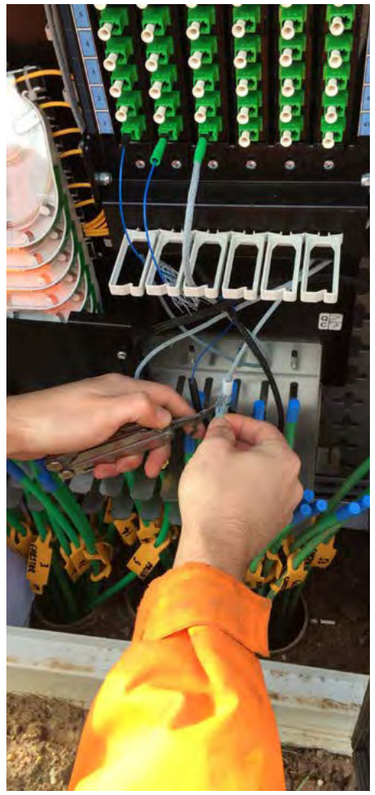
Stripping of aerial tight protected microduct products

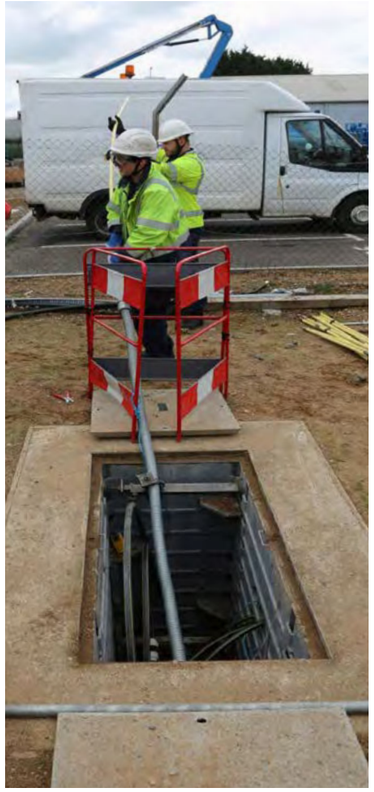
Installation of closures both aerial and Customer Lead In Points

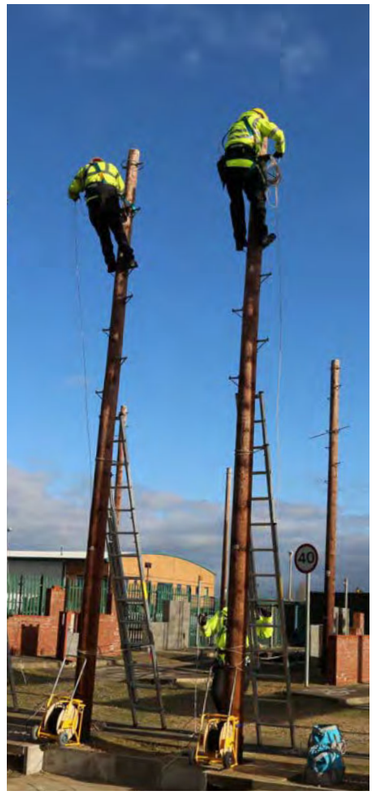
Installation of Mid Blow closures

Operation of Blowing equipment for point to point and mid blow operations









14 STORAGE & HANDLING

FiberFlow Tube Bundles - Temperature & Storage

The tube bundles and packaging materials are resistant to a wide temperature range. Packaging materials are provided to protect products prior to installation. Emtelle stipulate that the packaging supplied should remain in place until the product is installed. If packaging needs to be replaced, please contact Emtelle for details of suitable materials for re-packaging. Prolonged storage outdoors may reduce the performance of the tube bundles.

If the client requires products to be stored for periods of over 3 months prior to installation, it is a requirement that they inform Emtelle so that product and packaging specifications can be amended.

Tube Assembly Storage & Handling / Installation

Poly Ethylene (PE) products, e.g. Direct Install (DI), Direct Bury (DB), Direct Bury Reinforced (DBR) are best stored between -40°C and +60°C (Product temperature, not air temperature), and handled between -20°C and +40°C. If stored outdoors, we recommend they are stored out of direct sunlight, and installed within 3 months of delivery.

In some countries storage in direct sunlight, can cause the temperature of the products to increase to over +60°C. This will invalidate the product warranty. Individual Microducts, both Poly Ethylene (PE) and Low Fire Hazard (LFH) should be stored indoors. These products are wrapped in black film and bubble wrap after manufacture. This protective packaging should remain in place until installation. Individual microducts should not be exposed to direct sunlight.

LFH products can be stored between -20°C and +60°C and handled for installation between 0°C and+40°C. Handling/installation outside this temperature range can result in tube softening, distorting and possibly cracking. Please note that the maximum air pressure used when fiber bundle blowing in LFH products is 10 bar / 150psi with a maximum tube temperature of +40°C.

Temperature Variation

As stated above, Emtelle tube bundles can be stored in a temperature window of -40°C and +60°C. Though the tube bundles can accommodate these temperatures, however in some countries the product temperature between day time and night time can vary by 40°C or more. In these circumstances, the outer coils of the tube bundle on the drum will experience high levels of thermal expansion and contraction. This extreme temperature cycling can cause product failure or deterioration in performance. If this type of temperature cycling cannot be avoided then Emtelle should be informed so that they can provide advice and options for safe storage of the product.

Tube Assemblies In Operation

Once the tubing assemblies are in their fixed operational location, they can be subject to the ‘storage’ temperatures quoted above, provided that there is no significant continuous flexing of the tube assemblies. Most installations are laid in underground ducts and so see minimal variation in position or temperature. Minimum temperatures of -40°C are permissible after installation.

Assemblies located in outdoor (e.g. overhead) routes will experience temperature cycling and expand and contract with the weather and there will be considerable continuous flexing of the tube assemblies. Consult Emtelle for advice on the correct product to use in this situation. Products intended for underground installation e.g. direct burial or direct install products which are installed above ground, (i.e., up walls) should be covered with a suitable UV protective material to eliminate the risk of UV degradation.

Handling Product And Off-Loading

Our products are loaded into containers using Rhino horns or forklifts with extendable arms. A normal forklift or tractor with attachments can be used if care is taken. Please carry out risk assessments and ensure you have effective lifting equipment ready for the unloading of trucks or containers.(as shown below)

Offloading - Please Note

Do not off-load near overhead power lines.

Ensure a safe location for off-loading – flat, firm, level ground, free from obstacles and obstructions.

Only authorized personnel should be in the vicinity during off-loading operations.

It is the responsibility of the driver of the off-loading vehicle to ensure all personnel are kept at a safe distance whilst off-loading.

Pallets, drums or loose lengths should not be dropped or thrown from the vehicle.

Duct in coil form contains a great deal of stored energy and should be handled with care. Particular care should also be taken to avoid any damage to the restraining straps.

In wet and frosty conditions duct and drums can become very slippery; therefore care is required when operating in these conditions.

There must be provision made when storing products externally that they are adequately handled with the use of forklifts and drum handling equipment. All drums should be secured in position using adequate fixings. Drums should be stacked no more than 3 metres high.

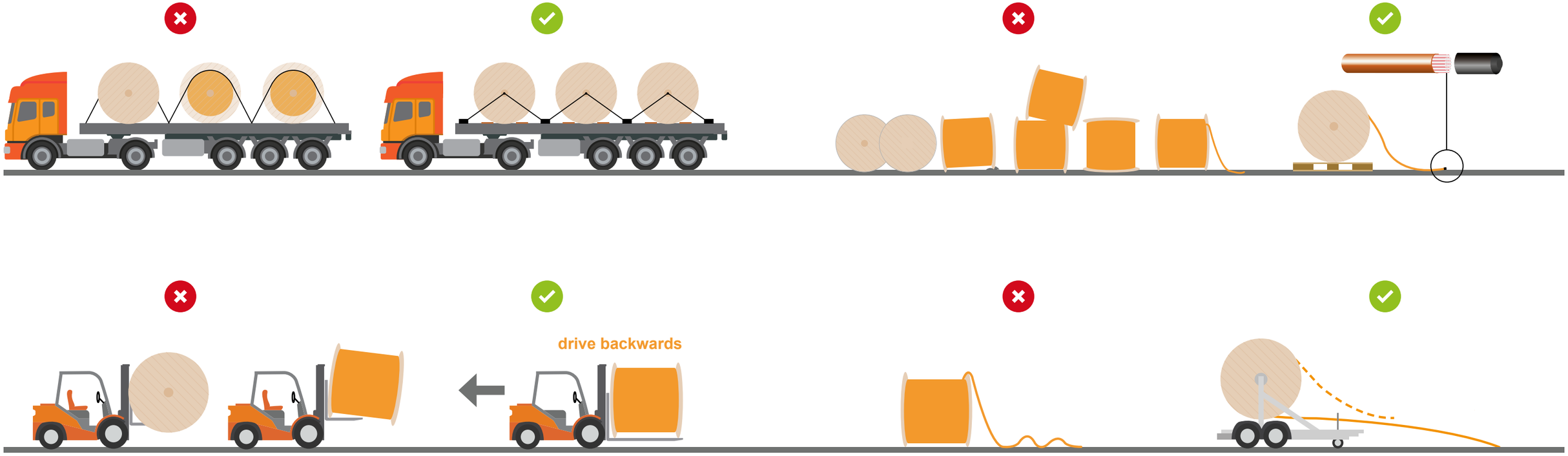
Tube bundles which are being batched down at the custom-er’s premises should be rewound using a power pay-off. All free ends of tube bundles should be sealed using heat shrink end caps. These are available from Emtelle if required.

While every care is taken during loading, Emtelle cannot accept responsibility for the security of the load once it leaves our site. Drivers must secure their loads before leaving the factory, as under the terms of the Road Haulage Association they are responsible for the security of the load.

The drums must be stored on a level, hard surface above flood level and must be secured with chocks to prevent the drums from rolling away. Avoid contact with sharp rocks. Do not lay the drums flat, the drums must be stored as pictured below.

Unspooling The Tube Bundles

The tubes and tube bundles supplied by Emtelle are supplied in coils or on drums. When uncoiling the products, the drums should be slowed to freely rotate (preferably using a drum trailer as shown below), so the products is unwound without any excess coiling. Never lay the drum or coil on its side and pull the tube bundles ‘off the top’, as this will induce a corkscrew twist (as shown in the photographs below), possible distortion and cause problems during installation and blowing.



15 TERMS & CONDITIONS OF SALE OF GOODS - USA

1. Interpretation

1.1 in these terms and conditions the following words have the following meanings:

"Buyer"

The person(s) or company whose order for the Goods is accepted by the Company;

"Company"

Emtelle USA Inc., a Delaware corporation;

"Contract"

Any contract between the Company and the Buyer for the sale and purchase of the Goods;

"Goods"

Any goods which the Company is to supply to the Buyer (including any of them or any part of them);

"Force Majeure"

All causes beyond the reasonable control of a party to this Agreement including, without limitation, acts of god, war, fire, industrial disputes, flood, tempest, national emergencies and the difficulty in obtaining materials except at unreasonably enhanced prices due to any of the foregoing reasons;

"Intellectual Property Rights"

Patents, trademarks, service marks, copyright, design rights and moral rights, whether registered or unregistered, together with any or all goodwill relating or attached thereto;

1.2 The headings in these terms and conditions are for convenience only and shall not affect their interpretation.

2. Formation And Incorporation

2.1 Subject to any variation under Section 2.4, the Contract will be on these terms and conditions set out below to the exclusion of all other terms and conditions (including any terms or conditions which the Buyer purports to apply under any purchase order, confirmation of order or similar document.)

2.2 Each order for Goods by the Buyer from the Company shall be deemed to be an offer by the Buyer to purchase Goods subject to these terms and conditions.

2.3 No terms or conditions endorsed upon, delivered with or contained in the Buyer's purchase order, specification or similar document will form part of this Contract simply as a result of a reference to such document being referred to in this Contract.

2.4 Any variation to these terms and conditions and any representations about the Goods shall have no effect unless expressly agreed in writing and signed by an authorized signatory of the Company.

2.5 Acceptance of delivery of the Goods shall be deemed to be conclusive evidence of the Buyer's acceptance of these terms and conditions.

2.6 The Buyer must ensure that the terms of its order and any applicable specification are complete and accurate.

2.7 Any quotation is given on the basis that no contract will come into existence until the Company despatches an acknowledgment of order to the Buyer. Any quotation is valid for a period of 30 days from its date provided the Company has not previously withdrawn it.

2.8 The Company accepts orders subject to the absolute right to cancel and rescind contracts in cases where the Buyer or the terms stated are not acceptable to the Company's insurers or, where applicable, to any other governmental or other body guaranteeing overseas contracts.

3. Description

3.1 The description of the Goods shall be as set out in the Company's quotation.

3.2 All drawings, descriptive matter, specifications and advertising issued by the Company or the manufacturer of the Goods and any descriptions or illustrations contained in the Company's or manufacturer's catalogs or brochures are issued or published for the sole purpose of giving an approximate idea of the Goods described in them. They will not form part of the Contract.

3.3 The Company may make any changes to the specification, design, materials or finishes of the Goods which are required to conform with any applicable safety or other statutory requirements.

4. Delivery

4.1 If the quoted price does not provide for shipment of the Goods, delivery will take place at the Company's place of business.

4.2 The Buyer will take delivery of the Goods within 7 days of the Company giving it notice that the Goods are ready for delivery.

4.3 If the quoted price provides for shipment of the Goods, delivery will be deemed to take place at the point of entry to the Buyer's works or site specified in the Contract and the Goods shall be delivered by such means as the Company thinks fit unless the Buyer has specified in its order the details of the contract with a carrier which it reasonably requires, having regard to the nature of the Goods and the other circumstances of the case.

4.4 The carrier shall be deemed to be the Buyer's agent except for the purposes of Section 2-705 of the Uniform Commercial Code.

4.5 Delivery of the Goods shall be accepted at any time of day.

4.6 Any dates specified by the Company for delivery of the Goods are approximate only and may not be made of the essence by notice. If no dates are so specified, delivery will be within a reasonable time.

4.7 Subject to the other provisions of these terms and conditions the Company will not be liable for any loss (including loss of profit), costs, damages, charges or expenses arising directly or indirectly out of delay or failure to deliver the Goods (even if caused by the Company's negligence).

4.8 The Buyer must accept delivery of the Goods and pay for them in full unless the Buyer provides written notice to the Company requesting delivery of the Goods and shall not have received such Goods within four weeks thereafter, in which event the Buyer may cancel the applicable Contract to the extent it relates to the Goods which were subject to such delivery without further liability for the Goods.

4.9 For orders of less than $1000, the Company reserves the right to charge the Buyer the shipping rate that is charged to the Company by the carrier for the delivery of the Goods.

4.10 The Buyer will be responsible for loading and offloading the Goods and will, unless otherwise agreed, provide at its expense at the delivery point adequate and appropriate equipment and manual labor for off-loading or loading the Goods.

4.11 The Company may deliver to the Buyer Goods up to 5% more or 5% less than the quantity ordered. The Buyer shall accept delivery of Goods within such limits without objection but invoices shall be adjusted to actual quantities.**4.12** The Company may deliver to the Buyer Goods up to 5% more or 5% less than the quantity ordered. The Buyer shall accept delivery of Goods within such limits without objection but invoices shall be adjusted to actual quantities.

4.12 Where the quoted price includes the cost of shipment of the Goods, the Company will not be liable for any losses or damage in transit of any kind unless notice of such loss or damage is given to the carriers and to the Company:

4.121 in the case of extrusions at the time of delivery, by endorsement on the delivery documentation;

4.122 in all other cases by written notification to the Company within 3 days of delivery and by endorsement on the delivery documentation.

5. Non-Delivery

5.1 The quantity of any consignment of Goods as recorded by the Company upon despatch from the Company's place of business shall be conclusive evidence of the quantity received by the Buyer on delivery unless the Buyer can provide conclusive evidence proving the contrary.

5.2 The Company shall not be liable for any non-delivery of Goods (even if caused by the Company's negligence) unless the Buyer provides written notice to the carrier and the Company within 3 days of the date when the Goods would in the ordinary course of events have been received.

5.3 The aggregate liability of the Company for the non-delivery of any one order of Goods shall be limited to replacing the Goods for that order within a reasonable time, or issuing a credit note at the pro rata contract rate against any invoice raised for such Goods.

6. Packing

All pallets and returnable packaging and containers will remain the property of the Company at all times. It is the Buyer's responsibility to return all packing and containers to the Company. In the event such packaging materials and containers are not returned in a good and serviceable condition within the period specified in the Company's quotation with shipping paid, the Buyer will be charged in full for the loss of such packaging materials and containers.

7. Storage

7.1 If the Buyer fails to take delivery of any of the Goods when they are ready for delivery or to provide any instructions, documents, licences or authorizations required to enable the Goods to be delivered on time (except because of the Company's fault) any and all risk or liability in the Goods will pass to the Buyer (including, without limitation, for any loss or damages caused by or relating to the Company's negligence), the Goods will be deemed to have been delivered, and (without prejudice to its other rights) the Company may:

7.1.1 store or arrange for the storage of the Goods until actual delivery or sale and charge the Buyer for all related costs and expenses (including, without limitation, storage and insurance); and/or

7.1.2 following written notice to the Buyer sell any of the Goods at the best price reasonably obtainable in the circumstances to a third party buyer, and charge the Buyer for any price differential between the price in the Contract and the price of the Goods sold to such third party as a result thereof.

7.2 The Company is not responsible for demurrage charges or additional costs resulting from delay in unloading.

8. Risk/Ownership

8.1 Risk of damage to or loss of Goods shall pass to the Buyer upon delivery.

8.2 Notwithstanding delivery and the passing of risk, and solely for the purposes of securing payment of all monies due or to become due to the Company by the Buyer on any account, ownership of the Goods shall not pass to the Buyer until the Company has received in full (in cash or cleared funds) all sums due to it in respect of:

8.2.1 the Goods; and

8.2.2 all other sums which are or which become due to the Company from the Buyer on any account.

8.3 Until ownership of the Goods has passed to the Buyer, the Buyer will:

8.3.1 hold the Goods on a fiduciary basis as the Company's bailee;

8.3.2 store the Goods (at no cost to the Company) separately from all other goods of the Buyer or any third party in such a way that they remain readily identifiable as the Company's property;

8.4 In the event the Goods are not paid for in full, the Company shall be entitled to retake possession of any Goods, and the Company is authorized to enter into any premises of the Buyer or any third party where the Goods are or may be stored and repossess the Goods.

8.5 The Company may in respect of all unpaid debts due from the Buyer under this or any other contract have a general lien on all Goods and property of the Buyer in the Company's possession (although such Goods or some of them may have been paid for) and shall after the expiration of twenty eight (28) days written notice to the Buyer be entitled to dispose of such Goods and property as it deems fit and apply the proceeds towards such debts, and remaining sums shall be held on trust.

9. Price And Payment

9.1 The price for the Goods shall be the Company's quoted price and shall be binding upon the Company only if the Buyer accepts the Company's quotation within thirty (30) days of Buyer's receipt of the Company's quotation. If Buyer has not accepted the Company's quotation within such thirty (30) day period, the quoted price may be altered by the Company without further notice to the Buyer.

9.2 The Company may increase the price of the Goods to reflect any increase in the cost of manufacture or distribution of the Goods which is due to any factor beyond the reasonable control of the Company; this includes (without limitation) foreign exchange fluctuation, currency regulation, alteration of duties and taxes, increase in cost of labor, materials and other manufacturing costs and transport costs, changes in rates of insurance, alterations in duties or import variations, or by reason or any cause beyond the control of the Company.

9.3 Unless otherwise agreed to between the parties, the price for the Goods is exclusive of any applicable taxes, which the Buyer shall pay in addition to the quoted price for the delivery of the Goods.

9.4 All payments shall be made to the Company in the United States in the currency stipulated in the Company's quotation to the Buyer.

9.5 Unless otherwise stated, payment terms are "net monthly account", which is to be interpreted as "payment to be made before the end of the calendar month following the calendar month during which the Goods were invoiced". Time of payment shall be of the essence. No payment shall be deemed to have been received until the Company has received cleared funds.

9.6 If the Buyer's account is overdue for payment, the Company reserves the right to withhold or suspend deliveries under this Contract or any other Contract with the same Buyer or the Buyer's affiliates. Any such withholding or suspension shall not give rise to any claim or liability whatsoever against the Company and shall be without prejudice to the Company's right to recover any amount due from the Buyer and any other rights the Company may exercise pursuant to these terms.

9.7 If the Buyer's account is overdue for payment, the Company reserves the right to charge interest at 4% per annum plus the Wall Street Journal Prime Rate for the time being in force on the amount overdue.

9.8 The right of the Buyer to set off the value of any shortage, defective Goods or Goods not otherwise conforming to the Contract shall be restricted to the specific invoice for the Goods in question and shall not apply to previous or future accounts.

10. Warranty

10.1 In the event of any Goods supplied by the Company and not being of its own manufacture being proved to be defective or failing in service, the Buyer shall be entitled only to, and limited to, such restitution as the Company actually receives from the manufacturer and/or supplier to the Company.

10.2 The Company warrants that (subject to the other provisions of these terms and conditions) upon delivery the Goods are, and for a period of 12 months from the date of delivery will be, of satisfactory quality and are fit for the commercial purpose for which they have been designed.

10.3 The Company shall not be liable for a breach of the warranty set forth in Section 10.2 unless:

10.3.1 the Buyer gives written notice of the defect to the Company and, if the defect is as a result of damage in transit, to the carrier within 14 days of:

10.3.1.1 the date of delivery (where the defect would be apparent to the Buyer upon a reasonable inspection); or

10.3.1.2 the date when the Buyer knew or should have reasonably known of the defect (where the defect would not be apparent to the Buyer upon a reasonable inspection); and

10.3.2 upon receiving notice from the Buyer regarding an alleged breach of warranty, the Company is provided a reasonable opportunity to inspect and examine the Goods, and the Buyer (if asked to do so by the Company) returns such Goods to the Company for an examination to occur on the Company's premises.

10.4 The Company shall not be liable for a breach of the warranty set forth in Section 10.2 if:

10.4.1 the defect arises or relates to the Buyer's failure to follow the Company's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Goods, or if there are no such instructions, commercial industry and trade practice. The Buyer should carry out any and all tests specified in the Emtelle US installation instructions for the Goods before and after installation as detailed in MHT2570. The latest version of these installation instructions can be found at www.emtelle.com or can be requested by e-mail from info@emtelle.com; or

10.4.2 the Buyer alters, repairs or performs maintenance on such Goods for any purpose whatsoever without the written consent of the Company; or

10.4.3 the defect in such Goods arises from any design defect in any drawing, design or specification supplied or approved by the Buyer.

10.5 In the event Buyer states a valid claim for breach of warranty, the Company shall at its option repair or supply replacement Goods (or the defective parts, if applicable) or refund the price of such Goods at the pro-rata contract rate.

10.6 Except for the warranty set forth in Section 10.2, the Company hereby disclaims all warranties, express, implied, statutory or otherwise, and specifically disclaims all implied warranties of merchantability, fitness for a particular purpose, title and non-infringement. The remedy set forth in Section 10.5 shall be the Buyer's sole and exclusive remedy and the Company's entire liability for any breach of warranty.

10.7 Any defective Goods will belong to the Company and any Goods which are repaired or which are re-supplied will be warranted on these terms and conditions for the unexpired portion of the 12 month period.

11. Limitation Of Liability

11.1 The following provisions in this Section 11 set out the entire liability of the Company (including any liability for the acts or omissions of its employees, agents and subcontractors) to the Buyer in respect of:

11.1.1 any breach of these terms and conditions; and

11.1.2 any representation, statement or tortious act or omission including negligence arising under or in connection with the Contract;

11.2 Nothing in these terms and conditions excludes or limits the liability of the Company for death or personal injury caused by the Company's willful misconduct or fraudulent misrepresentation.

THE BUYER'S ATTENTION IS PARTICULARLY DRAWN TO THE PROVISIONS OF SECTIONS 11.3 AND 12.2

11.3 Subject to Section 11.2:

11.3.1 notwithstanding the provisions of any other terms and conditions herein, the Company's aggregate liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the performance or contemplated performance of this contract shall be limited in amount to the amount of the price of the Goods. The parties agree that this condition is reasonable and that the contract price is based on the level, exclusions and limits of liability in this condition.

11.3.2 the Company shall not be liable to the Buyer for:

(I) loss of profit; or

(II) loss of business; or

(III) business interruption; or

(IV) depletion of goodwill and/or similar losses; or

(V) loss of anticipated savings;

in each case whether direct, indirect or consequential, or for any claims for consequential compensation whatsoever (howsoever caused) which arise out of or in connection with this Contract, in each of the above cases whether or not caused by the negligence of the Company, its employees, agents or sub-contractors.

12. Indemnification

12.1 The Buyer will indemnify, defend and hold harmless the Company and its affiliates, and their respective directors, officers, employees, agents, representatives and their successors and assigns and hold them harmless from and against any and all losses, liabilities, claims, causes of action, costs and expenses (including reasonable attorneys' fees and related legal expenses) caused by or relating to the Buyer's failure to provide appropriate equipment and manual labor for off-loading or loading (whether or not the off-loading or loading is supervised by or on behalf of the Buyer) for:

12.1.1 any personal injury to or death of any of the Company's employees, agents or sub-contractors or any third party; and

12.1.2 any damage to or loss of any property of the Company, its employees, agents or sub-contractors or any third party.

12.2 The Buyer will indemnify, defend and hold harmless the Company and its affiliates, and their respective directors, officers, employees, agents, representatives and their successors and assigns, and hold them harmless from and against all liability, actions, proceedings, costs, claims, damages or demands in any way connected with these terms or any Contract brought or threatened to be brought against the Company by any third party, except to the extent the Company is liable to the Buyer in accordance with these terms and conditions.

12.3 The Buyer will indemnify, defend and hold harmless the Company and its affiliates, and their respective directors, officers, employees, agents, representatives and their successors and assigns, and hold them harmless from and against all damages, penalties, costs and expenses to which the Company may become liable through any work done in accordance with specifications, drawings or special requirements of the Buyer which may involve an infringement or alleged infringement of any Intellectual Property Rights of a third party or may cause any actionable damage or loss to any third party.

13. Performance of Contract

13.1 The Company may deliver the Goods by installments, and each installment shall be deemed to be sold under a separate contract. No failure of or delay in delivery of any installment nor any defect in the contents thereof shall entitle the Buyer to treat the contract as repudiated with regard to any remaining installments.

13.2 If subsequent to any contract of sale which is subject to these conditions, the Company and the Buyer enter into a separate contract without express reference to these conditions, these conditions shall be deemed to be incorporated in full into such separate or additional contract of sale.

14. Technical Advice & Information

14.1 The Company may at the request of the Buyer, without being under any obligation to do so, furnish technical advice concerning the use of the Goods and such assistance will be given to the best of the Company's ability but this shall be on the express understanding that any such advice or assistance is given and accepted at the Buyer's risk and the Company shall not be liable for any loss, damage or claims arising therefrom.

14.2 The Company shall not incur any liability whatsoever in connection with work carried out or any materials supplied which is derived from or related to the Buyer's own drawings, designs or specifications.

14.3 The submission of a quotation or acceptance of an order by the Company in no way implies any responsibility on its part for any additional authorizations or regulatory approvals which may be required by the Buyer.

15. Force Majeure

Deliveries may be partially or totally suspended by either party during any period in which it is prevented from manufacturing, delivering or taking delivery of the Goods through any event of Force Majeure and if such party notifies the existence of such Force Majeure to the other party in writing. If, because of such Force Majeure, the Company is unable to supply the total requirement of the Goods the Company may allocate its available supply among all of its customers, including those not under contract, as the Company thinks fit. Deliveries so suspended for three months may thereafter during such suspension be cancelled without liability but the Contract between the parties shall otherwise remain unaffected.

16. Intellectual Property

16.1 Buyer and Company acknowledge and agree that Company owns and will retain all Intellectual Property Rights relating to the Goods. Buyer shall not at any time attack, either directly or indirectly, the title, validity, or any of Company's rights in and to the Intellectual Property Rights. Nothing in this Contract shall be construed as conveying or transferring ownership or title of any Intellectual Property Rights.

16.2 Buyer shall inform Company promptly in writing of any alleged infringement of the Intellectual Property Rights by a third-party and of any available evidence thereof.

16.3 Buyer shall not directly or indirectly, in any form or manner, reverse engineer or otherwise disassemble the Goods.

16.4 No representation warranty or indemnity is given by the Company that the Goods do not infringe any Intellectual Property Rights of a third party. Section 12.3 of this Contract governs Buyer's indemnification obligations in relation to Intellectual Property Rights.

17. Termination

17.1 The Contract will terminate immediately upon service of a written notice of termination by the Company to the Buyer on the happening or occurrence of any one or more of the following events; (i) the Buyer breaches any of the provisions set forth in these terms and conditions or under the Contract; or (ii) any insolvency, bankruptcy or similar proceedings are commenced by or against the Buyer, including any assignment by Buyer for the benefit of creditors.

17.2 The Company's rights contained in Section 8 (but not the Buyer's rights) shall continue beyond the discharge of the Buyer's and the Company's primary obligations under the Contract following its termination.

17.3 The termination of the Contract howsoever arising shall be without prejudice to the rights and duties of either the Buyer or the Company which have accrued prior to termination.

18. General

18.1 Time for performance of all obligations of the Buyer is of the essence.

18.2 Each right or remedy of the Company under this Contract is without prejudice to any other right or remedy of the Company whether under this Contract or not.

18.3 Any provision of this Contract which is held by a competent authority to be invalid, void, voidable, unenforceable or unreasonable (in whole or in part) shall to the extent of such invalidity, voidness, voidability, unenforceability or unreasonableness be deemed severable and the other provisions of this Contract and the remainder of such provision shall not be affected.

18.4 Failure by the Company to enforce or partially enforce any provision of this contract will not be construed as a waiver of any of its rights under this Contract.

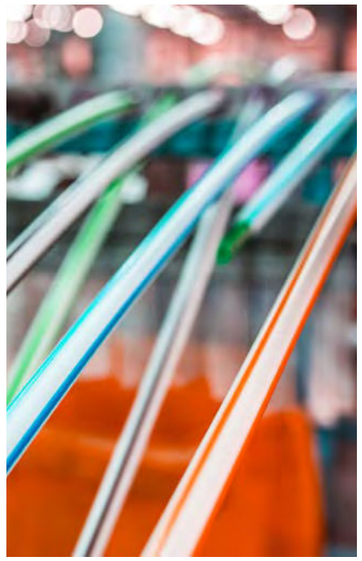
18.5 The Company may assign, license or sub-contract all or any part of its rights or obligations under this contract without the Buyer's consent.

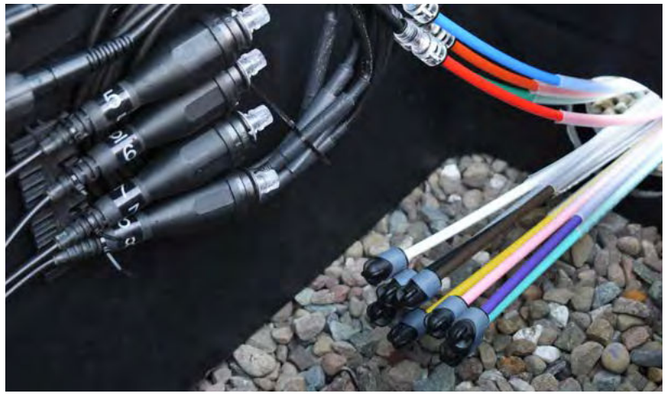
18.6 This Contract is personal to the Buyer who may not assign, license or subcontract all or any of its rights or obligations under this Contract without the Company's prior written consent.

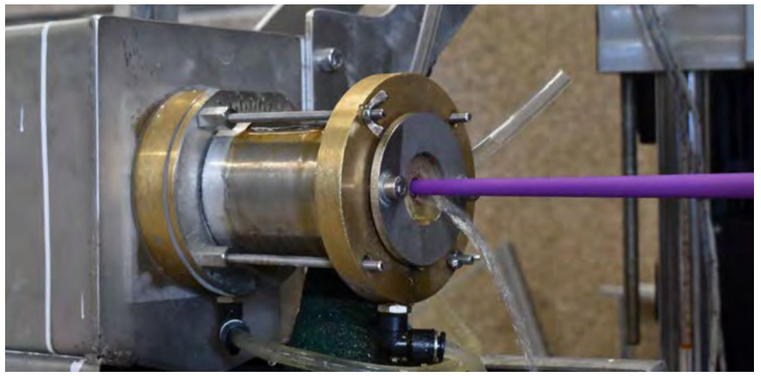
18.7 Any notice required or permitted to be given by either party to the other under these conditions shall be in writing addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice.

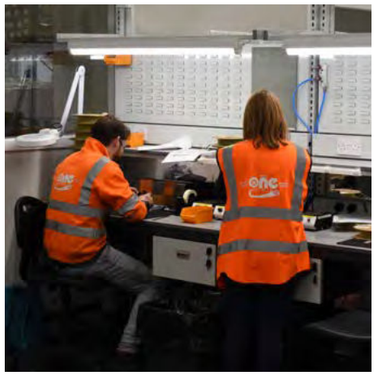
18.8 The formation, construction, performance, validity and all aspects of this Contract are governed by the laws of the State of Delaware and the Uniform Commercial Code. The parties submit to the exclusive jurisdiction of the State of Delaware or such other location as the Company and the Buyer may agree upon.

For other countries T&C's please Scan QR code









EMTELLE

Emtelle USA
101 Mills Gap Rd
Unit A, Fletcher
NC 28732
USA
+1 (828) 7079970
info@emtelle.com

Emtelle Group
Allan House, Floor 4
25 Bothwell Street
Glasgow, G2 6NL
United Kingdom
+44 (0) 1450 364 000
info@emtelle.com

Emtelle UK
Haughhead
Hawick
TD9 8LF
United Kingdom
+44 (0) 1450 364 000
info@emtelle.com

Emtelle Scandinavia
Vardevej 140
7280 Sønder Felding
Denmark
+45 86 28 84 88
salg@emtelle.com

Emtelle GmbH
An der Flurscheide 20
99098 Erfurt
Germany
+49 (0) 361 654 330
info-de@emtelle.com

Emtelle UAE
Plot 597-896
Dubai Investment Park
Dubai, UAE
+971 4 883 1608
info@emtelle.com

EMTELLE.COM