



TELECOM

CATALOGUE
23/24

Full Solution with
FibreFlow

Pre-fibred &
Pre-connectorised
Specialists

Global Manufacturer
of Network Solutions

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Superfast connectivity is becoming an increasingly essential part of our daily lives. As technology capabilities expand, global connectivity expectations grow in tandem. Whether it be for home office, Wi-Fi 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 fibre, such a feat would not be possible. Optical fibre brings various 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 evergrowing connectivity requirements - with more and more fibre deployments being rolled out across the globe daily - there is a high reliance on ensuring optical fibre deployments are easy to install, efficient, and futureproof.

The complete Emtelle solution delivers this and more. The innovative direction of Emtelle FibreFlow, QWK, and FIT solution ranges enables operators to utilise a fully compatible, fully tested, and fully futureproof solution, aiding and enhancing fibre optic rollouts. Having assisted key industry players with quality and reliable fibre 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.

Our FibreFlow catalogue provides all the information on Emtelle's full solution library, making it easy to see why Emtelle is the supplier of choice and how we can support revolutionising your network rollouts.

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 fibre roll-outs.



Our Factories

Emtelle operates and manufactures in the UK, Germany, Denmark, UAE and USA and has sales representatives in The Netherlands, Sweden, and Eastern Europe. Emtelle serves over 100 countries globally, combining proven knowledge with continuous innovation for over 40 years.

Established Industry Leader

Having dominated the blown fibre and ducted solution manufacturing space since its inception, Emtelle has pioneered some of the most innovative solutions within the industry as the company has advanced over the past four decades. From standard fibre, microduct and tube bundle products to pre-fibred and pre-connectors solutions, Emtelle focuses on creating the best value, reducing total project costs, and minimizing installation time and disruption.

Full Solution Provider

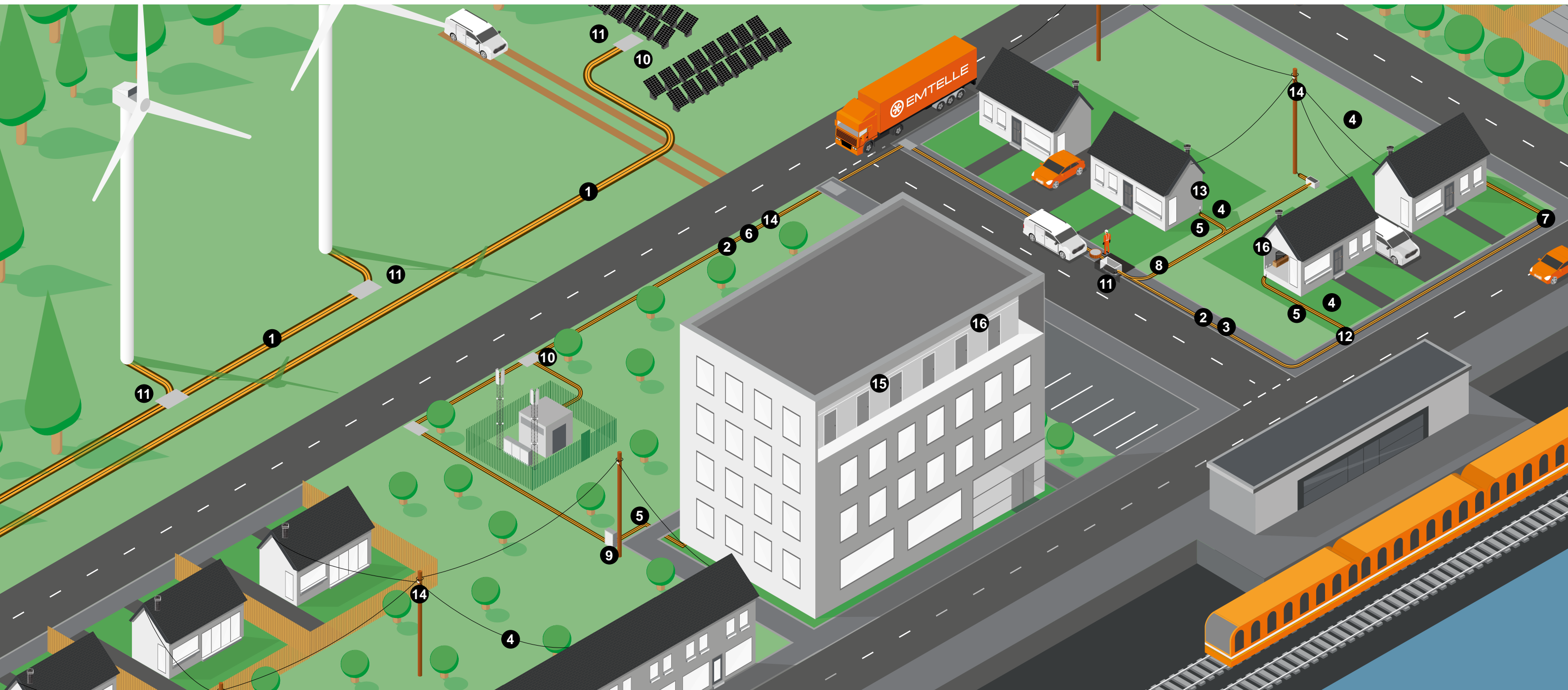
Supplying a unique and complete solution to an ever-expanding market is more pertinent now than ever. Emtelle acknowledges the challenges that providers and operators face when combining all the different components within a passive network and ensuring efficient delivery of all at the right time. Emtelle, with its one-stop-shop ethos, is all about providing customers with one direct route



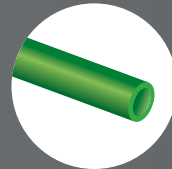
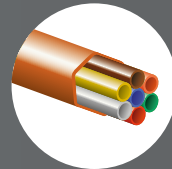
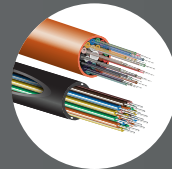
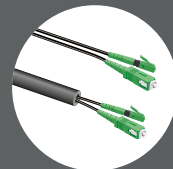
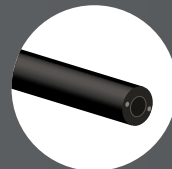
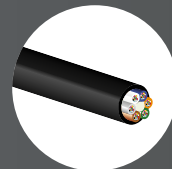
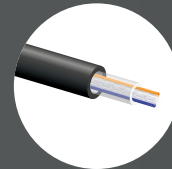
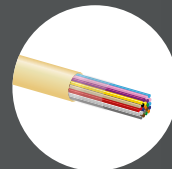




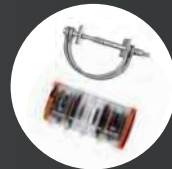
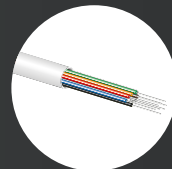

to sourcing a complete end-to-end solution, from microducts to fibre cables, from connectors to closures, from tools to blowing equipment. Emtelle makes customers' lives easier, enabling them to focus on what is paramount – creating connections effectively and efficiently.

Offering Superior Support

Emtelle offers the full solution from product supply, customer service, support and training, from initial concept to installation and beyond. Emtelle provides the highest standard of excellence. Throughout all its activities, by using the company's production capacity and technical knowledge to develop, perfect and sustain the optimum solutions, the entire Emtelle offering adds value to FTTX networks worldwide.



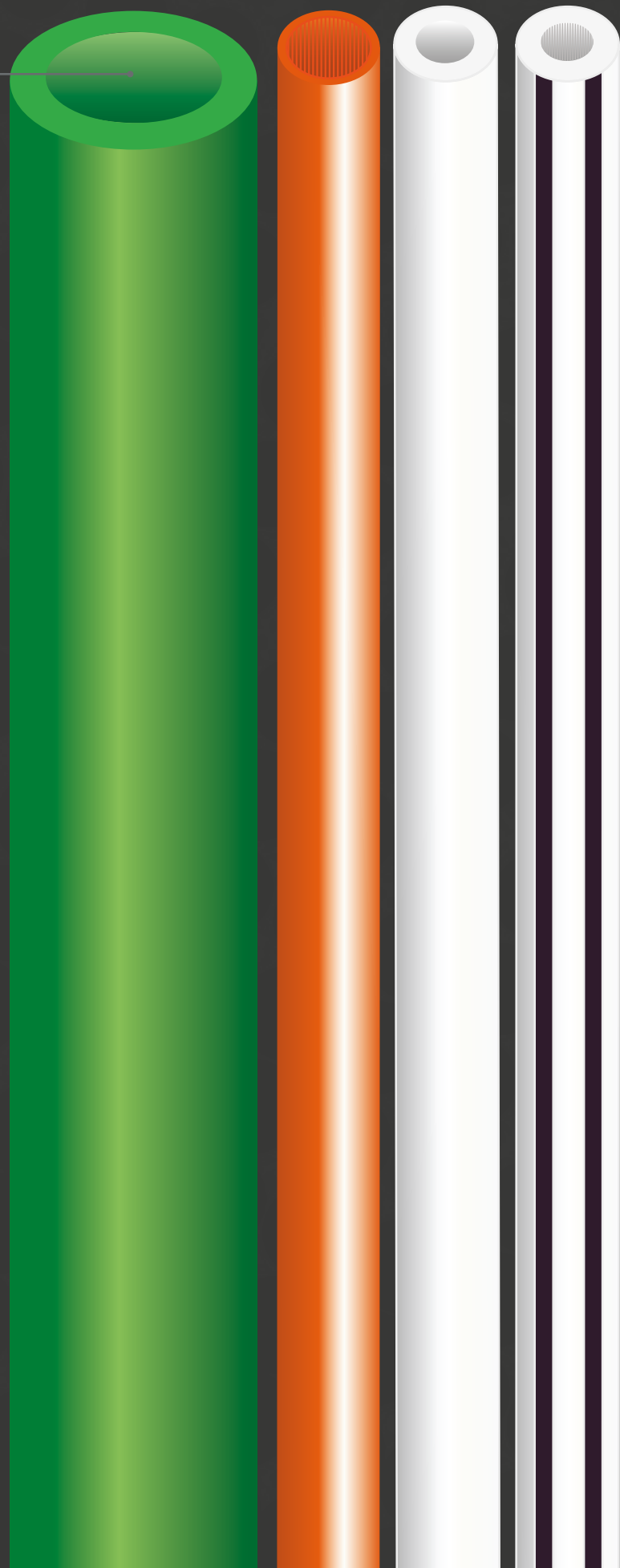
For more information please see the following pages

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| HDPE Sub-Duct | Tube Bundles | Pre-Fibred Solutions | QWK-Range | Universal Drop Tube | FibreFast Blown Mini Cable | FibreFast Xtreme | FibreFast Fibre Unit | Cabinets | Closures | Access Chambers | Boundary Boxes | Customer Entry | Accessories | LFH Cable Range | LFH Solutions |

EM-LINER

Standard, Thin or Thick Wall, LFH, Drop Tube

LDPE/MDPE/HDPE/LFH



With vast experience in polyethylene extrusion, Emtelle's subduct and microduct product solutions exemplify the highest quality. Our discipline and expertise in manufacturing allow us to produce products with low manufacturing tolerance and superior workmanship. As the core building blocks of our FibreFlow™ solutions, these products have undergone extensive research, design, engineering, and testing, ensuring they meet the highest performance standards.

Sub-Ducts offer high-level protection for telecommunication and power networks, safeguarding optical fibre, copper, or electricity cables from mechanical, chemical, and rodent damage. They are designed for high capacities and are ideal for direct burial into suitably prepared ground, serving as perfect containment for telecommunication backbone networks. Sub-ducts are compatible with various underground installation methods, such as open trench, mole ploughing, or Horizontal Directional Drilling. They can meet regional standards and feature ribbed or smooth low-friction bores, guaranteeing the highest operational reliability, long service life, high load capacity, and efficient storage.

Microducts offer maximum versatility for the ever-changing demands of fibre networks, satisfying the most rigorous installation requirements. Our high-quality microducts come in sizes ranging from 3mm to 16mm in diameter. Their reliable performance guarantees seamless fibre installations, providing the highest installation distances with the least resistance.

As pioneers in the industry, we take great pride in delivering solutions that promise operational reliability, longevity, and high load capacity. Explore the complete package of Sub-Ducts and microducts and confidently elevate your network installations.



SUB-DUCT & MICRODUCTS

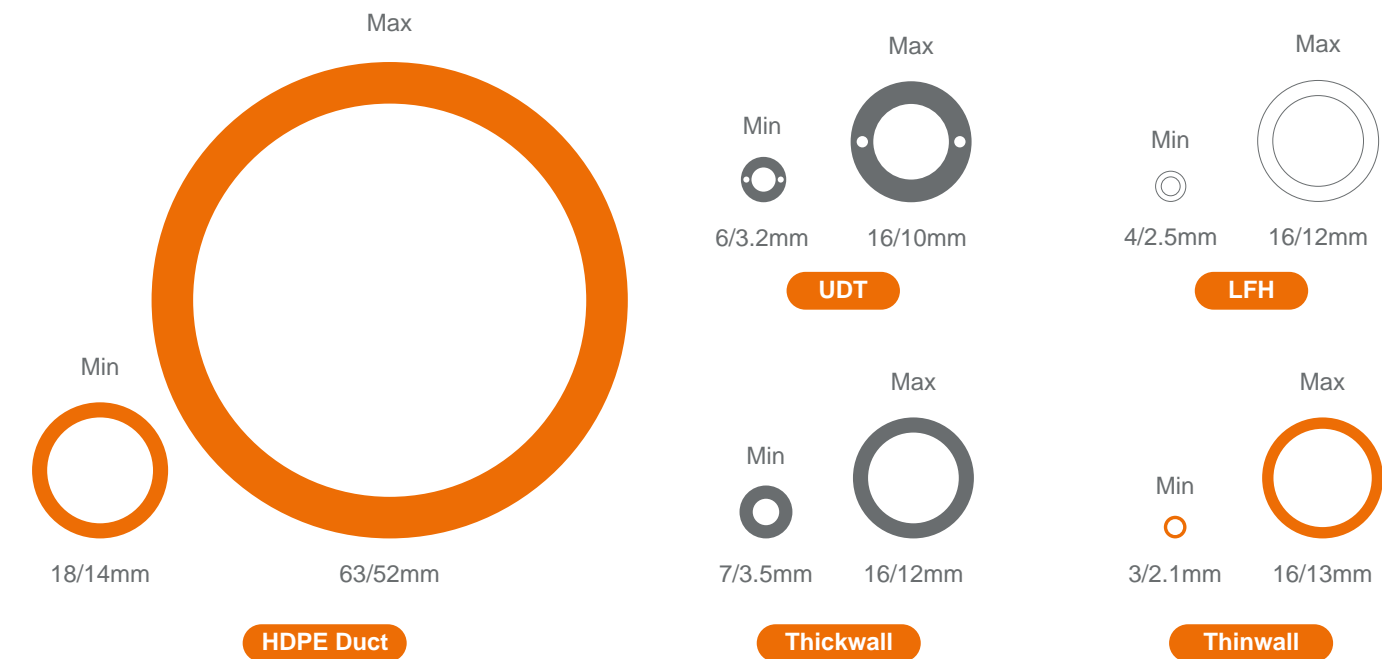
SUB-DUCT & MICRODUCT SOLUTIONS

Emtelle is dedicated to offering products that seamlessly integrate to deliver a full solution. Our guide below illustrates our extrusion capabilities to deliver our FibreFlow™ range of Sub-Ducts and Microducts.



(custom colours available upon request)

DUCT ACTUAL SIZE



EM-LINER

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

For best blowing results Emtelle developed a unique and invisible inner liner based on PE-material which is getting co-extruded into the microduct during manufacturing process. Our “EM-Liner” reduces friction between cable and microduct and improves the blowing speed and distance up to 50%.

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 access chambers needed
- Reduced cable fleeting / coiling
- Reduced installation costs for the whole network



SUB-DUCT & MICRODUCT 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



See [Page 79](#)
for Tools &
Accessories

HDPE SUB-DUCT



High-Density Polyethylene Sub-Ducts are used to construct underground duct systems for fibre optic and microducts in the telecommunication network. The HDPE Sub-Ducts are to protect fibre optic cables installed by traditional pulling techniques.

PRODUCT SPECIFICATIONS			
Size OD/ID	SDR*	Mass (Nominal)	Generic Specification
18/14mm	9	96g/m	MHT582
25/20mm	10	170g/m	
31/25mm	10.3	252g/m	
35/30mm	14	247g/m	
40/35mm	16	280g/m	
50/43mm	14.3	486g/m	
60/50mm	12	824g/m	
63/52mm	11.5	948g/m	

*SDR' is the standard dimension ratio (OD / wall). Lower SDRs indicate heavy-duty sizes.

THICK WALL MICRODUCT



Thick Wall Microducts are exceptionally tough and can be directly buried without 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 frequently deployed in pre-existing ducts with constrained space, where thick-walled ducts cannot fit. These ducts boast a narrower diameter, making them ideal for air-blown fibre installations. They come equipped with a solid, low-friction liner, ensuring optimal performance during installation.

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 a versatile customer drop solution for various installations. Contractors can utilize it overhead, in ducts, along walls, or for direct burial. Its wall incorporates GRP strength members, rendering the Universal Drop Tube spade resistant and allowing contractors to bury the product at a shallower depth, thanks to the 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, 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	

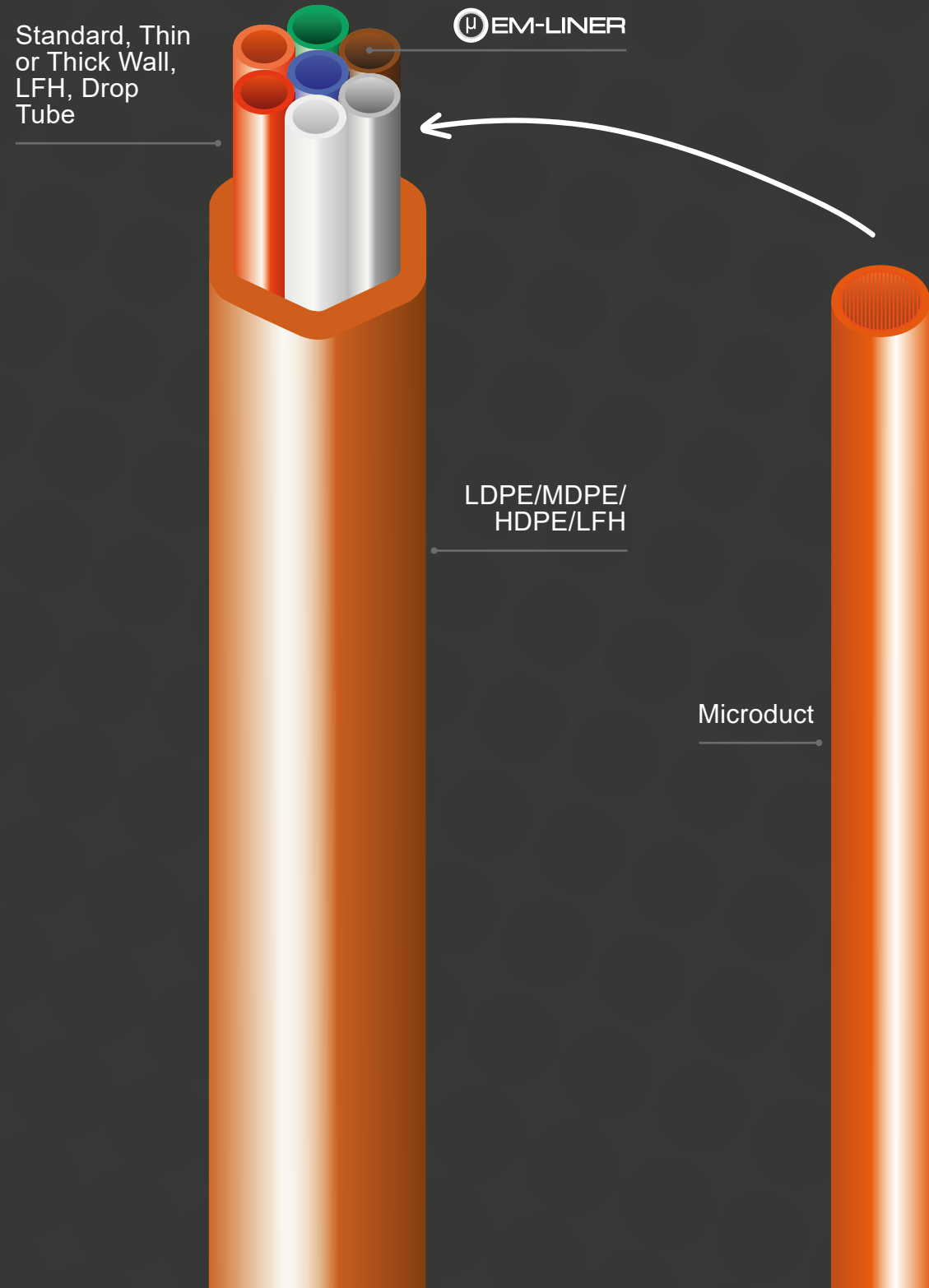
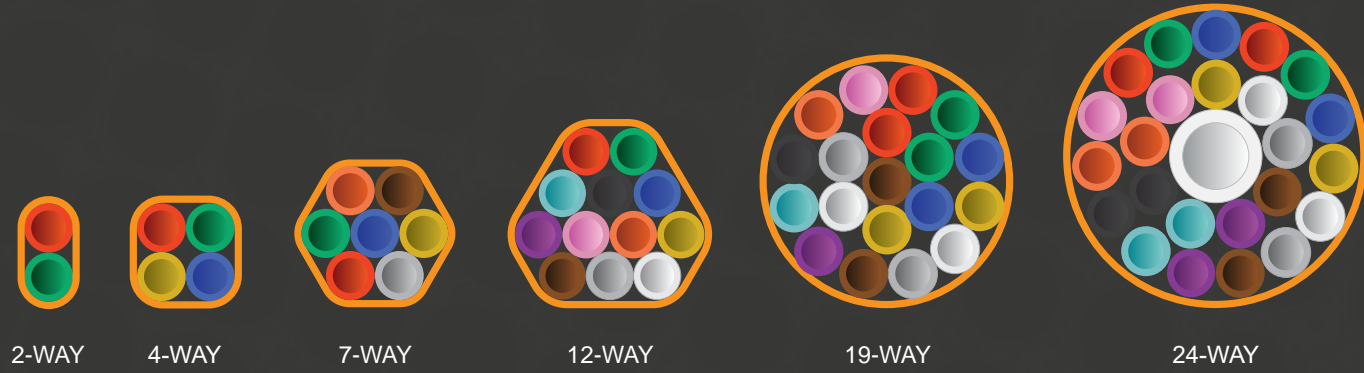
See [Page 29](#) for Fibre Optic Cable Solutions



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





Discover the epitome of network reliability using Emtelle's tube bundles. Our tightly protected microducts are tailor-made for seamless cable installations and that's not all! Microducts can accommodate our Fibrefast cable range, sizes are optimised for fibre density of up to 576 fibres.

Available in an impressive range of sizes, boasting outside diameters up to +/-70mm and holding up to 26 individual microducts, providing versatility for every part of your network!









And let's not forget that every microduct within tube bundles features a low friction liner, elevating your blowing performance for faster and smoother network installation!

- Tube Bundles with 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
- Purpose designed for each application
- Available in several types including direct bury, direct install and low fire hazard
- Suitable for installation of microcables containing between 1-24 fibres, as well as 24-576 fibres in minicables



TUBE BUNDLES

TUBE BUNDLES SPECIFICATIONS

PRODUCT SPECIFICATIONS					PRODUCT SPECIFICATIONS						
Product	Microduct Count	Size Range	Length	Material	Application			Installation into Underground Duct	Moleplough	Micro Trench	Open Trench
					Overhead	Underground	Indoor				
 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	✗	✗	✗	✓	✗	✗	✗
 FibreFlow Webflex	12	7/4 or 8/4 mm		HDPE	✗	✓	✗	✗	✗	✓ Optimised	✓
 FibreFlow Vertex	1 - 16	6/3.5 - 16/10 mm		HDPE	✗	✓	✗	✗	✗	✓ Optimised	✓
 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	5/3.5 - 14/10 mm		HDPE	✗	✓	✗	✗	✓	✗	✓

TUBE BUNDLES DATASHEETS



DBMF Traditional
MHT2803
Scan QR code for
Datasheet



DBMF Thick Wall
MHT2804
Scan QR code for
Datasheet



FibreFlow WebFlex
CP4281
Scan QR code for
Datasheet



FibreFlow 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: The ultimate in-network protection with our PE microduct assemblies, each exhibiting exceptional low friction performance. Surrounding each tube bundle is a water-blocking tape that actively prevents water movement. Embracing the bundle are two sheaths - a flexible black PE sheath and a rugged orange direct burial-grade PE sheath, delivering unparalleled protection for your network.

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: featuring direct burial microducts, each boasting exceptional low friction performance. Embrace the robustness as a thin, tough sheath envelops each assembly (tube bundle), ensuring unmatched protection and durability. Designed for direct burial, DBMF Tube Bundles effortlessly integrate into suitably prepared ground, taking your network to new heights of reliability.

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	
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
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	

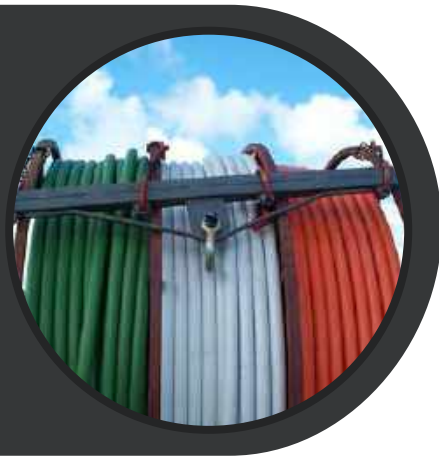
more specifications on the next page

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	
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 11](#) for Sub-Duct & Microduct Solutions



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-coloured HDPE sheath, making the product suitable for direct burial. Ripcords are pre-installed along the entire length, under the sheath, to rip through the aluminium and sheath using the 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	
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 (Round)	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 (Round)	4DB	542g/m	36.8mm	4000N	
60365	12/10mm	7DB	726g/m	43.8mm	5500N	

DI - WITH FOIL



Direct Install Metal Free: Surrounding the assembly is a robust 125µm aluminium layer bonded within a sheath of flexible black PE, tailor-made for direct-in-duct installation. To ensure effortless installation, a pre-installed rip cord runs along the entire length and is positioned beneath the sheath, enabling you to execute the correct procedure easily.

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	
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: An ideal product for areas where aluminium foil is not an option, opening up new possibilities for pulling into existing underground ducts. These products offer unmatched flexibility, ensuring an effortless setup every step of the way.

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

LOOSE PROTECTED MICRODUCT



Loose Protected Microduct solution comprises a range of microducts 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					Generic Specification
	5mm	7mm	10mm	12mm	14mm	
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	

FIBREFLOW WEBFLEX



FibreFlow Webflex is a unique product to Emtelle and 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

FIBREFLOW VERTEX



FibreFlow Vertex is a range of tube bundles designed for installation into microtrench and slot cut installations. They are narrow to make the trench width smaller, increasing trenching speed and reducing 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 mm	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, the customer must verify 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 fibre blowing. Each assembly is surrounded with a sheath of LFH material suitable for indoor fire regulation use and giving excellent performance in fire scenarios. 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	-	
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	

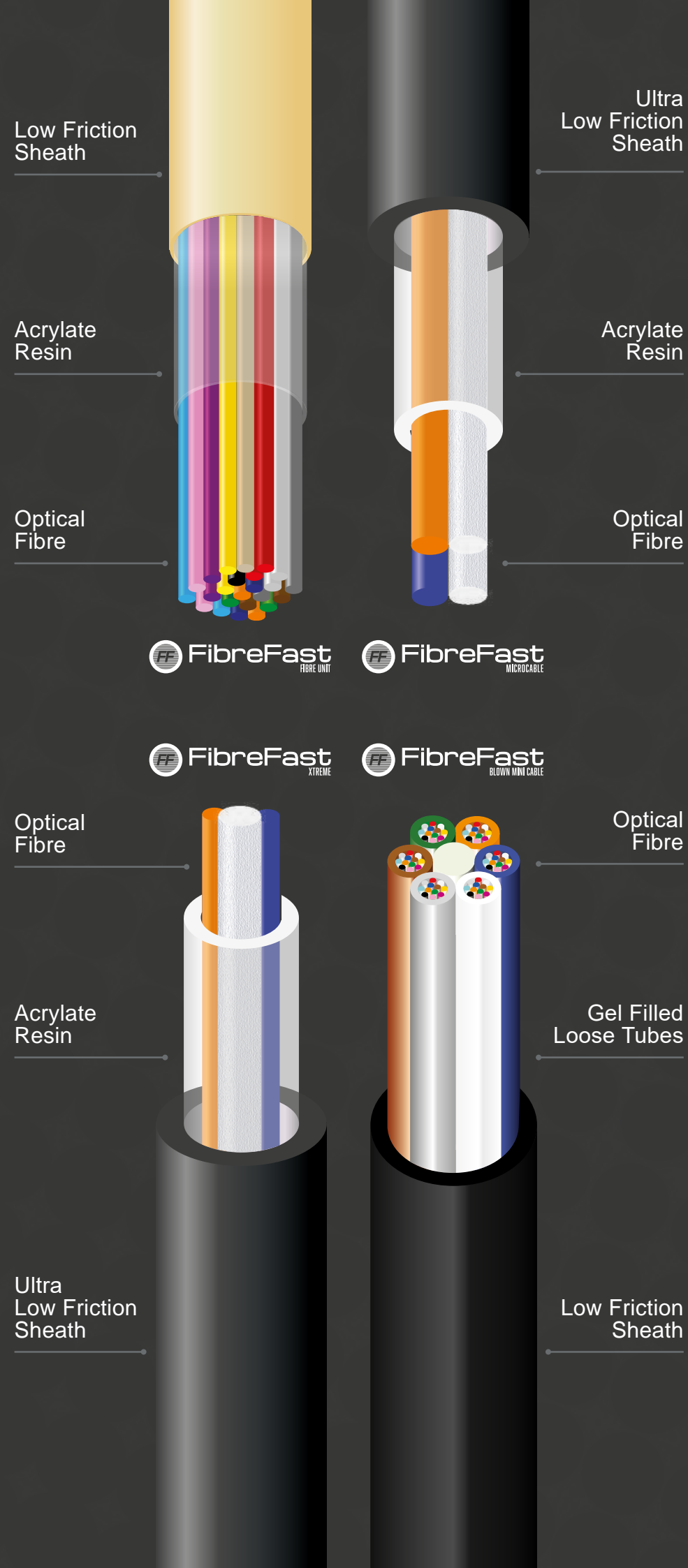
LFH TUBE BUNDLE CONT.



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
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 73](#) for Indoor Accessories



Step into the modern world of FTTH networks: Say farewell to traditional copper-based networks and embrace the cutting-edge ability of fibre optic cables, unleashing the future of connectivity.

Fibre optic cables deliver internet connectivity directly to homes, providing faster and more reliable internet speeds. From seamless video streaming to exhilarating online gaming, fibre cables can easily handle massive data loads and multimedia content. The possibilities are limitless!

Symmetrical Speeds at Your Fingertips: FTTH networks deliver symmetrical upload and download speeds, ensuring lightning-fast and stable connections for all critical applications.

A Future-Proof Solution: Fibre optic cables' durability and extended lifespan outshine their traditional copper counterparts. With reduced maintenance and replacement costs, the future is bright, and the possibilities are endless.

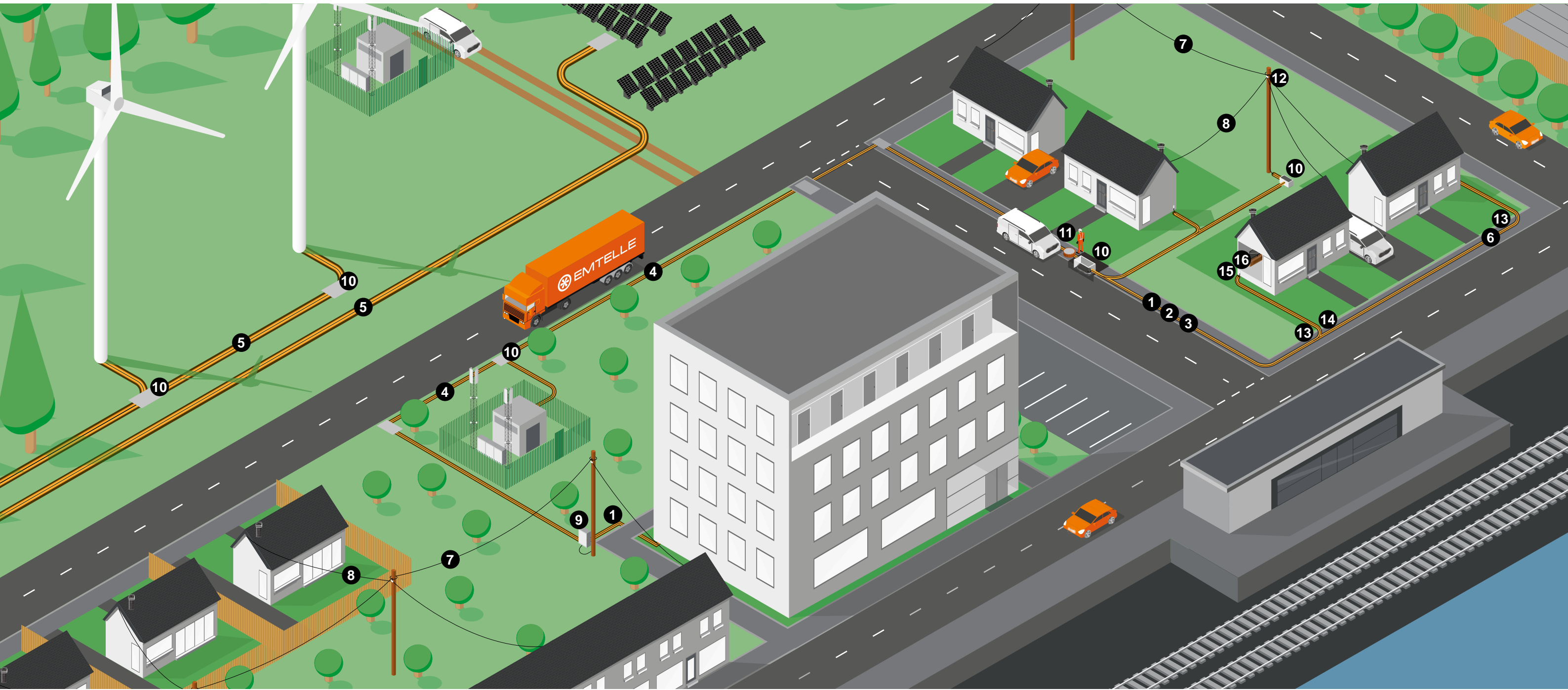
The Backbone of FTTH Networks: The magic of high-speed, reliable, and future-proof internet awaits with fibre optic cables, paving the way for an internet experience like never before. Find the right solution for your network, and join us on a journey towards a connected future!

At Emtelle, we conduct rigorous blowing performance tests on our FibreFlow™ microducts and FibreFast cables, delivering nothing short of excellence.



FIBRE OPTIC CABLES

FIBRE OPTIC CABLE SOLUTIONS



For more information please see the following pages

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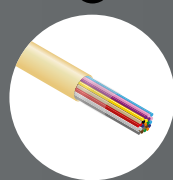
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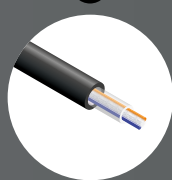
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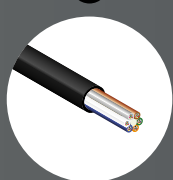
FibreFast Fibre Unit



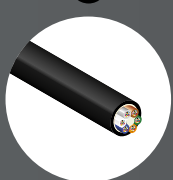
FibreFast Microcable



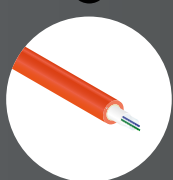
FibreFast Xtreme



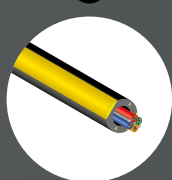
FibreFast Blown Minicable



DI Traditional Cable



DAC Cable



ULW



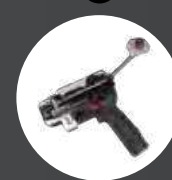
Aerial Drop Cable



Cabinets



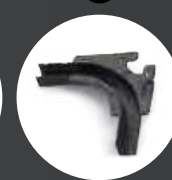
EM-Finity Closures



Blowing Equipment



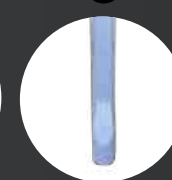
Accessories



EM-Bend



Connectors











Trunking



Boundary Wall Box

FIBRE OPTIC CABLE SPECIFICATIONS

PRODUCT SPECIFICATIONS				PRODUCT SPECIFICATIONS					
Product	Fibre Count	Dimension	Material	Application		Installation			
				Overhead	Underground	Installed within protected ducts	Blown	Pulled	Pushed
 FibreFast Fibre Unit	2 - 24f	1.1 - 2.05 mm	Low Friction HDPE	For use within existing microducts 5/3.5mm to 12/8mm		✓	✓ Optimised	✗	✓
 FibreFast Microcable	2 - 4f	1.05mm	Patented Low Friction Design	For use within existing microducts 5/3.5mm to 8/5mm		✓	✓ Optimised	✗	✓
 FibreFast Xtreme	2 - 8f	2mm	Patented Low Friction Design	For use within existing microducts 5/3.5mm to 12/8mm		✓	✓ Optimised	✓	✓
 FibreFast 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		✓	✓ Optimised	✗	✓
 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	✓	✗	✗	✗	✓	✗

FIBRE OPTIC CABLE DATASHEETS



FibreFast Fibre Unit
MHT2185
Scan QR code for
[Datasheet](#)



FibreFast Microcable
MHT2811
Scan QR code for
[Datasheet](#)



FibreFast Xtreme
MHT2708
Scan QR code for
[Datasheet](#)



FibreFast 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](#)

FIBREFAST FIBRE UNIT



FibreFast Fibre Unit is a patented design featuring our innovative low-friction outer jacket/sheath, crafted to deliver unparalleled blowing performance when combined with our FibreFlow™ microduct systems. All our solutions undergo rigorous testing, adhering to IEC 60794 mechanical and environmental test methods.

PRODUCT SPECIFICATIONS					
Fibre 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 ^{200μ}		1.73mm	2.1g/m	80mm	MHT2810

Emtelle Fibre Units products are subjected to United Kingdom Patents GB2409908C, GB2409909C, European Patent EP3270203B1 and corresponding patents in other countries. All rights reserved.



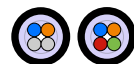
FIBREFAST MICROCABLE



FibreFast Microcable now boasts improved tensile performance! This game-changing upgrade makes our product the perfect match for our pre-terminated blowable fibre cable solutions. Whether empowering 5G, FTTA (antenna), IoT applications, bolstering distribution network infrastructure, or revolutionizing FTTH (home) connections, FibreFast Microcable delivers unparalleled performance. Perfectly tailored to fit your microduct infrastructure, FibreFast Microcable seamlessly deploys into 2.1mm to 5.0mm microducts.

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

United Kingdom Patent GB2600001B. Patents applied for: WO2022/049057, AEP6000416/23, CA3190533, CN202180054466.3, EP21762994.8, IN202317021204, KR10-2023-7011195, PH1-2023-550548, US18/024326. All rights reserved.



FIBRE & MICRODUCT COMPATIBILITY

PRODUCT SPECIFICATIONS							
FibreFast Fibre Unit - Fibre Count							
Microduct Size	2	4	6	8	12	24	24f ^{200μ}
3/2.1mm	✓	✓	-	-	-	-	-
5/3.5mm	✓	✓	✓	✓	✓	✓	✓
7/4mm	✓	✓	✓	✓	✓	✓	✓
8/5mm	✓	✓	✓	✓	✓	✓	✓
12/8mm	✓	✓	✓	✓	✓	✓	✓

NET WEIGHT OF FIBRE & PAN

FIBRE PAN SPECIFICATIONS						
Standard Length	2 Fibre	4 Fibre	6 Fibre	8 Fibre	*12 Fibre	24 Fibre
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^{200μ} weighs the same as our 12f



FIBREFAST XTREME



FibreFast Xtreme boasts a robust design, with fibres carefully set in an encapsulating layer alongside GRP, ensuring outstanding dimensional and thermal stability. Using a similar low-friction outer jacket/sheath that delivers unparalleled blowing performance, FibreFast Xtreme's robust design also enables installation via pushing methods, making it an ideal cable for the customer connector cable.

PRODUCT SPECIFICATIONS					
Fibre 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		

United Kingdom Patent GB2600001B. Patents applied for: WO2022/049057, AEP6000416/23, CA3190533, CN202180054465.3, EP21762994.8, IN202317021204, KR10-2023-7011195, PH1-2023-550548, US18/024326. All rights reserved.

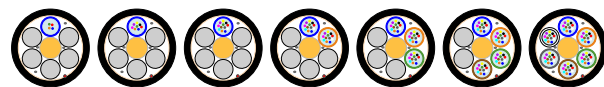


FIBREFAST BLOWN MINICABLE



FibreFast Blown Minicables are designed to be lightweight with a low-friction HDPE jacket / outer sheath. With a smaller outer diameter than traditional cables, FibreFast Blown Minicable allows for optimal filling of microducts with optic fibre. From smaller installations to extensive projects, we've got you covered! Our solution range offers blown minicables with up to 576 fibres.

PRODUCT SPECIFICATIONS - 5.3mm					
Fibre 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

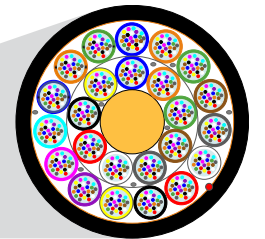


250µ Actual Cable Size

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, multiple factors must be considered - cable weight, stiffness, coefficient of friction, and even the microduct installation quality. These elements determine the average blowing installation distance. Additionally, Emtelle recommends a fill ratio of <75% for selecting blown minicables, ensuring optimal performance and efficiency. Use our quick guide to compatibility to find your perfect pairing.



PRODUCT SPECIFICATIONS											
Microduct Size	Compatible Microducts for Blown Minicables 250µ						Compatible Microducts for Blown Minicables 200µ				
	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 is ingeniously crafted for seamless duct installation by pulling. With its all-dielectric design and robust structure, DI Traditional Cable is engineered to withstand rigorous handling, making it the perfect solution for demanding installations. Embrace the ultimate flexibility as you effortlessly pull it into an existing duct whenever needed without compromising performance.

PRODUCT SPECIFICATIONS					
Fibre 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		

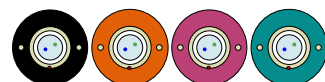


DAC CABLE



DAC cables, perfectly engineered with a robust PE outer jacket, are tailor-made for seamless deployment in shallow direct buried applications. It features added protection, as two FRP rods are expertly embedded in the outer sheath, ensuring your cables can withstand installation hurdles. Entelle can supply them in various outer jacket colours, making identifying and streamlining your network installations effortless.

PRODUCT SPECIFICATIONS					
Fibre 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

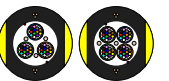


ULW CABLE

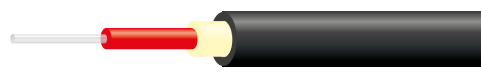


Ultra Lightweight cables redefine compact design. They embody lightweight brilliance with a sleek 7mm diameter and weigh <38kg/km. Engineered for distribution lines up to 11kV, the ULW cable brings unparalleled convenience and versatility to your projects with two dynamic designs: a dry acrylate tube or a soft, easy strip tube with water-blocking gel.

PRODUCT SPECIFICATIONS					
Fibre 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 provides ultimate versatility for the final FTTX aerial or façade connection. This compact, lightweight cable comes with a bare end or as a pre-connectorised solution, reducing splicing costs and installation time.

PRODUCT SPECIFICATIONS					
Fibre Count	Fibre 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

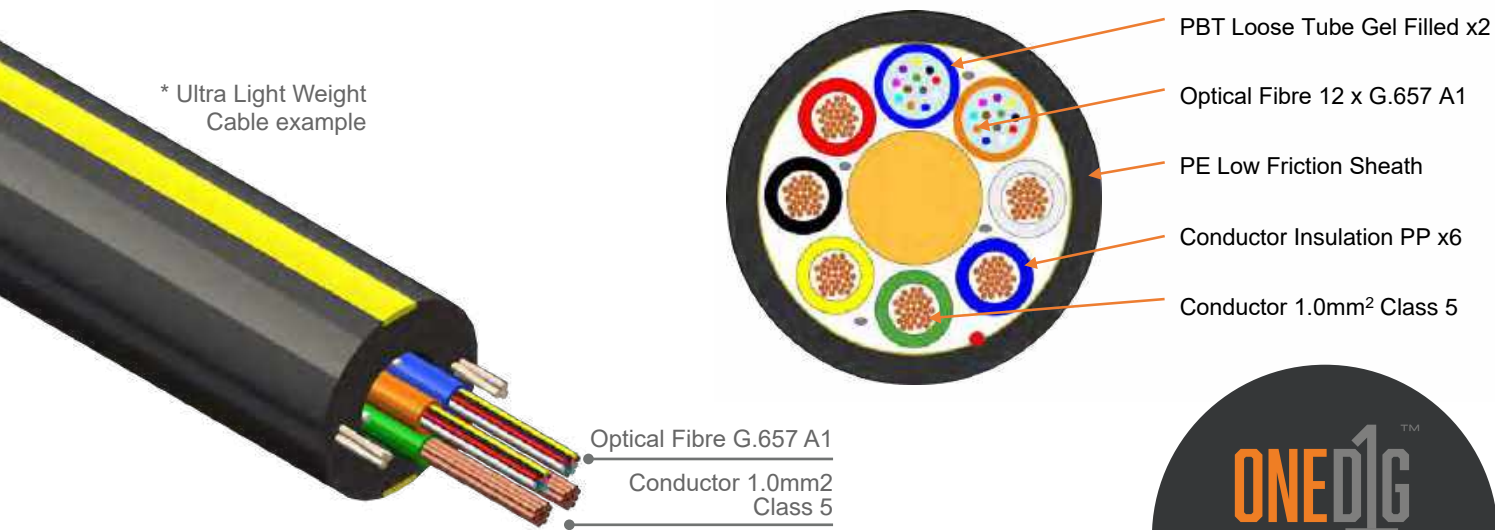
Welcome to the Future of Connectivity: Where Power and Communication Converge!

The struggles of separate power and communication networks are behind us, and the era of efficiency and seamless infrastructure management is here. Gone are the days of time-consuming and costly power infrastructure management by 3rd parties (Building owners, Local utility).

We've reimagined the network by integrating power and communication services, paving the way for Smart Cities and Smart Networks to become a tangible reality.

Through innovative collaboration with our partners, we've elevated our FibreFlow™ products to a new level to remotely power low-voltage network access devices, setting the stage for a revolutionary optical communication system with electrical conductors.

Embrace a dual distribution network's vast potential and boundless benefits - combining power and communication.

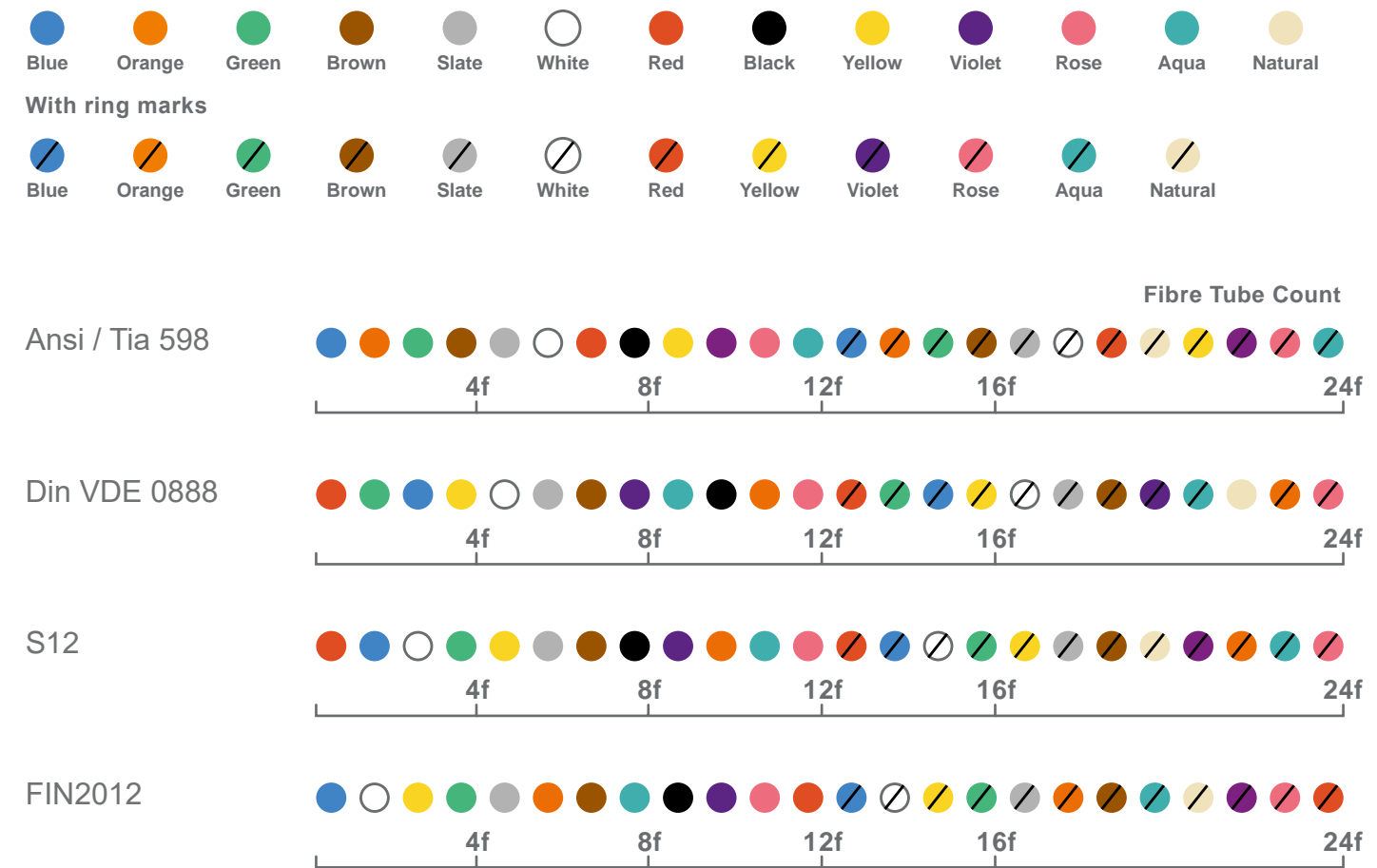


FEATURES & BENEFITS

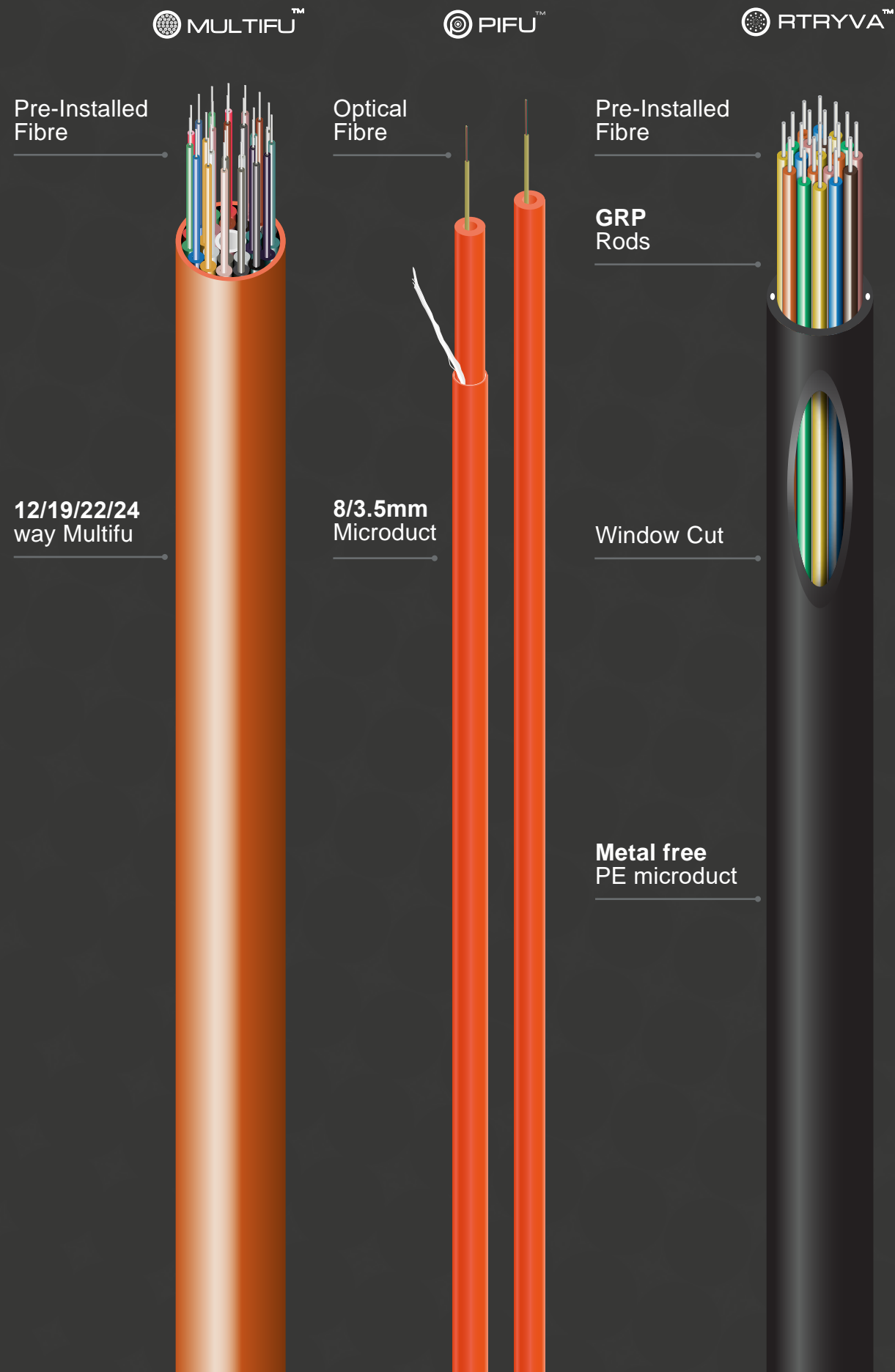
- Single installation capex for communications and power network.
- Single point of failure – Manage backup power systems at a centralized point.
- Safe low voltage DC to DC systems with lightweight cables that can be deployed easily.
- Compact powered fibre cable systems to overcome various installation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



FIBRE COLOUR IDENTIFICATION



See [Page 82](#) for Fibre Cable Accessories



Revolutionise Your Network Rollouts with Emtelle's Fibre In Tube Solutions!

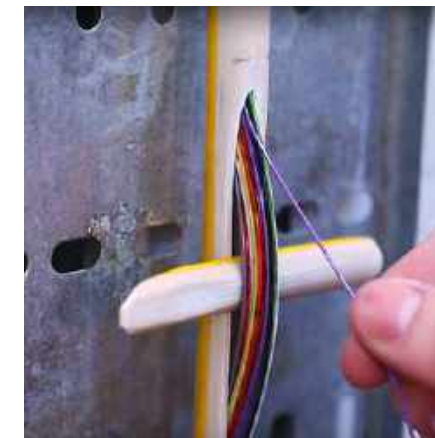
What if you could achieve a fully "blown" network right from Day one of installation without the hassle of on-site blowing? Emtelle's FIT-Range (Fibre In Tube Range) is here to make that a reality.

The Perfect Blend of Innovation: The FIT-Range ingeniously combines Emtelle's core fibre and duct products, offering factory-pre-installed microducts and bundles, allowing you to embrace the benefits of pre-installed solutions without traditional blown fibre hurdles.

Unmatched Cost Savings: By eliminating the need for on-site blowing, the FIT-Range dramatically reduces total project costs, saving you time, resources, and equipment expenses. Embrace a more cost-efficient and streamlined approach to network installations!

High-Speed Installation: With the FIT-Range, speed is of the essence—experience lightning-fast installations, empowering you to meet the demands of high-speed connections quickly.

FTTH in ONE DIG becomes a reality with Emtelle's innovative FIT-Range. Unleash the full potential of your network rollouts with the efficiency and innovation of Emtelle's Fibre In Tube solutions.



PRE-FIBRED

Game-Changing Solution in the FIT-Range!



Multifu™ is a cutting-edge tube bundle, revolutionizing how fibre and duct are installed. With microducts pre-installed with a fibre unit, this innovative solution allows for a seamless installation process, eliminating the need for specialist blowing equipment when connecting customers.

Unlock Unprecedented Speed and Simplicity: Multifu™ empowers increased rollout speeds and reduces skill requirements, making network installations a breeze. No more complications or delays – easily connect customers using this groundbreaking solution.

Access and Flexibility Redefined: Multifu™ offers unmatched accessibility along its length through a window cut. Pull back the required fibre length (up to 150 metres) and effortlessly push it to each home, streamlining your installations.

Built to Last: Constructed of PE microducts, each housing a fibre unit, the bundle is surrounded by an outer sheath, allowing for direct burial installation into suitably prepared ground. Multifu™ is the epitome of durability and reliability.

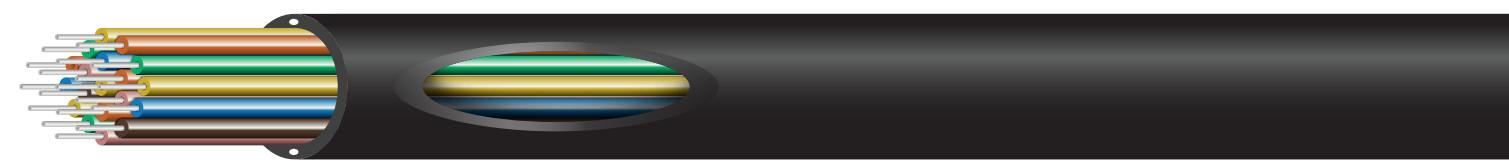
Tailored to requirement: Multifu™ can be partially or fully fibre-populated in multiple configurations and sizes, catering to every customer's unique needs.

Embrace the brilliance of Multifu™, part of Emtelle's FIT Range.

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



The High-Density Fibre Pull-Back Solution!



Experience Unmatched Efficiency: Emtelle RTRYVA is a high-density fibre pull-back cable meticulously engineered with pre-installed loose fibre units protected within a PE microduct. Eliminate complexities and embrace a solution that makes duct access and branching quick, easy, and hassle-free.

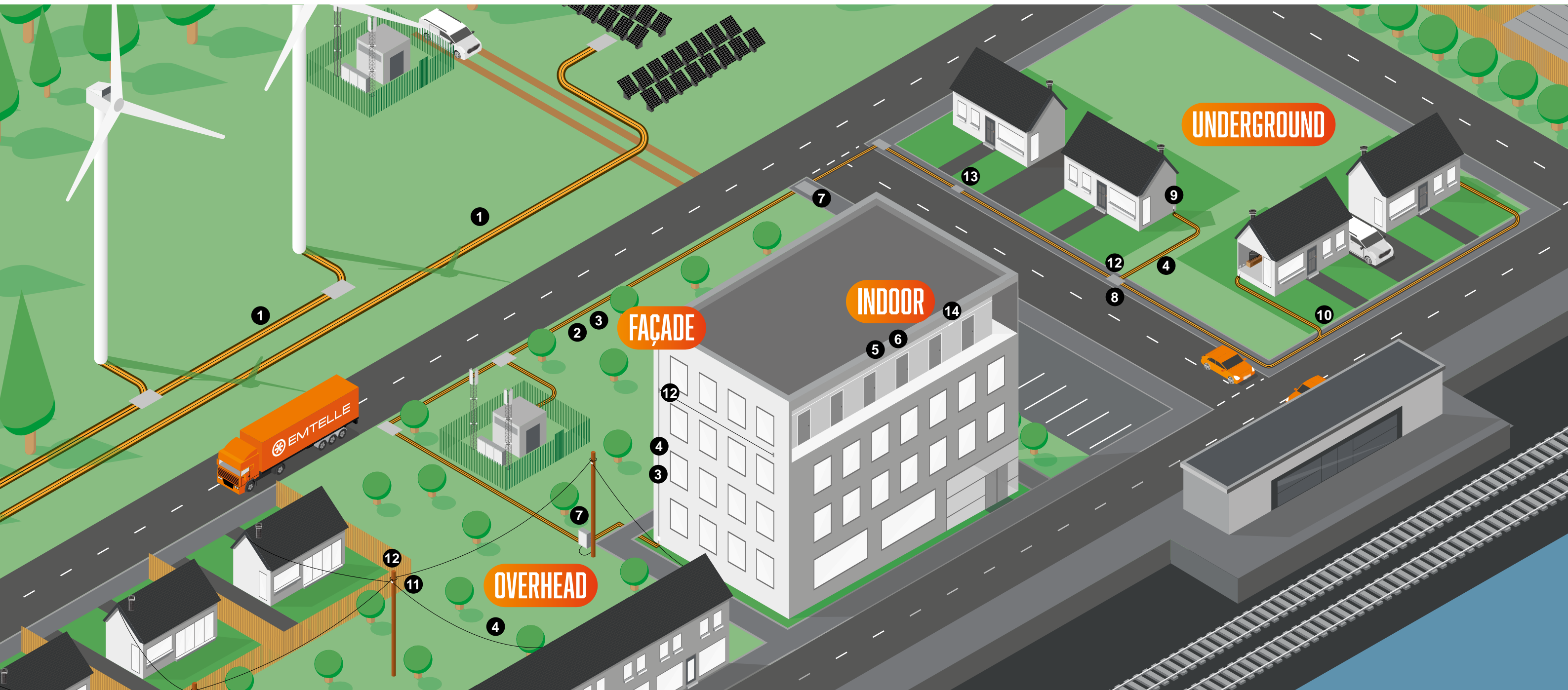
Streamlined Installations: With RTRYVA, you can access the desired fibre effortlessly through a simple window cut. Pull back the fibre unit and seamlessly branch it to the home through a dedicated drop duct - no connectors needed. Our innovative EMU box takes fibre installation to the next level, offering effortless breakout and distribution for your convenience.

Fit for Your Needs: RTRYVA offers the ultimate solution, requiring minimal tools, training, and installation equipment. Whether pushing or pulling, achieving high-density fibre installations has never been smoother.

RTRYVA redefines efficiency and reliability. Experience the future of fibre installations and embrace seamless connections like never before!

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

PRE-FIBRED SOLUTIONS



For more information please see the following pages

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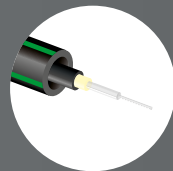
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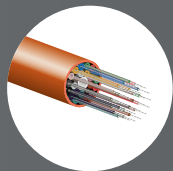
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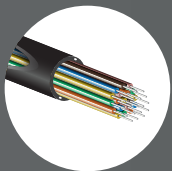
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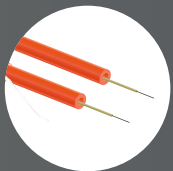
Pre-Cabled Sub-Duct



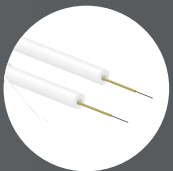
MULTIFU



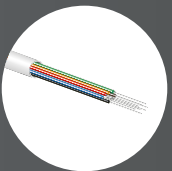
RTRYVA



PIFU



Indoor PIFU



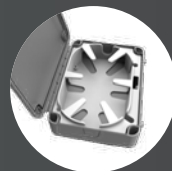
Indoor RTRYVA



EM-Finity Closures



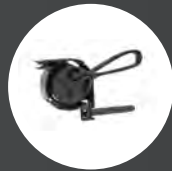
Access Box



Boundary Wall Box



EM-Bend



Overhead Accessories



EMU Box




EM-Marker



RTRYVA 6mm BOBM

PRE-FIBRED SPECIFICATIONS

PRODUCT SPECIFICATIONS				PRODUCT SPECIFICATIONS						
Product	Fibre Count	Dimension	Length	Application						
				Overhead	Underground	Indoor	Moleplough	HDD	Micro Trench	Open Trench
 Pre-Cabled Sub-Duct	1 - 576f	Up to 37mm	1000 - 2000m	✓	✓	✗	✓	✓	✓	✓
 MULTIFU	4 - 288f	Up to 67mm	500 - 1000m	✗	✓	✗	✗	✗	✓	✓
 RTRYVA	8 - 360f	6 - 16 mm	1000 - 2500m	✓	✓	Using LFH Sheath	✗	✓	✓	✓
 PIFU	2 - 4f	5 - 8 mm	1000 - 2000m	Using Universal Drop Tube	✓	Using LFH Microduct	✗	✓	✓	✓

PRE-FIBRED DATASHEETS



MULTIFU
MHT2675
Scan QR code for
[Datasheet](#)



RTRYVA
CP2509
Scan QR code for
[Datasheet](#)



PIFU
MHT2059
Scan QR code for
[Datasheet](#)



See [Page 74](#)
for EMU Box
Solution

PRE-CABLED SUB-DUCT



Pre-Cabled Sub-Duct can have either fibre optic or fibre mini-cables pre-installed, redefining convenience. With lengths of up to 10km available, dependent on cable type and materials, Emtelle can provide various combinations of a single fibre cable within HDPE ducts – and the best part? This cable can be effortlessly upgraded whenever you choose.

PRODUCT SPECIFICATIONS				
Cable Type	Cable Diameter	Mini Trenching	Mole Ploughing	Overhead
Fibre 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 Fibre 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 your ultimate tube bundle solution, seamlessly integrating microducts pre-installed with a fibre unit, ensuring a seamless installation of fibre and duct in one swift process. With MULTIFU, bid farewell to the complexity of specialist blowing equipment. Enjoy accelerated rollout speeds and a significant reduction in skill requirements. This is connectivity redefined - simple, efficient, and future-ready.

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, the high-density fibre pull-back cable that sets new standards. With pre-installed loose fibre units protected within a PE microduct, RTRYVA takes simplicity to the next level. Experience seamless duct access and effortless branching - using minimal training, tools and installation equipment.

PRODUCT SPECIFICATIONS		
RTRYVA Size	Fibre 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	

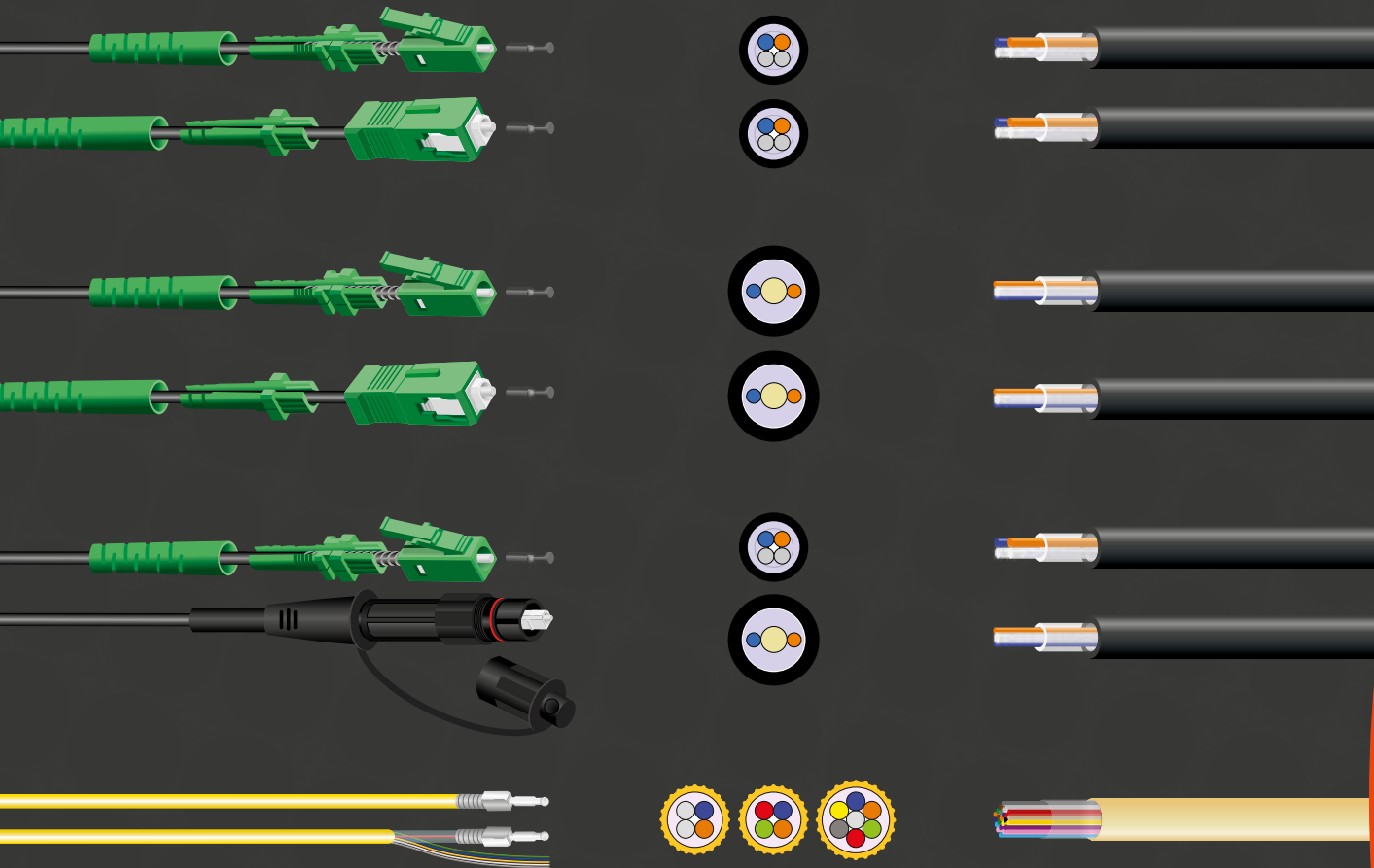
PIFU



PIFU is the ideal solution for FTTH drops to homes. Designed for swift action, PIFU ensures quick and efficient repairs and replacements in case of physical damage. With PIFU, downtime becomes a thing of the past.

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

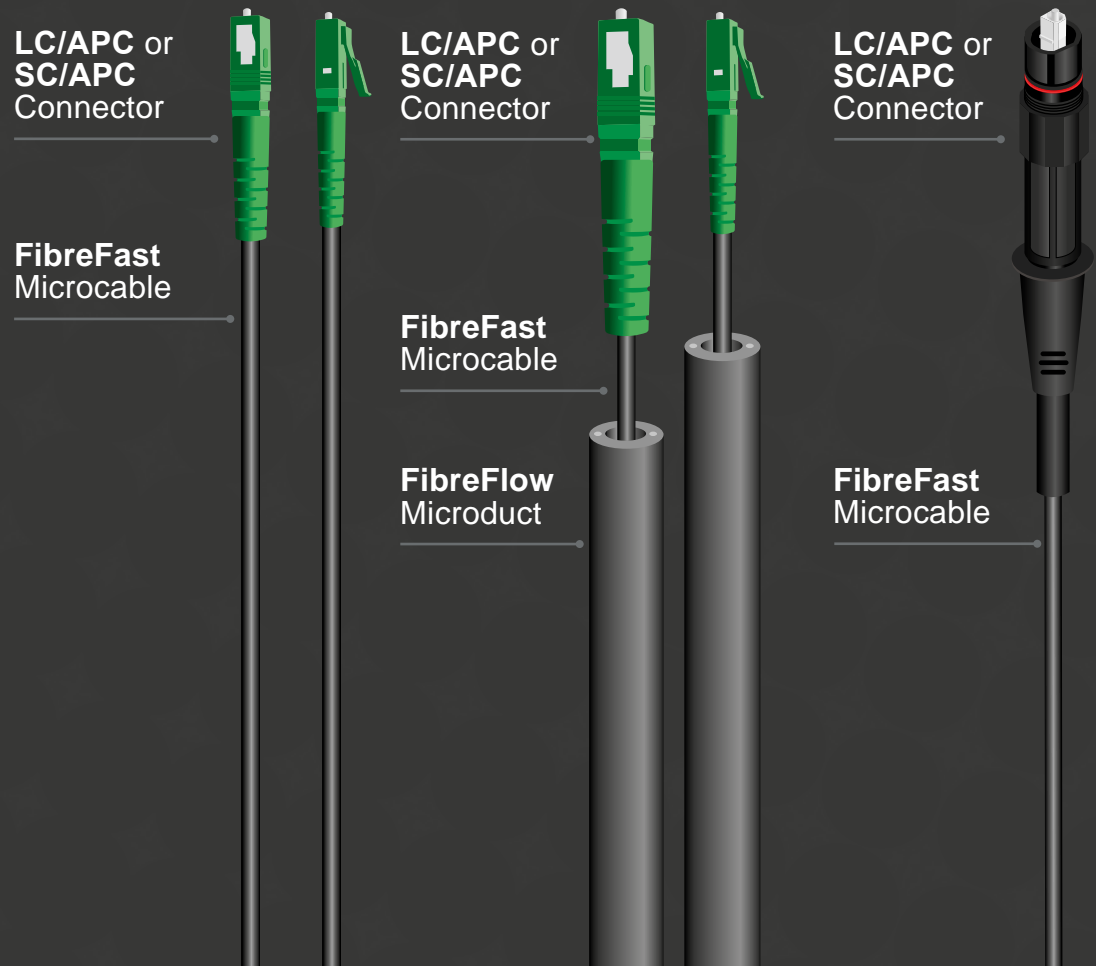


In the high-speed world of modern telecommunication networks, customisation, efficiency, and plug-and-play integration are paramount. Enter Emtelle, the trailblazer of innovation in this field. Our state-of-the-art fibre termination facilities underscore our unwavering commitment to pushing the boundaries in the industry.

Our award-winning pre-connectorised solutions, developed within these advanced facilities, are the epitome of customisation. The pre-connectorised QWK-Range, equipped with connectors on one or both ends, isn't just a product; it's your gateway to unparalleled connectivity.

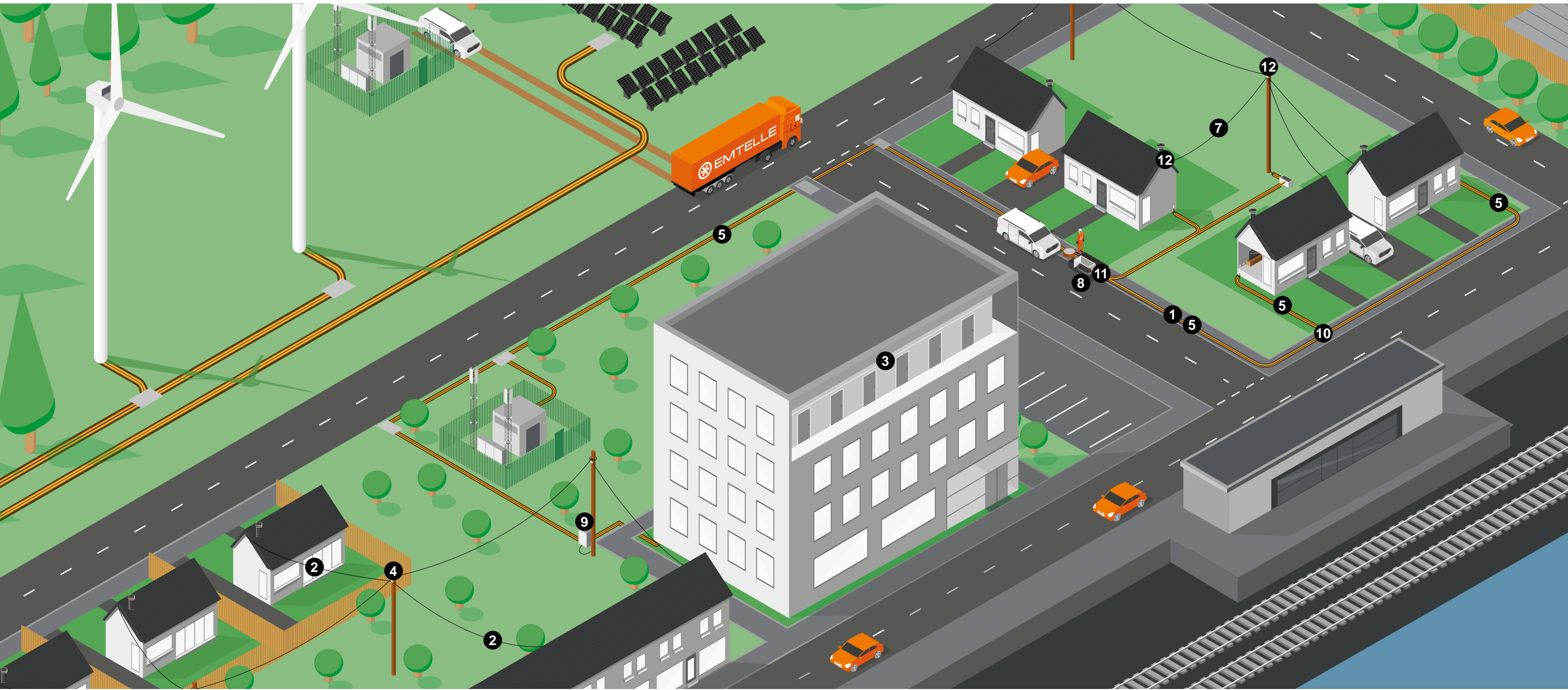
Complex splicing procedures are a thing of the past! With pre-connectorised solutions, complex installations are streamlined, ushering in a new era of effortless connectivity deployment. The benefits are far-extensive: seamless integration, rapid installations, and a plug-and-play experience that accelerates your projects. Deployed globally, Emtelle's QWK-Range sets a new standard for efficiency and reliability. But our commitment extends beyond the product; it's about your success. By embracing pre-connectorised solutions, you choose a path that elevates project value, trims overall costs, and minimizes disruption. It's a decision that propels you forward, ensuring your networks are future-proofed and ready for tomorrow's challenges.

Join us in the revolution that's reshaping the FTTX landscape. Embrace the power of connectivity, where innovation meets outstanding service. At Emtelle, we're not just pioneers but partners in your journey towards unmatched connectivity.

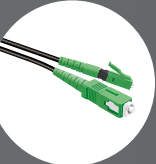
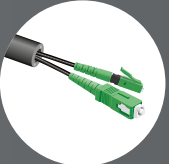


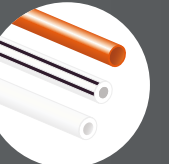
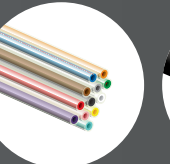
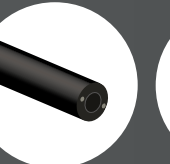







PRE-CONNECTORISED

PRE-CONNECTORISED SOLUTIONS




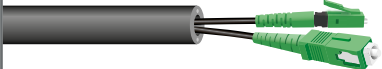


For more information please see the following pages

- | | | | | | | | | | | | |
|--|---|---|---|---|--|---|---|---|---|---|---|
| page 53 | page 53 | page 53 | page 53 | page 11 | page 25 | page 12 | page 63 | page 76 | page 75 | page 85 | page 87 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| QWKLink | QWKconnect | QWKconnect Indoor | Hardened Connector | Microducts | FibreFlow WebFlex | Universal Drop Tube | EM-Finity Closure | Cabinets / Manholes | Boundary Boxes | ELF | Overhead Accessories |

NO SPLICING

ON PRE-CONNECTORISED SOLUTIONS

PRE-CONNECTORISED 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	Patented sheath	For use within existing microducts 5/3.5mm to 8/5mm			field	✓ Optimised	✗	✓
 QWKconnect	LC/APC or SC/APC	6/3.2mm	in 25 / 50m increments	HDPE	✓	✓	✗	field	✗	✓	✓
		7/3.7mm		HDPE	✓	✓	✗	field	✗	✓	✓
		5/3.5mm		HDPE	For use within existing infrastructure			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	For use within existing microducts 5/3.5mm to 8/5mm			factory	✓	✓	✓

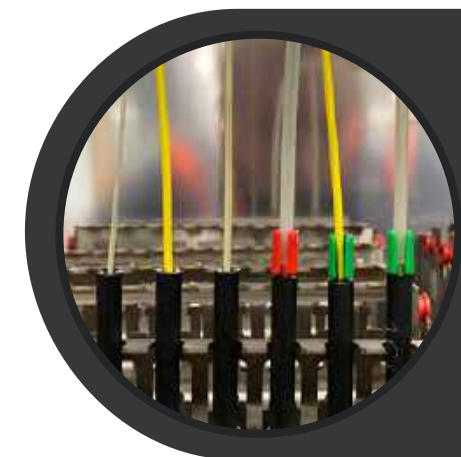
PRE-CONNECTORISED DATASHEETS



UK_DS_QWKLINK
Scan QR code for
Datasheet



UK_DS_QWKCONNECT
Scan QR code for
Datasheet



See [Page 85](#)
for ELF
Solution

QWKLINK

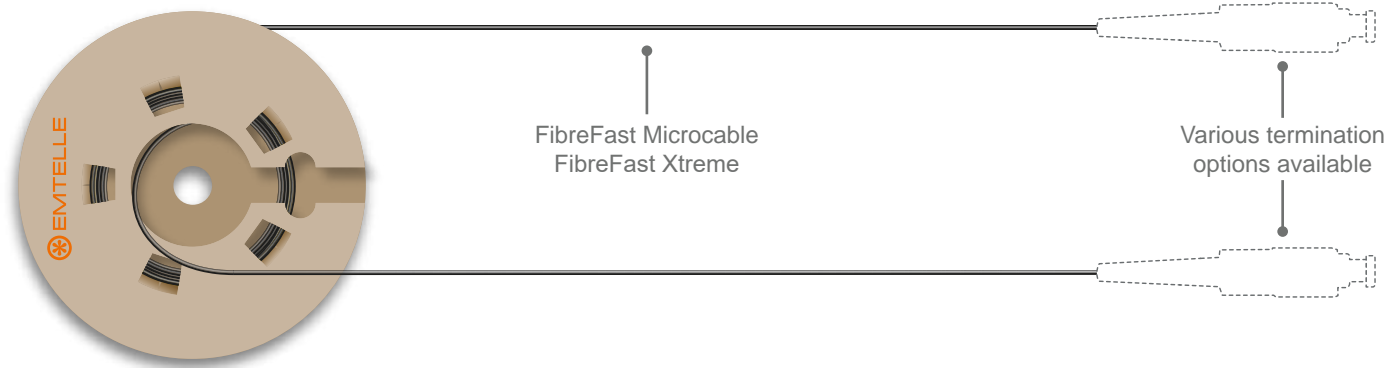


QWKLINK, our patented fibre bundle pre-connectorised during manufacture, is set to redefine how you connect homes in your network. This innovative solution eliminates the need for fibre splicing and is available with SC or LC APC ferrules for seamless installation.

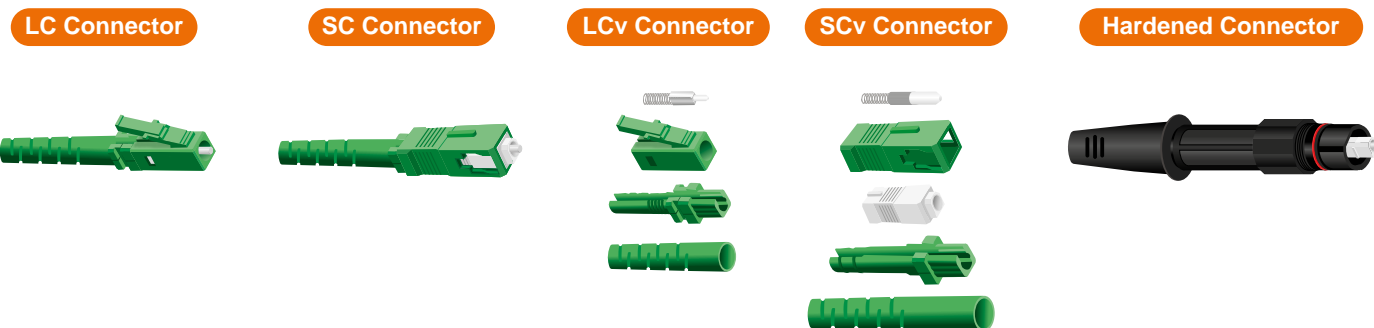
The best part? No specialized training or tools are required! QWKLINK simplifies your installation process, making it faster and more efficient.

PRODUCT SPECIFICATIONS			
Fibre Type	Fibre 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		

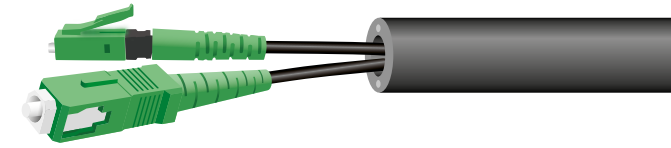
BUILD YOUR OWN QWKLINK



Termination Options



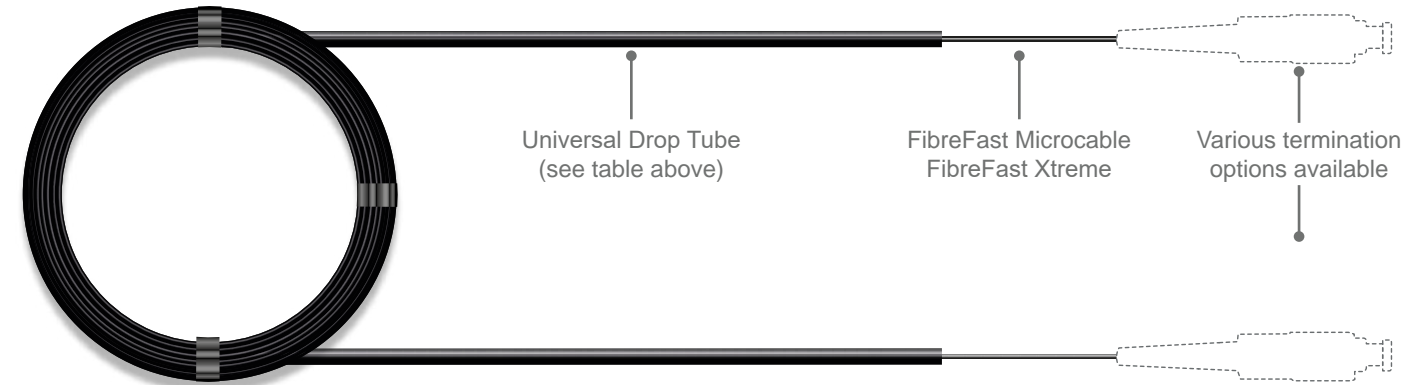
QWKCONNECT



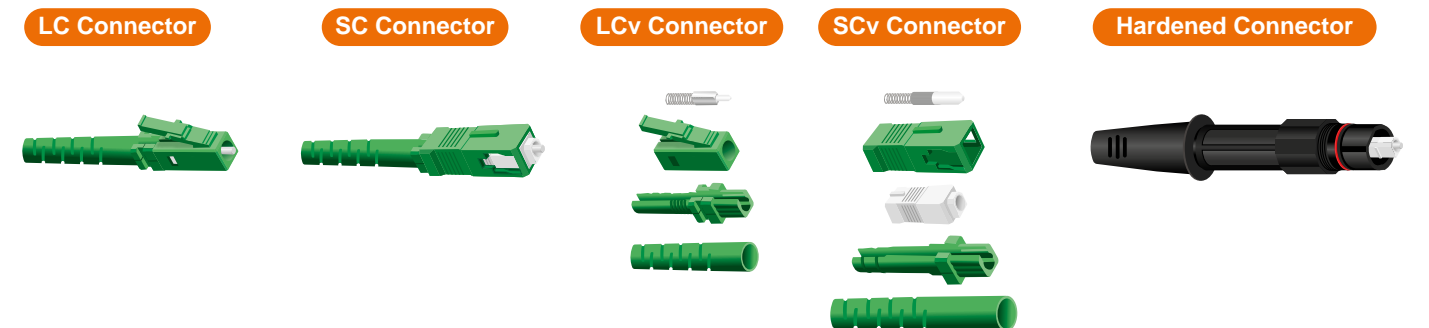
QWKCONNECT is more than just pre-connectorised fibre—it's a game-changer. With pre-connectorised fibre installed within a FibreFlow microduct during manufacturing, it paves the way for dedicated pathways to every home. This ingenious design revolutionizes the connection process, making it swift and straightforward. There is no need for specialized training or tools—it's all about seamless, hassle-free connectivity. Welcome to the future with QWKCONNECT, where innovation meets simplicity!

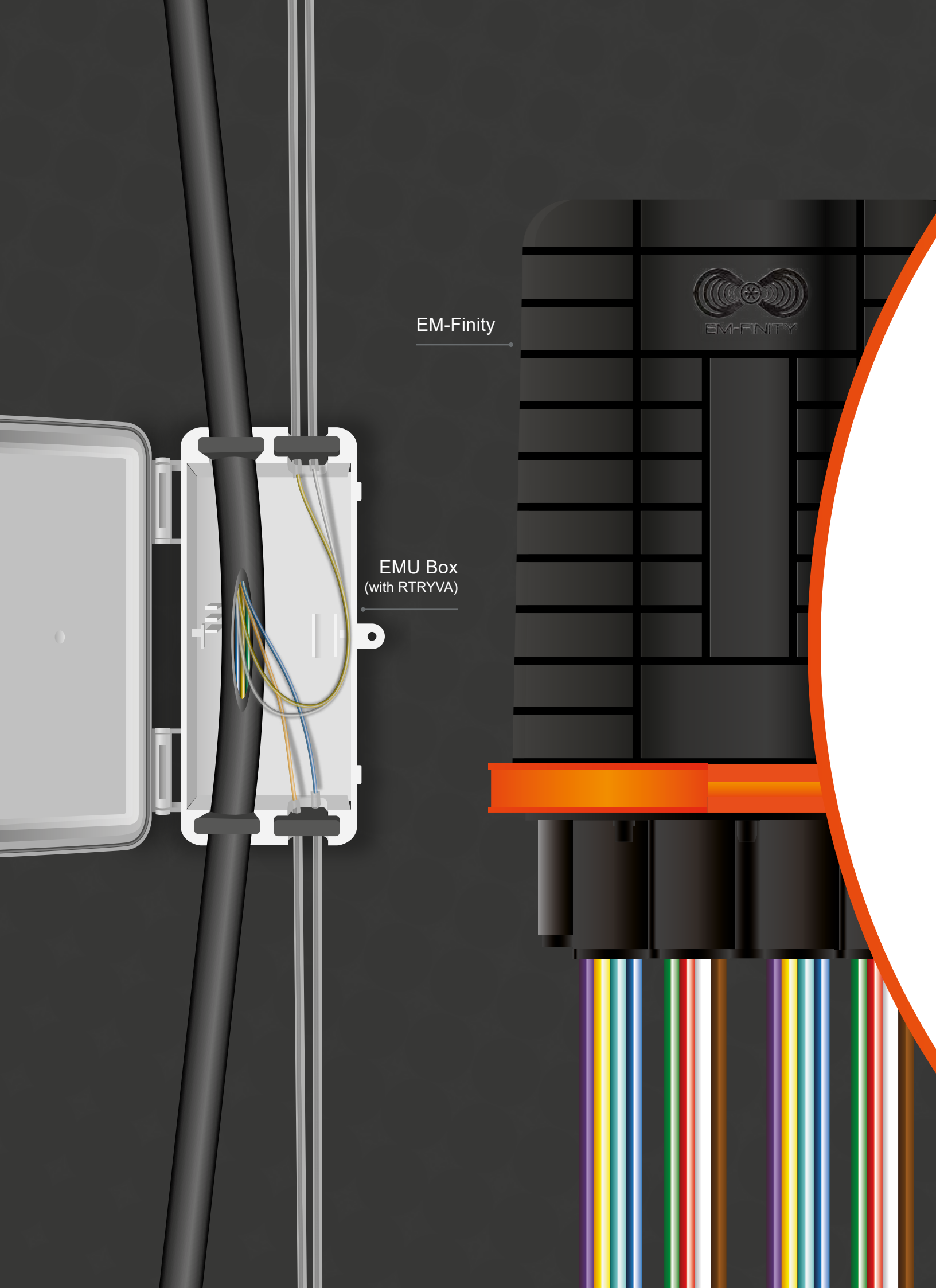
PRODUCT SPECIFICATIONS					
QWKconnect Size	Application	Fibre Type	Fibre Count	Connector	Generic Specification
5/3.5mm	External HDPE	G.652.D G.657.A1 G.657.A2	2f - 4f	LC/APC or SC/APC	UK_DS_QWKCONNECT
7/4mm					
8/4mm					
5/3.5mm	Internal LFH - Dca s1, d2, a1				
7/4mm	Internal LFH - B2ca-s1a, d2, a1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

BUILD YOUR OWN QWKCONNECT



Termination Options





EM-Finity

EMU Box
(with RTRYVA)

In extensive networks, excellence demands more than just fibre and ducts. Emtelle brings you more than products; we provide complete, high-quality solutions. Our diverse range of accessories is the missing piece that completes your network puzzle.

Closures are the unsung heroes of network infrastructure. These essential components offer protection and accessibility, ensuring your network functions seamlessly, even in challenging conditions. Emtelle's closures are not just reliable; they're the backbone of your network's resilience. Whether you're safeguarding vital connections in harsh outdoor environments or ensuring secure access in indoor facilities, our closures deliver.

We've got everything from closures and cabinets to marker pens and labels. But here's what separates us: every accessory undergoes rigorous compatibility testing. After all, a network's strength lies in even its most minor components.

Discover the power of comprehensive solutions with Emtelle. Elevate your network's efficiency and effectiveness with our top-notch accessories—the final touch ensures your network stands strong.



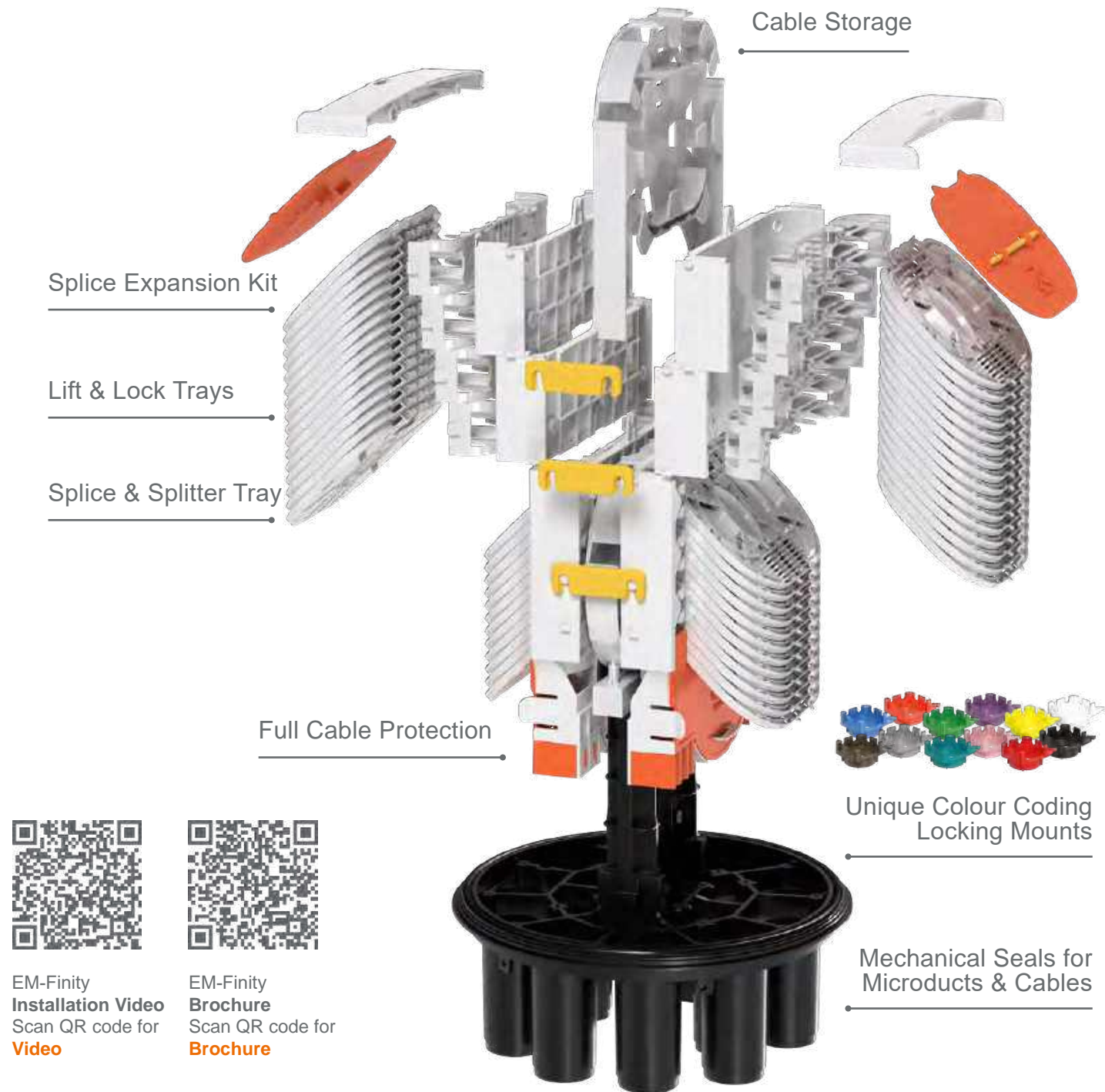
CLOSURES

EM-FINITY CLOSURE



The EM-Finity fibre 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 colour-coordinated, ensures quality workmanship for years to come.

Communications Networks use colour to identify ducts, microducts, fibre cables and fibres. Now Emtelle have introduced colour into splice enclosures to ensure your network is fully colour 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

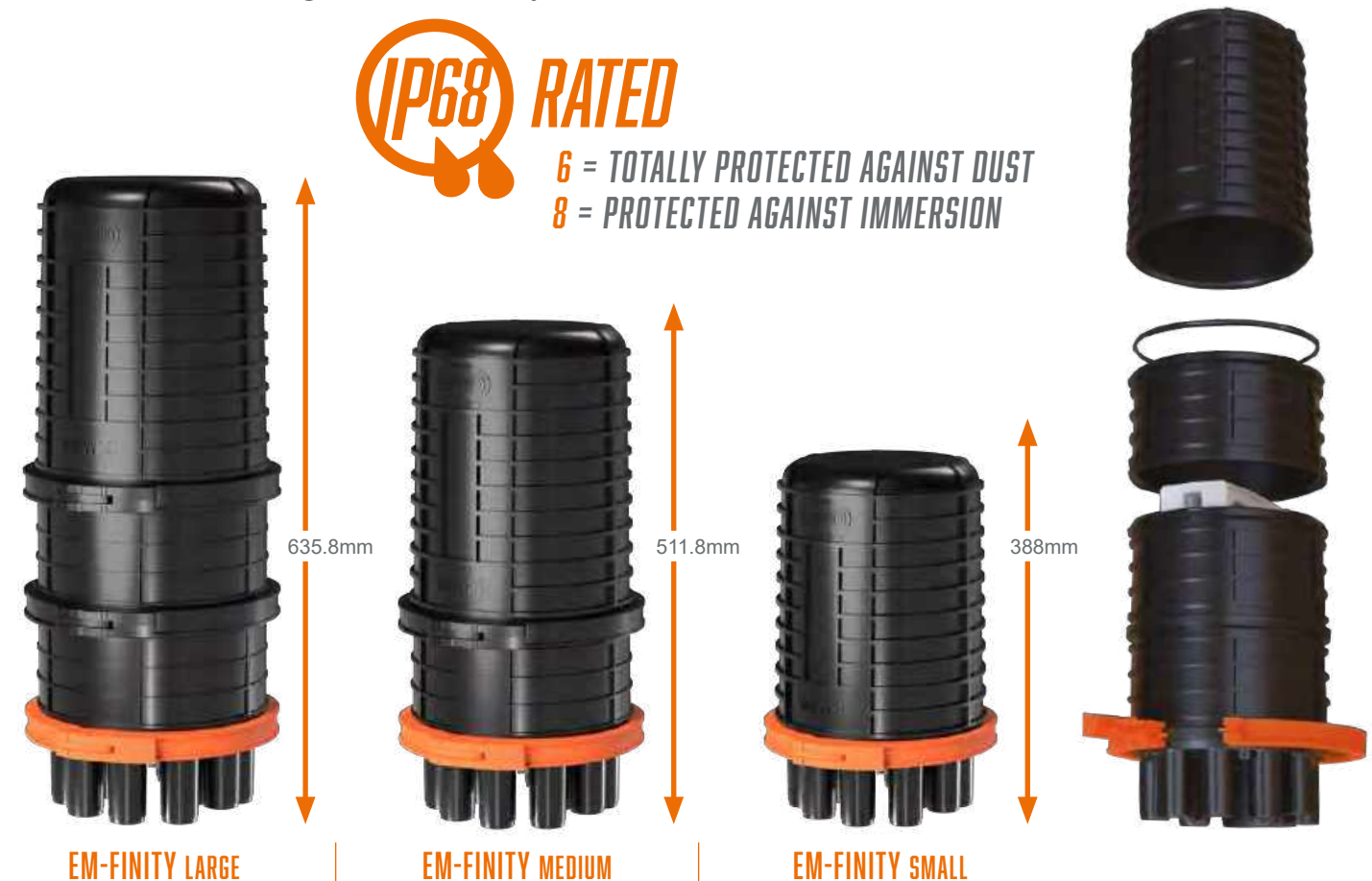
FEATURES & BENEFITS

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 fibre count splicing, fully utilising the space within the dome.
- ⊗ Splice trays can hold **12 / 24** fusion splices or **12** ANT sleeves and simultaneously, can hold up to two 40x4x4mm splitters or one 60x7x4mm.
- ⊗ 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.
- ⊗ Fibres pass from stack to stack through the bottom of the fibre management.
- ⊗ Central loop fibre storage with special cassette.
- ⊗ Capable of sealing Emtelle microducts **4-12mm**.
- ⊗ Can be configured for pre-connectorised, **24, 48, 72** and **96** customer connections.
- ⊗ Can also be configured with no trays for a custom build.

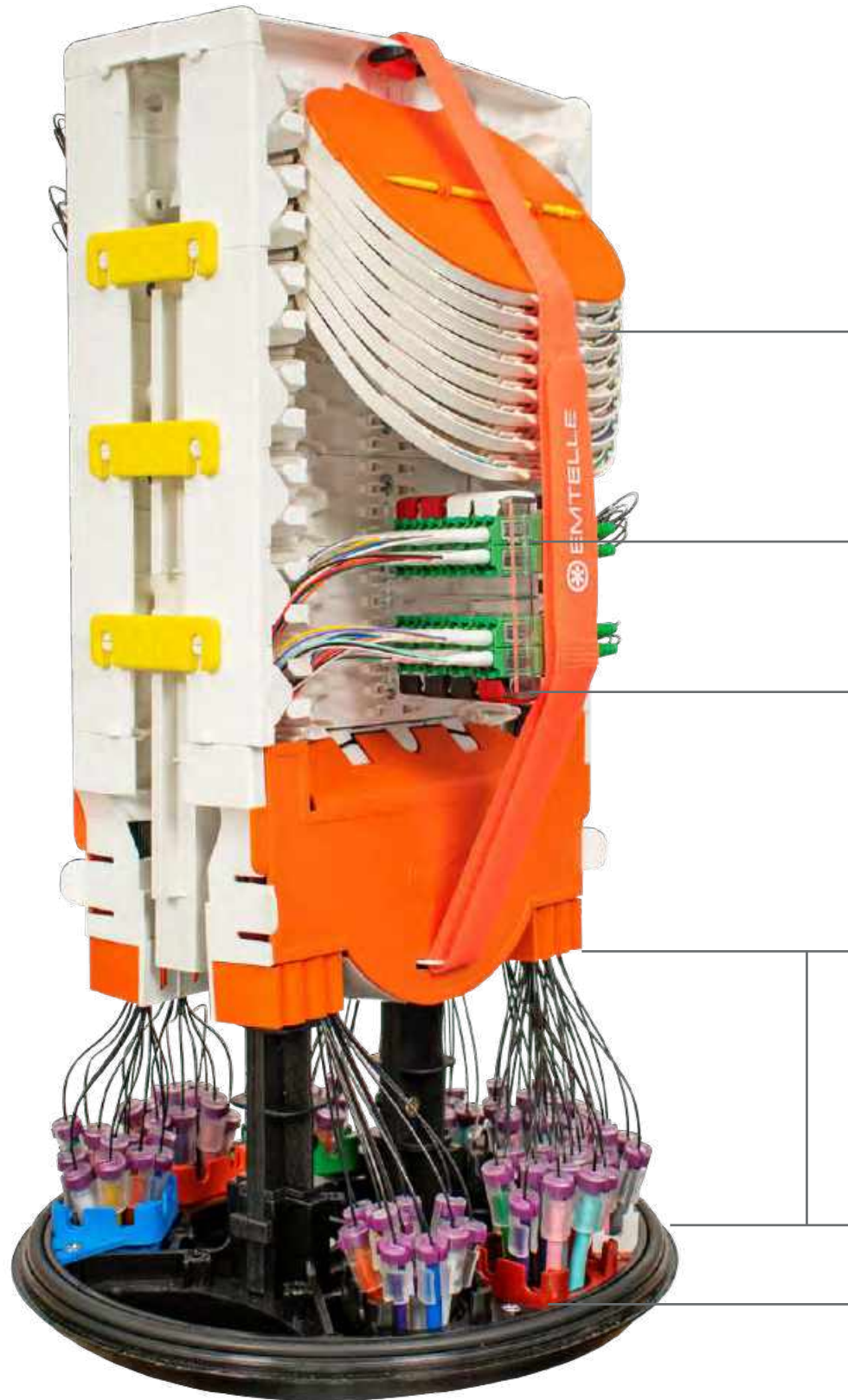


6 = TOTALLY PROTECTED AGAINST DUST
8 = PROTECTED AGAINST IMMERSION



EM-FINITY COLOUR CODED SYSTEM

PRE-CONNECTORISED FEATURES & BENEFITS



96 customer connections max.

Splitters or splice trays can accommodate PLC splitters, fusion splicing and ANT type splice protectors. With fibre management for front to back routing of the fibres.

One modular termination bracket can hold up to 32 customers.

Unique colour 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 fibre.

Upto 96 individual drop ports available 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-connectorised customers.

PRODUCT SPECIFICATIONS

Splice Capacity	12 per tray
ANT 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 LARGE

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

PRODUCT SPECIFICATIONS

Splice Capacity	12 per tray
ANT 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 MEDIUM

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

PRODUCT SPECIFICATIONS

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



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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-connectorised customers.

PRODUCT SPECIFICATIONS

Splice Capacity	24 per tray
ANT 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 fibre splice trays with heat shrink type splice holder.



UK_DS_Splice_Trays
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 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 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.



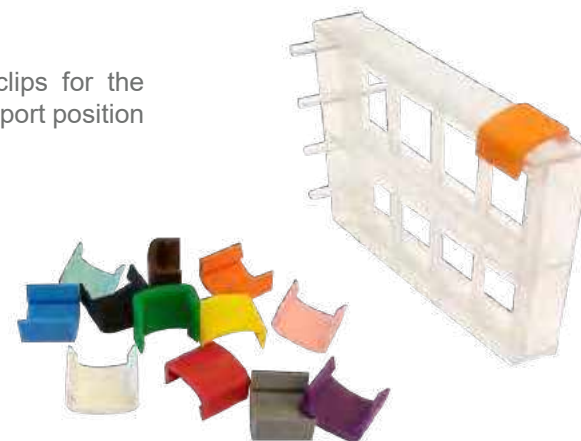
UK_DS_Round Port Seal
Scan QR code for
Datasheet



UK_DS_Round Port Seal No Collar
Scan QR code for
Datasheet

EM-FINITY BRACKET CLIP

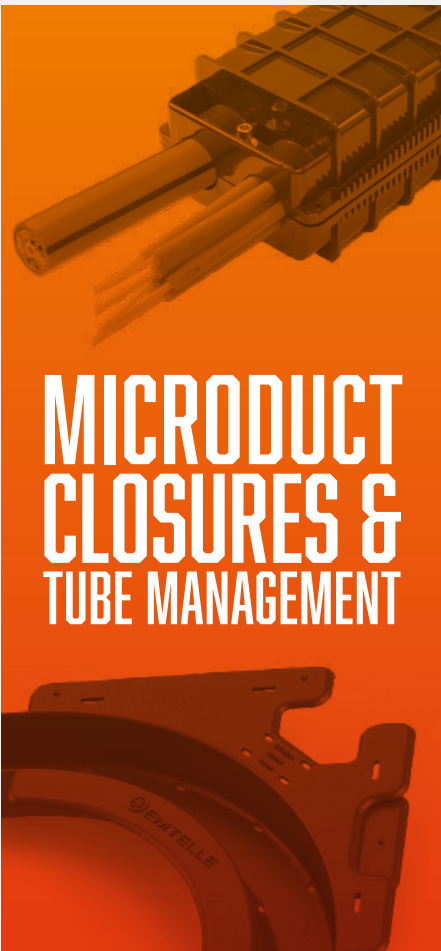
EM-Finity Bracket Clips are bespoke identification clips for the EM-Finity dome closure range. Each clip identifies the port position for the ease of installation and maintenance.



UK_DS_Bracket_Clip
Scan QR code for
Datasheet



See [Page 53](#)
for Pre-Connectorised
Solutions



MICRODUCT CLOSURES & TUBE MANAGEMENT

H-BRANCH



H-Branch closure is a protective closure to manage and distribute microducts. The closure offers superior ingress protection with 4 large diameter port.



UK_DS_72279
Scan QR code for Datasheet

TDC



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. High impact resistance allows for direct buried application.



UK_DS_7514
Scan QR code for Datasheet

EXTERNAL CUSTOMER LEAD IN (LARGE)



External Customer Lead In and through wall protection of fibre 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 fibre 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

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 than 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 protects 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. It can also be used as an L/T branch.



UK_DS_75444
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 deviating 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 fibre 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 access chambers 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 FTTH network. The box can store the slack from pre-terminated drop cables or fibre modules at the end of a riser cable.



UK_DS_Boundary_Wall_Box_Slack_Storage
Scan QR code for
[Datasheet](#)

CCP



Customer Connection Point provides a fibre 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](#)

FIBRE OPTIC WALL OUTLET



Fibre Optic Wall Outlet enables a fibre optic cable termination point to be present within the end user's home. The wall outlet accommodates two fibre adaptors, SC simplex or LC Duplex.



UK_DS_Fibre_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 FTTH Network.



UK_DS_Boundary_Wall_Box
Scan QR code for
[Datasheet](#)

CTU 1.0 & 1.5



CTU is a compact access point from where a technician can maintain and install customer connection infrastructure. The wall-mounted closure can store excess cable and support a splice connection.



UK_DS_CTU
Scan QR code for
[Datasheet](#)

CCP+DROP



Customer Connection Point solution – A pre-installed internal drop cable with a customer connection point (CCP) included. It is fully assembled 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 access chambers or boundary access points.



UK_DS_Microloop
Scan QR code for
[Datasheet](#)

EMU BOX



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



UK_DS_72792
Scan QR code for
[Datasheet](#)

FLAT-FIST™



FIST GC02-F is a generic environmentally sealed enclosure for the fibre management system that provides the functions of splice and passive component integration in the external network.



UK_DS_GC02F
Scan QR code for
[Datasheet](#)



ACCESS MANAGEMENT

ACCESS CHAMBERS



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



EF450-024
Scan QR code for
Datasheet

COVERS & FRAMES



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



EF450-046
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_TOBY_BOXES
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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_TOBY_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

FTTX BOX



Toby 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_TOBY_BOXES
Scan QR code for
Datasheet

SQ TOBY BOX (SMALL)



Square Toby Box (Small) is designed for terminating telecommunications cabling and has an opening lid, allowing for close abutment to adjacent walls.



UK_DS_TOBY_BOXES
Scan QR code for
Datasheet

SQ TOBY BOX (QUAD)



Square Toby Box (Quad) is designed for terminating telecommunications cabling and has an opening lid, allowing for close abutment to adjacent walls.



UK_DS_TOBY_BOXES
Scan QR code for
Datasheet



CABINET & LOCKING MANAGEMENT

CABINET



Cabinet - Suitable for dense distribution of customer connections and large distribution cables. Customer connections can be directly spliced or distributed through the LGX splitter modules.



UK_DS_FTTH_Cabinets
Scan QR code for
Datasheet

SMARTLOCK LOCK & KEY



Smartlock is a lock and key system providing an extra security line 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

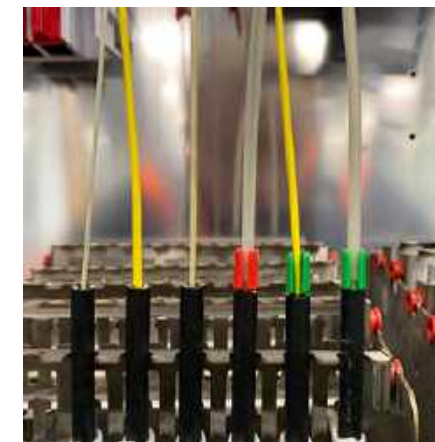
Dismantling
KnifeHeavy
Duty Cutters

Constructing a robust FTTH network isn't just about the products—it's about on-site installation quality. At Emtelle, we understand that every installation must be proper and professional to ensure the network's success.

That's why we go the extra mile to support our customers during every step of the installation process. We provide valuable installation training that equips your team with the skills and knowledge needed for a seamless setup. Plus, we offer a wide range of cutting-edge tools and accessories that streamline the installation process.

Our blowing equipment is not just reliable—it's rigorously tested to ensure perfect compatibility with our ducts and cables. We've got you covered for all your needs regarding tooling equipment, whether preparing fibre optic splices or efficiently branching microduct bundles.

At Emtelle, we're not just about products but about delivering a complete solution. Join us in confidently building your FTTH network, knowing you have the right support and tools for a successful installation.



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 subunits within an assembly.



UK_DS_7071
Scan QR code for
Datasheet

PRIMARY TUBE CUTTER



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



UK_DS_7014
Scan QR code for
Datasheet

42MM HEAVY DUTY CUTTERS



42mm Heavy Duty Cutters have 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. The tool has four blade depth settings, 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 creates a longitudinal window cut on Emtelle's 15/9mm RTRYVA. The window cut will allow access to the fibre 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



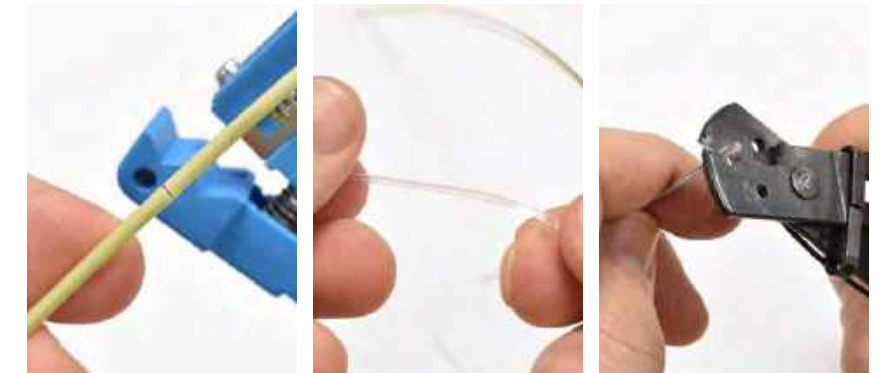
FIBRE TOOLS & ACCESSORIES

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

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



Fibre Handling Instructions
Scan QR code for Booklet



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

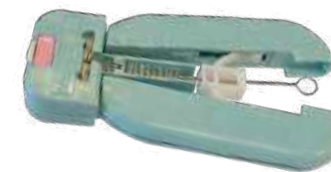


Complete Tool Box contains all the basic FibreFlow tools.



UK_DS_7833
Scan QR code for Datasheet

FIBREFAST SHEATH STRIPPER



FibreFast Sheath Stripper tool strips buffered fibre up to 2360µm and jacketed fibre up to 3.5mm quickly and easily.



UK_DS_76132
Scan QR code for Datasheet

MSAT FIBRE STRIPPING TOOL



MSAT Fibre Stripping Tool eliminates the struggle of stripping fibre by hand and allows easy access to the fibre 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

FIBRE STRIPPER



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



UK_DS_9342
Scan QR code for
Datasheet

STRIPPER FIBRE 10A



Stripper Fibre 10A is designed to strip 250-micron buffer from primary coated fibres.



UK_DS_7335
Scan QR code for
Datasheet

SHEATH STRIPPER 4.5-40MM



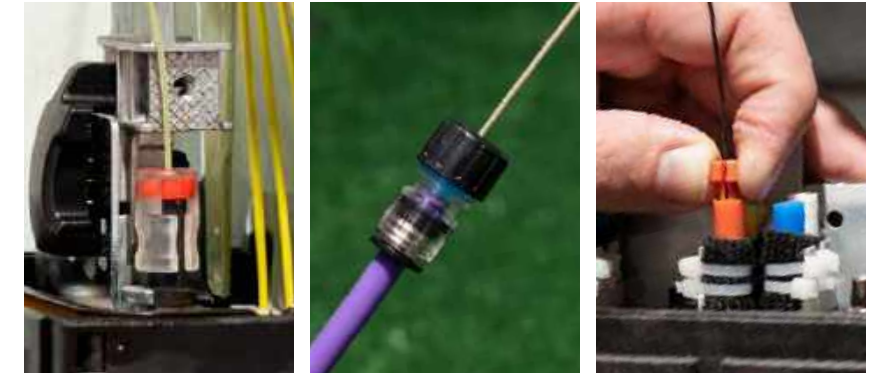
Sheath Stripper 4.5-40mm suitable for making circumference cuts on cable and microducts. The cutting blade is adjustable for depth with a 4.5 – 40mm capacity.



UK_DS_9728
Scan QR code for
Datasheet



The tools shown on the following pages perform best with FibreFlow Microducts. Tools to help make blowing easier and also to locate microducts underground.



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

PUSH-FIT CONNECTOR



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



UK_DS_SFCConn
Scan QR code for
Datasheet

REDUCER



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



UK_DS_SFCConn
Scan QR code for
Datasheet

END CAP



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



UK_DS_SFCConn
Scan QR code for
Datasheet

CONNECTORS, END CAPS, REDUCERS



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



UK_DS_JG
Pushfitconn
Scan QR code for
Datasheet

COMPRESSION CONNECTORS



Compression Connectors 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 tube locks, suitable for use with FibreFlow microduct, clear and rugged to ensure a seamless and airtight connection while blowing fibre 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

FIBRE & MICROCABLE SEAL



Fibre & 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 fibre 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 FibreFlow microduct to ensure a seamless and airtight connection while blowing fibre cable or microcable.



UK_DS_9916
Scan QR code for
Datasheet

ELF



Emtelle Fibre Lock System to eliminate lateral movement of terminated microcables due to vibration or thermal expansion / contraction of the duct system. Design specifically for Emtelle FibreFlow 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 and easy to install.



UK_DS_Cable_Clip
Scan QR code for
Datasheet



See [Page 61](#)
for Closure
Solutions

OVERHEAD FITTINGS

Emtelle have an extensive range of accessories that can be installed onto aerial networks for FTTX applications. It is essential 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
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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
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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
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BOLT 16 x 300MM



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



MHT2108
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Datasheet

FIBRE LOCKING MECHANISM



Fibre 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
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Datasheet

STEEL BANDING



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



MHT2108
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Datasheet

BUCKLES FOR BANDING (BIB20)



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



MHT2108
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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



Emtelle's fibre 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



TENSIONING TOOL BTS



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



MHT2108
Scan QR code for
Datasheet

F.I.G.



Fibre Installation Gun has been designed with the drop fibre 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
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Datasheet

See Page 43
for Pre-Fibred
Solutions



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
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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.



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Scan QR code for
Datasheet

PAN GUIDE



Pan Guide that can be easily attached to a FibreFlow 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 fibre before blowing starts. It guides the fibre through connectors and around sharp bends.



UK_DS_Blowing
Beads
Scan QR code for
Datasheet

INVERSION RING CLAMP



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



UK_DS_7788
Scan QR code for
Datasheet

INVERSION RING



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



UK_DS_7012
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LUBRICANT

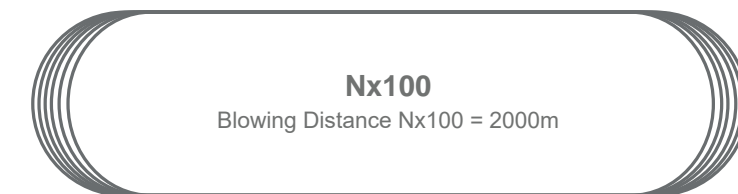


Lubricant reduces frictional drag during the blowing of small diameter fibre optic minicables into microducts.



UK_DS_70575
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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/fibre unit up to 3mm
6. Condux GS150 for fibre 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

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 fibre 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 fibre around the equator
- Innovative Emtelle solutions supplied to 31 out of the 37 OECD countries

Telecoms

From optical fibre 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 fibre 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

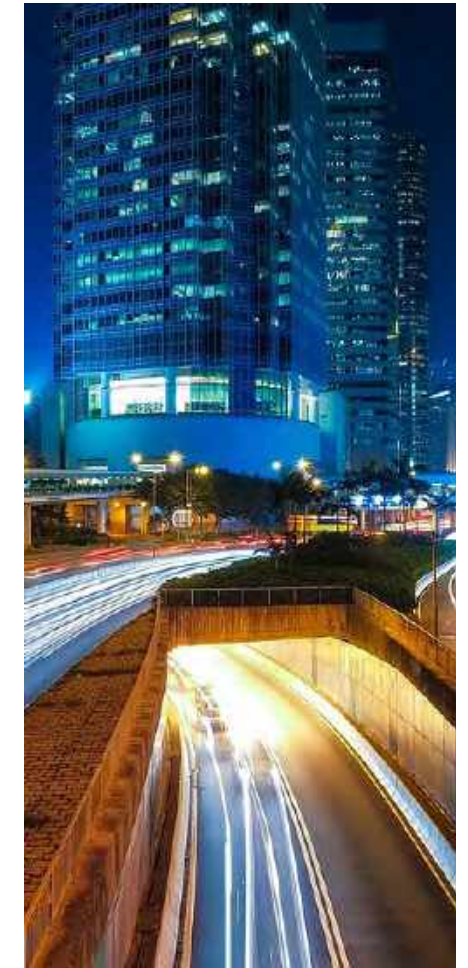
Emtelle has been key in helping enhance many of the existing standards for cables within the railway industry, developing new solutions for increased safety and performance along the way.

- 57 kilometres of cable was supplied by Emtelle for the Gotthard Tunnel, Switzerland
- 58 kilometres of fibre 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, fibre access is required in precise locations which could be any point on any street or side walk, meaning that you need to be able to dig down to access fibre virtually anywhere. Emtelle's FibreFlow Blown Fibre solutions give you this access – FibreFlow can be used for FTTH, 5G, IOT and possibly many more applications in the future.

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



HDD

Horizontal Directional Drilling (HDD) is a highly efficient and trenchless method for placing HDPE ducts and Emtelle's FibreFlow microduct bundles underground. It minimizes surface disruption and offers significant advantages over traditional trenching.

With minimal impact on the surrounding environment, HDD is ideal for urban and environmentally sensitive areas or where open-cut installations are impractical or undesirable. HDD starts with creating a precise pilot hole using specialized drilling equipment. This hole gradually expands through reaming, providing space for the fibre optic cable. The cable is then threaded through, establishing the underground network.

One of HDD's significant advantages is its speed. Significantly reducing installation time, making it perfect for projects with tight schedules. HDD is versatile and can handle various soil conditions and obstacles, such as utilities and water bodies.

- 1. Minimal Disruption to Traffic and Landscapes:** HDD excels at reducing disruption to road, river, or rail traffic, preserving landscapes, and minimizing the impact on existing surroundings.
- 2. Overcoming Obstacles:** HDD's versatility shines when faced with obstacles such as rivers, highways, railway lines, or trees. Its ability to navigate these challenges without requiring extensive excavation or disruption to these elements makes it a valuable asset in complex installation scenarios.
- 3. Extended Distances Without Pits:** HDD extends the reach of underground infrastructure by enabling distances of up to 500 meters without intermediate pits. This long-distance capability streamlines installation processes and allows for efficient network expansions.

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, fibre 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 fibre optic cables in the apartment not only increases the value of a property massively, but also the quality of life.

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

Microtrenching

Microtrenching is a cutting-edge method for fibre optic cable installation, involving the creation of a narrow trench, typically less than an inch wide and up to 12 inches deep. Its smaller trench size minimizes potential damage to existing infrastructure like gas lines and water mains, ensuring greater safety and reliability. This microtrench is then filled with a specialized grout material to support the cable. The advantages of microtrenching are compelling: it's remarkably swift, highly cost-effective, often costing less than half, and causes minimal disruption to the surrounding environment and traffic flow.

- 1. Remarkable Speed of Deployment:** Microtrenching is exceptionally swift, up to five times faster than traditional ducted methods.
- 2. Substantial Cost Savings:** Microtrenching is a highly cost-effective alternative, often costing less than half of traditional methods. Ideal for projects with budget constraints, providing efficient solutions without compromising quality.
- 3. Minimal Disruption to Traffic Flow:** The method's minimal trench size translates to minimal disruption to traffic flow, which is particularly valuable in urban environments, where road closures and traffic rerouting can be costly and inconvenient.

Moleploughing

The Moleplough technique represents a highly efficient and cost-effective approach to underground infrastructure installation. This method utilizes specialized machinery to plough a precise slot directly into the ground while continuously laying the microduct or subduct. It is particularly well-suited for environments with grass verges and soft ground, where traditional trenching may be challenging or impractical.

The Moleplough technique offers a trifecta of benefits: cost savings, speed, and reduced manpower requirements. Its ability to swiftly and efficiently lay microducts or subducts while minimizing disruptions makes it an attractive choice for various projects, ultimately ensuring the successful deployment of underground infrastructure.

- 1. Save money on traffic management and disruption.** Minimizing the need for extensive excavation and road closures helps project budgets go further.
- 2. Significantly faster to deploy than traditional trenching,** making it a preferred choice for projects with tight timelines or where minimizing disturbance to daily activities is paramount.
- 3. Reduced manpower.** Moleplough installation streamlines the process by combining ploughing and microduct/subduct installation into a single operation. One machine can plough and install the microduct or subduct simultaneously.

Open Trench

Open Trenching, a conventional method for microduct installation, involves excavating a trench to a predetermined depth. This trench provides a secure pathway for microducts and is often prepared with materials like sand or pea gravel to protect and support the microducts. Open Trenching offers project teams the advantage of a well-established and dependable method, ensuring precise microduct placement. Furthermore, it provides an opportunity for meticulous control over the reinstatement process, allowing for the seamless restoration of roads and footpaths to their original condition once the installation is complete.

- 1. Proven Traditional Method:** Open Trenching is a tried-and-true method with a long history of successful microduct installations. It offers reliability and familiarity, making it suitable for straightforward projects.
- 2. Control Over Reinstatement:** With Open Trenching, there is high control over the reinstatement process. This means that roads and footpaths can be restored to their original condition, minimizing disruptions to the surrounding area.
- 3. Once the open trench is backfilled,** the roads and footpaths are reinstated as before the project started.

Overhead

Overhead Installation represents a time-tested technique for supporting a blown fibre network system. This approach involves suspending fibre optic cables on telegraph poles or building facades, offering a practical and efficient means of carrying broadband connectivity.

Overhead installation provides a practical alternative for extending broadband connectivity, especially in areas with challenging terrain or where convenience and ease of maintenance are paramount. Its proven track record for security and reliability makes it a dependable choice for ensuring consistent and high-quality network performance.

- 1. Ease of Maintenance and Repair:** Overhead installations simplify maintenance and repair processes. With cables readily accessible above ground, technicians can swiftly address any issues, minimizing downtime and service disruptions.
- 2. Suitable for No-Dig/Difficult Terrain Environments:** Overhead installation is particularly valuable when traditional trenching or underground installations, such as rocky or inaccessible terrains, are challenging. It offers a viable solution to extend connectivity to remote or hard-to-reach areas.
- 3. Excellent Reputation for Security and Reliability:** Fiber optic cables installed above ground enjoy a strong reputation for security and reliability. They are less susceptible to damage from environmental factors, such as water infiltration, than underground installations.



We offer the following courses:

- FibreFlow Installation and Maintenance
- Design and Engineering of FibreFlow 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 fibre 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 fibre 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 fibre courses are the only ones of their kind that lead to BICSI re(qualification).

*subject to availability and minimum number.

Features

Learn the latest Fibre-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 practical 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 prestigious 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 concepts 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

Fibre bundles stripping and handling techniques

Blowing equipment and operation

Blowing techniques including point-to-point blows, centre blowing and onward blowing

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

Choosing maximum blowing distances for certain tube and fibre combinations

Installation of Emtelle approved closures

Design and Engineering

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

Learn the importance of product bend radius

Learn what effect water and ice have on the individual products and the air blown fibre 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 consisting of Tube Bundles, Fibre 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 blowing head parts to accommodate different mini cable sizes

Aerial Installation Training

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

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

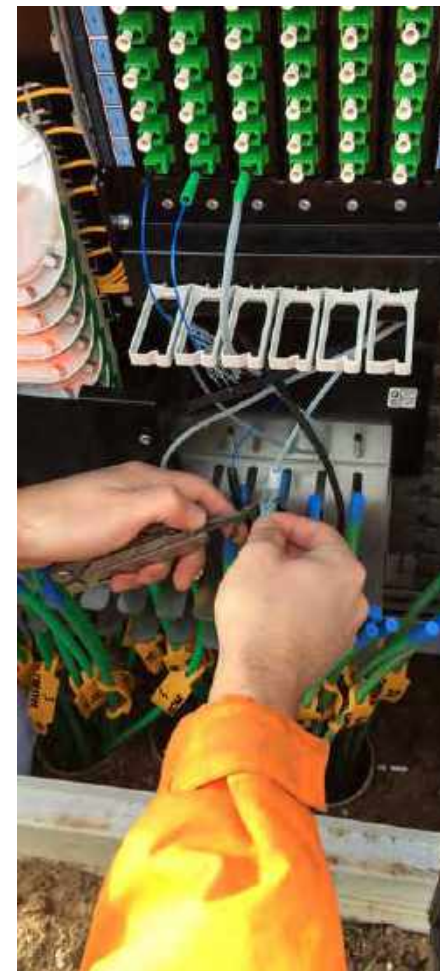
Handling, Deploying and Installing of aerial tight protected microduct products

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



Fibreflow 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 fibre 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 authorised 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.

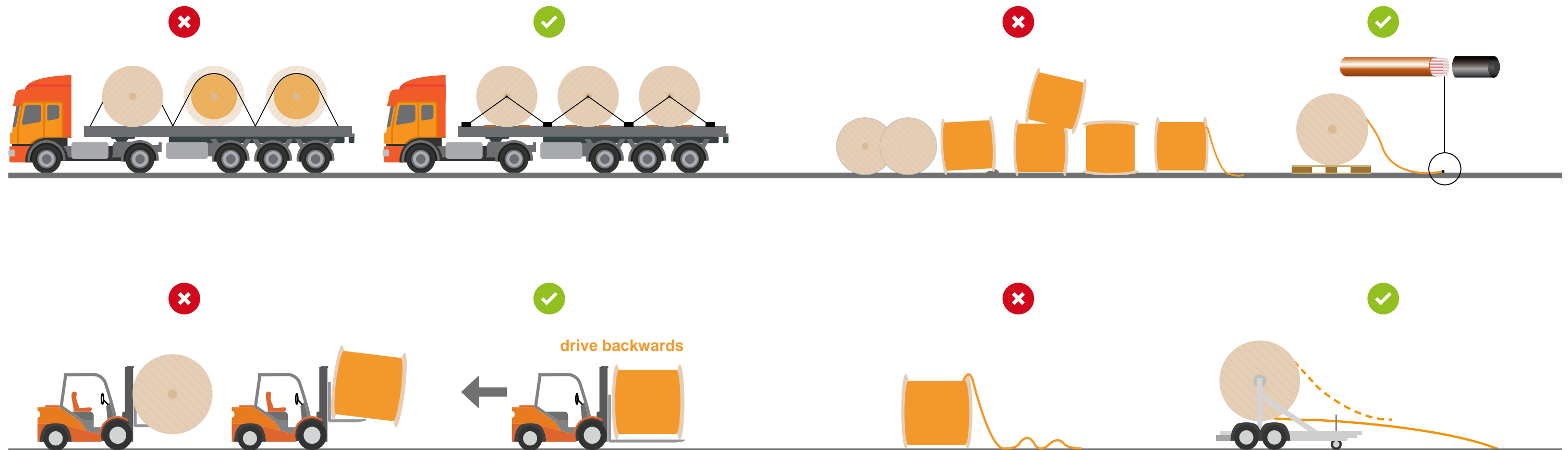
Tube bundles which are being batched down at the customer's premises should be rewound using a power pay-off. All free ends of tube bundles should be sealed using heat shrink end caps. These are available from Emtelle if required.

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.



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”

means either (i) Emtelle UK Limited, a company registered in Scotland (company number SC079486); or (ii) any named subsidiary or affiliate of Emtelle UK Limited, which is named in the Contract;

“Conditions”

means: (i) the Company's standard terms and conditions of purchase as set out in this document; and (ii) includes any special conditions agreed in writing between the Company and the Buyer;

“Contract”

means any contract between the Company and the Buyer for the sale and purchase of the Goods in accordance with the Conditions;

“Goods”

means any goods which the Company is to supply to the Buyer (including any of them or any part of them) as set out in the Order;

“Force Majeure Event”

means any event beyond the reasonable control of a party to a Contract which is unavoidable including, but not limited to; acts of god, war, fire, industrial disputes, flood, tempest, national emergencies, epidemics and pandemics, and the in difficulty obtaining materials except at unreasonably enhanced prices due to any of the foregoing reasons;

“Intellectual Property Rights”

means any intellectual property rights including patents, rights to inventions, trademarks, service marks, copyright and related rights, trade names and domain names, design rights and moral rights, whether registered or unregistered including all applications for and renewals or extensions of (and rights to apply for, renew or extend) such rights, together with any or all goodwill relating or attached thereto;

“Order”

means the Buyer's order for the supply of Goods, as may be set out in the Buyer's purchase order form, or in the Buyer's written acceptance of the Company's quotation.

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 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 Conditions and any representations about the Goods shall have no effect unless expressly agreed in writing and signed by an

authorised 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 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. A quotation shall be deemed to be withdrawn if not accepted by the Buyer within that 30-day period.

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 catalogues 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 quotation 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, regardless of whether such Goods are ready by the estimated delivery date or not.

4.3 If the quotation 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 (including a carrier of the Company's choice), 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 If the quotation provides for shipment of the Goods, the Buyer shall not be entitled to change the delivery location once the relevant Goods have left the Company's place of business / are in transit and, in such circumstances, the Buyer shall be fully and solely responsible for ensuring that such Goods are capable of being delivered to, and accepted at, such delivery location.

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 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 has not 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 reflect actual quantities delivered. 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 quotation 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:

4.12.1 In the case of extrusions at the time of delivery, by endorsement on the delivery documentation;

4.12.2 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 of invoice relating to such Goods.

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 offload such Goods at the delivery point) 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; and/or

7.1.3 Charge the Buyer for the attempted delivery of the Goods, in addition to applicable costs incurred by the Company to return the Goods to the Company and a reasonable re-stocking fee.

7.2 The Company is not responsible or liable in any manner for demurrage charges or additional costs which may result from delays in unloading the Goods.

8. Risk/Ownership

8.1 Risk of damage to or loss of Goods shall pass to the Buyer upon delivery in accordance with condition 4 above.

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 authorised 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 Subject to condition 9.2 below, the price for the Goods shall be the price stated in the Company's quotation 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 quotation 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 labour, 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. The Company may also increase the price of the Goods, upon reasonable prior written notice to the Buyer, to reflect any increase in the cost of the Goods that is due to (a) any request by the Buyer to change the delivery date(s), quantities or types of Goods ordered, or the specification of the Goods; (b) any delay caused by any instructions of the Buyer or failure of the Buyer to give the Company adequate or accurate information or instructions; (c) any other variation to the Order by the Buyer; or (d) any failure by the Buyer to perform their obligations under the Contract and/or Order.

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 price stated in the Company's quotation for the delivery of the Goods.

9.4 All payments shall be made to the Company in the United Kingdom in the currency stipulated in the Company's quotation to the Buyer. All sales of product are subject to Emtelle's terms and conditions of sale only, which can be found on Emtelle's website. This document is protected by copyright (c) Emtelle 2022. The products depicted are protected by intellectual property rights. Any unauthorised copying of this document or of our products is prohibited and Emtelle will take action to prevent any infringement of its rights and to claim damages for the loss that it suffers.

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 above the Bank of England's base rate (from time to time) 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

10.4 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 Company 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/test procedure 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; or

10.4.4 The defect arises as a result of fair wear and tear, wilful damage, negligence, or abnormal storage or working conditions; or

10.4.5 The Goods differ from their description or specification as a result of changes made to ensure they comply with applicable statutory or regulatory requirements.

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.

10.8 The terms implied by sections 13 to 15 of the Sale of Goods Act 1979 are, to the fullest extent permitted by law, excluded from the Contract.

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 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 Conditions excludes or limits the liability of the Company for death or personal injury caused by the Company's negligence, fraud or fraudulent misrepresentation, or for any other head of liability which cannot be lawfully limited or excluded under English Law.

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

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 aggregate amount of the price of the Goods covered by such Contract. 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; or
- (VI) loss of agreements or contracts,

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 labour for off-loading or loading of Goods (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 Conditions 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 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 suffered or incurred by the Company in connection with any claim made against the Company for actual or alleged infringement of a third party's Intellectual Property Rights arising out of or in connection to any work done in accordance with specifications, drawings or special requirements of the Buyer.

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. Performance of Contract

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

Neither party shall be liable for any failure or delay in performing its obligations under the Contract to the extent that such failure or delay is caused by a Force Majeure Event. The time for performance of such obligations shall be extended accordingly. 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 Force Majeure Event and if such party notifies the existence of such Force Majeure Event to the other party in writing. If, because of such Force Majeure Event, 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 The Buyer and Company acknowledge and agree that Company owns and will retain all Intellectual Property Rights relating to the Goods.

16.2 The Buyer acknowledges that the Company does not permit, and indeed expressly prohibits, the Buyer and (if applicable) each subsequent purchaser of the Goods (whether purchasing directly or indirectly from the Buyer and regardless of the degree removed from this Contract) from using the name "Emtelle", or any other Intellectual Property Rights of the Company. Accordingly the Buyer undertakes that:

(i) It shall not use, or cause or permit a third party to use, any of the Company's Intellectual Property Rights in breach of the foregoing prohibition; and

(ii) If it sells or otherwise transfers all or any portion of the Goods to a third party, then it shall include in its contract with the third party purchaser an undertaking similar to the undertakings given by the Buyer under this condition 16.2 and an express provision that the Company can rely on and enforce such undertaking.

16.3 The Buyer shall not at any time attack, either directly or indirectly, the title, validity, or any of the 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.

16.4 The 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.

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

16.6 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 & Suspension

17.1 Without limiting its other rights or remedies, the Company may terminate this Contract with immediate effect by giving written notice to the Buyer if:

(i) The Buyer breaches any of the provisions set forth in these terms and conditions or under the Contract and (if such a breach is remedial) fails to remedy that breach within 21 days of being notified in writing to do so by the Company;

(ii) Any insolvency, bankruptcy or similar proceedings are commenced by or against the Buyer, including any assignment by Buyer for the benefit of creditors;

(iii) The Buyer suspends, threatens to suspend, ceases or threatens to cease to carry on all or a substantial part of its business; or

(iv) The Buyer's financial position deteriorates so far as to reasonably justify the opinion that its ability to give effect to the terms of the Contract is in jeopardy

17.2 Without limiting its other rights or remedies, the Company may suspend provision of the Goods under the Contract or any other contract between the Company and the Buyer if the Buyer becomes subject to any of the events listed in condition 17.1(ii), or the Company reasonably believes that the Buyer is about to become subject to any of them, or if the Buyer fails to pay any amount due under this Contract on the due date for payment.

17.3 Without limiting its other rights or remedies, the Company may terminate the Contract with immediate effect by giving written notice to the Buyer if the Buyer fails to pay any amount due under the Contract on the due date for payment.

17.4 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.

17.5 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.

17.6 On termination of the Contract for any reason the Buyer shall immediately pay to the Company all of the Company's outstanding unpaid invoices and interest and, in respect of the Goods supplied but for which no invoice has been submitted, the Company shall submit an invoice, which shall be payable by the Buyer immediately on receipt.

17.7 Any provision of the Contract and/or these Conditions that expressly or by implication is intended to come into or continue in force on or after termination of the Contract shall remain in full force and effect.

18. Confidentiality

18.1 Each party undertakes that it shall not at any time disclose to any person any confidential information concerning the business, assets, affairs, customers, clients or suppliers of the other party, except as permitted by condition 18.2.

18.2 Each party may disclose the other party's confidential information:

(i) To its employees, officers, representatives, contractors, sub-contractors or advisers who need to know such information for the purposes of exercising the party's rights or carrying out its obligations under the Contract. Each party shall ensure that its employees, officers, representatives, contractors, subcontractors or advisers to whom it discloses the other party's confidential information comply with this condition 18; and

(ii) As may be required by law, a court of competent jurisdiction or any governmental or regulatory authority.

18.3 Neither party shall use the other party's confidential information for any purpose other than to exercise its rights and perform its obligations under or in connection with the Contract.

19. General

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

19.2 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.

19.3 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.

19.4 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.

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

19.6 This Contract is personal to the Buyer who may

not assign, novate, license or subcontract all or any of its rights or obligations under this Contract without the Company's prior written consent.

19.7 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.

19.8 The formation, construction, performance, validity and all aspects of this Contract are governed by the laws of England and Wales. .pro

19.9 The Contract constitutes the entire agreement between the parties.

19.10 Each party acknowledges that in entering into the Contract it does not rely on any statement, representation, assurance or warranty (whether made innocently or negligently) that is not set out in the Contract. Each party agrees that it shall have no claim for innocent or negligent misrepresentation or negligent misstatement based on any statement in the Contract.

19.11 No variation of this Contract shall be effective unless it is in writing and signed by the parties (or their authorised representatives).



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