EMTELLE

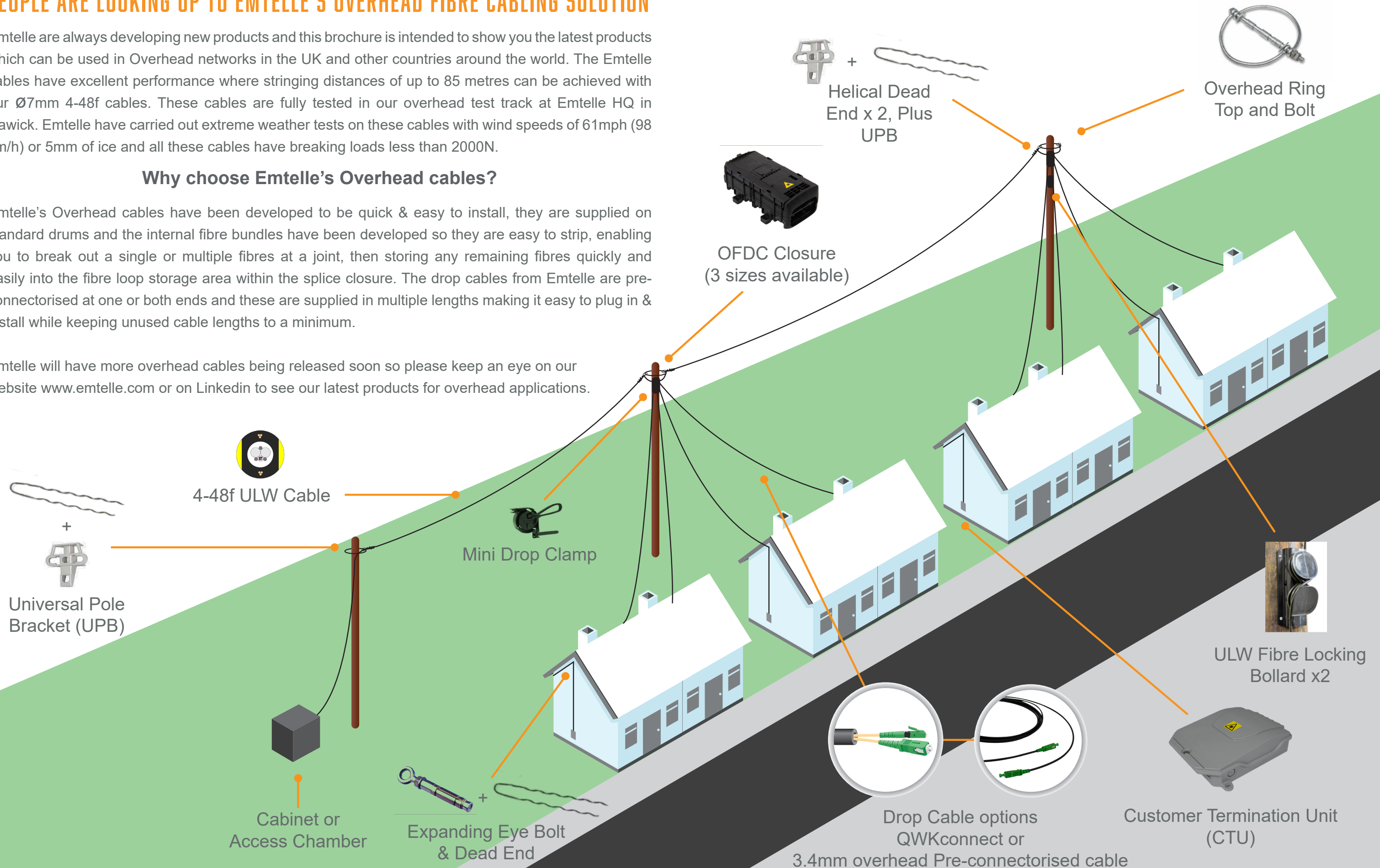# OVERHEAD NETWORK SOLUTIONS FOR FIBRE CABLE
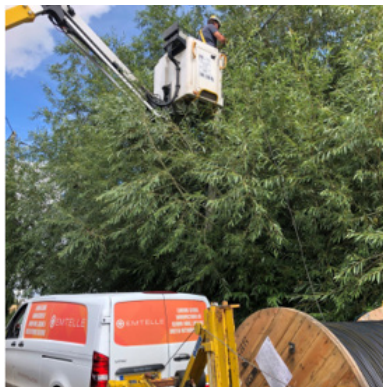
CONTENT

FibreFlow UP

PEOPLE ARE LOOKING UP TO EMTELLE'S OVERHEAD FIBRE CABLING SOLUTION

Emtelle are always developing new products and this brochure is intended to show you the latest products which can be used in Overhead networks in the UK and other countries around the world. The Emtelle cables have excellent performance where stringing distances of up to 85 metres can be achieved with our Ø7mm 4-48f cables. These cables are fully tested in our overhead test track at Emtelle HQ in Hawick. Emtelle have carried out extreme weather tests on these cables with wind speeds of 61mph (98 km/h) or 5mm of ice and all these cables have breaking loads less than 2000N.

Why choose Emtelle's Overhead cables?

Emtelle's Overhead cables have been developed to be quick & easy to install, they are supplied on standard drums and the internal fibre bundles have been developed so they are easy to strip, enabling you to break out a single or multiple fibres at a joint, then storing any remaining fibres quickly and easily into the fibre loop storage area within the splice closure. The drop cables from Emtelle are pre-connectorised at one or both ends and these are supplied in multiple lengths making it easy to plug in & install while keeping unused cable lengths to a minimum.
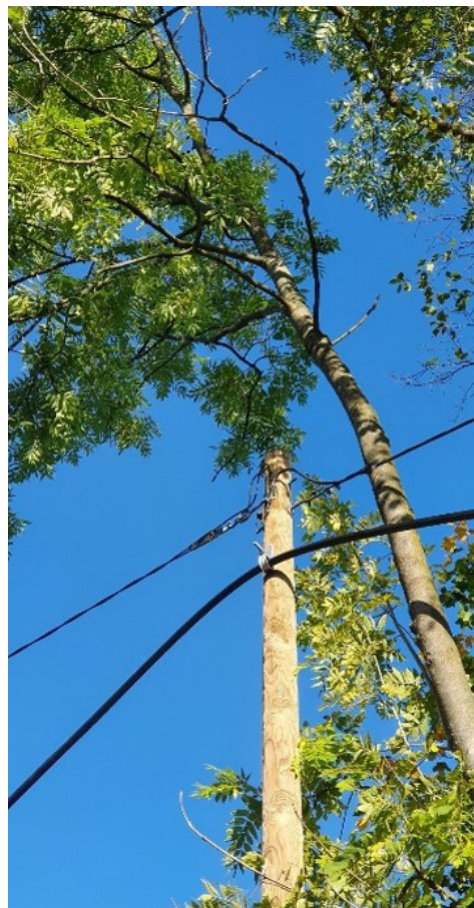
Emtelle will have more overhead cables being released soon so please keep an eye on our website www.emtelle.com or on Linkedin to see our latest products for overhead applications.

Helical Dead End x 2, Plus UPB

Overhead Ring Top and Bolt

OFDC Closure (3 sizes available)

4-48f ULW Cable

+

Universal Pole Bracket (UPB)

Mini Drop Clamp

ULW Fibre Locking Bollard x2

Cabinet or Access Chamber

Expanding Eye Bolt & Dead End

Drop Cable options QWKconnect or 3.4mm overhead Pre-connectorised cable

Customer Termination Unit (CTU)

GLOBAL MANUFACTURER OF PRE-CONNECTORISED, BLOWN FIBRE CABLE & DUCTED NETWORK SOLUTIONS   GLOBAL MANUFACTURER OF PRE-CONNECTORISED, BLOWN FIBRE CABLE & DUCTED NETWORK SOLUTIONS

4   5

SOLUTIONS

EMTELLE'S OVERHEAD NETWORK SOLUTIONS

✳ SUITABLE FOR COST-EFFECTIVE EXPANSION OF LOCAL CONNECTIONS

✳ MAX COST REDUCTION COMPARED TO CONVENTIONAL CIVIL ENGINEERING

✳ USED IN AREAS WHERE CIVIL ENGINEERING IS NOT FEASIBLE:
FORESTS, HILLS, MOUNTAINS, NATURE / WATER PROTECTION AREAS

✳ USE IN VARIOUS INFRASTRUCTURES STEEL, CONCRETE & WOODEN POLES

✳ IDEALLY SUITED FOR CONNECTING ISOLATED, RURAL COURTYARDS
WHERE CIVIL ENGINEERING IS NOT AN OPTION

Emtelle has a large range of solutions that can be installed onto Overhead Pole networks for FTTX applications. It is important that the correct cable, closures and accessories are chosen for your network deployment. Emtelle looks at a typical installation scenario that is used for FTTH deployments in the UK.

As well as choosing the correct materials, it is of vital importance that all cables and closures used are approved by the network owner / operator and that all installation teams are fully trained and accredited to work on overhead network infrastructure as well as compliant to the relevant health & safety requirement for working at heights.

Emtelle's Training Partner CTTS are at hand to assist in all your training needs to ensure you have a safe and successful cable installation in Overhead Networks.

Our partnership with CTTS is the perfect solution to your FTTX needs. Optimise the performance of your network with our expertise in developing innovative solutions and CTTS' experience in delivering all aspects of cabling and telecoms technology training.

Training packages cover all the latest fibre, ducting and cabling solutions worldwide, including Emtelle solution-specific training. A wide range of PIA-specific courses is also available which incorporate over 25 years experience of supplying training packages to major network operators. Whether you are an operator or installation contractor, we will design a fully bespoke package to meet your individual needs:

✿ Installation and network maintenance
✳ Compliance with industry regulations
✿ Refresher training for specific needs
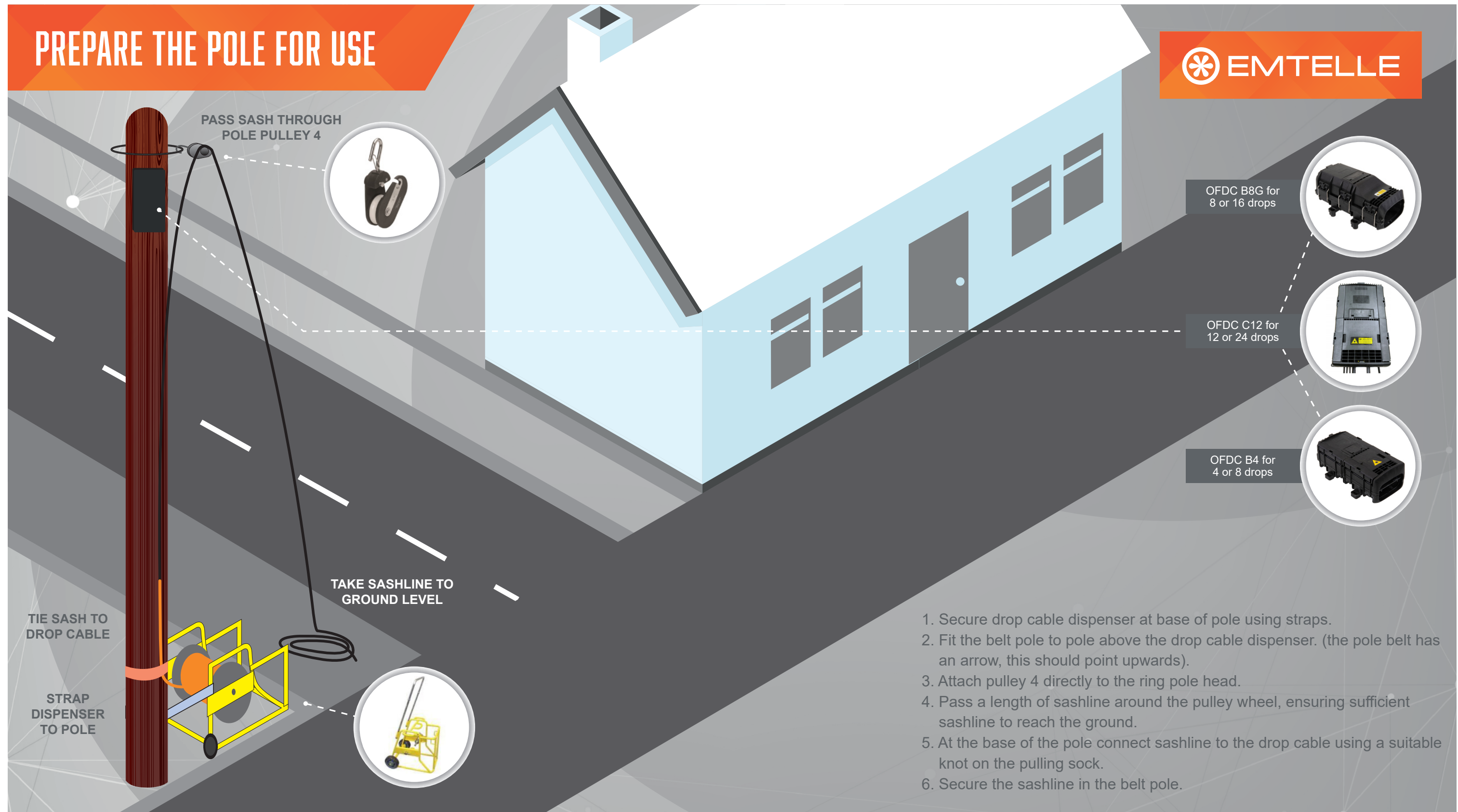✳ Tailored for technical, sales or administration personnel

✿ ctts
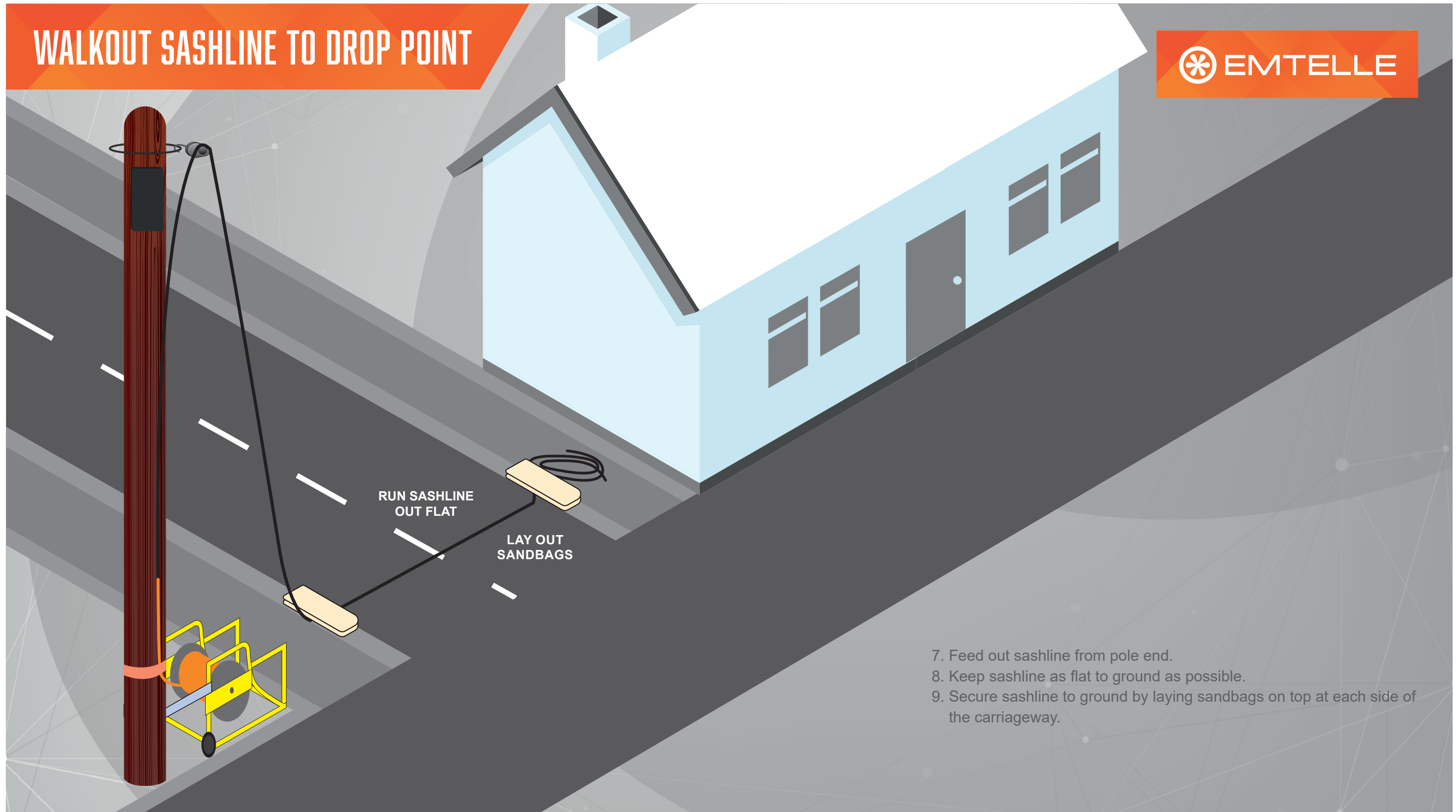Cable Telecommunications
Training Services Ltd

INSTALLATION GUIDELINES

PREPARE THE POLE FOR USE

⁕ EMTELLE

PASS SASH THROUGH POLE PULLEY 4

TAKE SASHLINE TO GROUND LEVEL

TIE SASH TO DROP CABLE

STRAP DISPENSER TO POLE

OFDC B8G for 8 or 16 drops

OFDC C12 for 12 or 24 drops

OFDC B4 for 4 or 8 drops

1. Secure drop cable dispenser at base of pole using straps.
2. Fit the belt pole to pole above the drop cable dispenser. (the pole belt has an arrow, this should point upwards).
3. Attach pulley 4 directly to the ring pole head.
4. Pass a length of sashline around the pulley wheel, ensuring sufficient sashline to reach the ground.
5. At the base of the pole connect sashline to the drop cable using a suitable knot on the pulling sock.
6. Secure the sashline in the belt pole.

INSTALLATION GUIDELINES

WALKOUT SASHLINE TO DROP POINT

✳ EMTELLE

RUN SASHLINE OUT FLAT

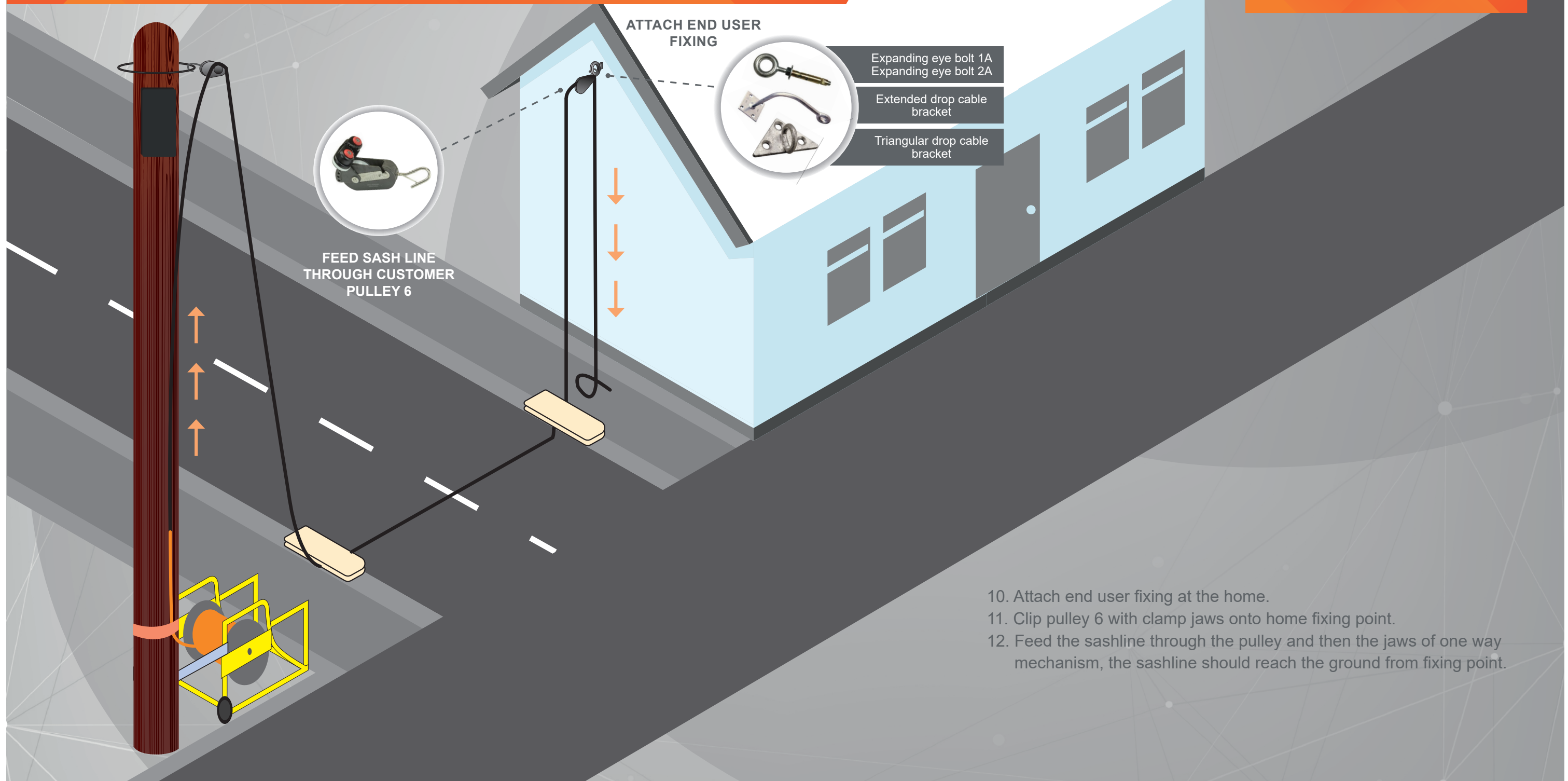**LAY OUT SANDBAGS**

7. Feed out sashline from pole end.
8. Keep sashline as flat to ground as possible.
9. Secure sashline to ground by laying sandbags on top at each side of the carriageway.
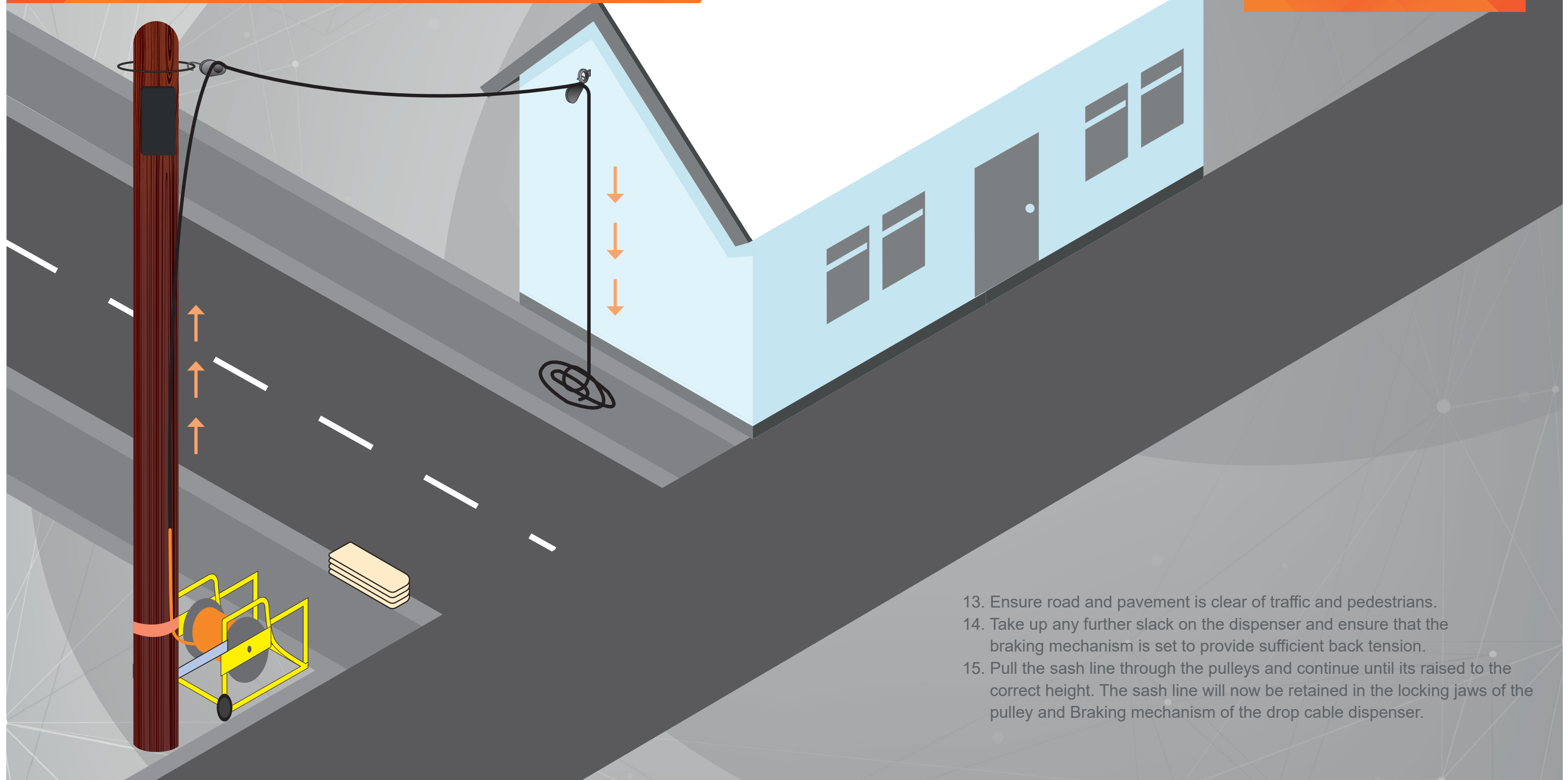
INSTALLATION GUIDELINES

SASHLINE, PULLEY AND DROP CABLE AT END USER'S PREMISES

✱ EMTELLE

ATTACH END USER FIXING

Expanding eye bolt 1A
Expanding eye bolt 2A

Extended drop cable bracket

Triangular drop cable bracket

FEED SASH LINE THROUGH CUSTOMER PULLEY 6

10. Attach end user fixing at the home.
11. Clip pulley 6 with clamp jaws onto home fixing point.
12. Feed the sashline through the pulley and then the jaws of one way mechanism, the sashline should reach the ground from fixing point.

INSTALLATION GUIDELINES
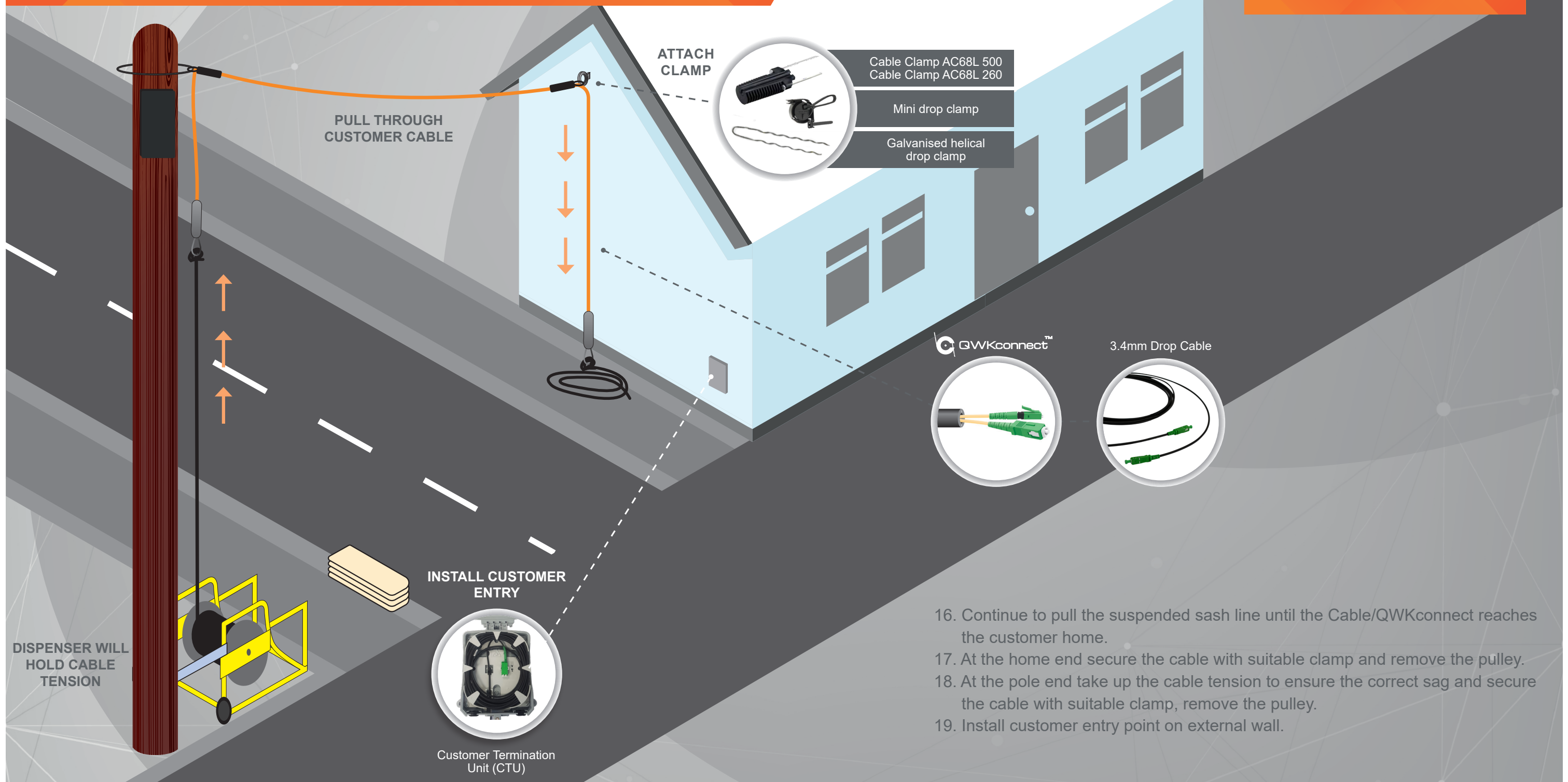
PULL/LIFT SASH LINE FROM CUSTOMER PREMISES

13. Ensure road and pavement is clear of traffic and pedestrians.
14. Take up any further slack on the dispenser and ensure that the braking mechanism is set to provide sufficient back tension.
15. Pull the sash line through the pulleys and continue until its raised to the correct height. The sash line will now be retained in the locking jaws of the pulley and Braking mechanism of the drop cable dispenser.
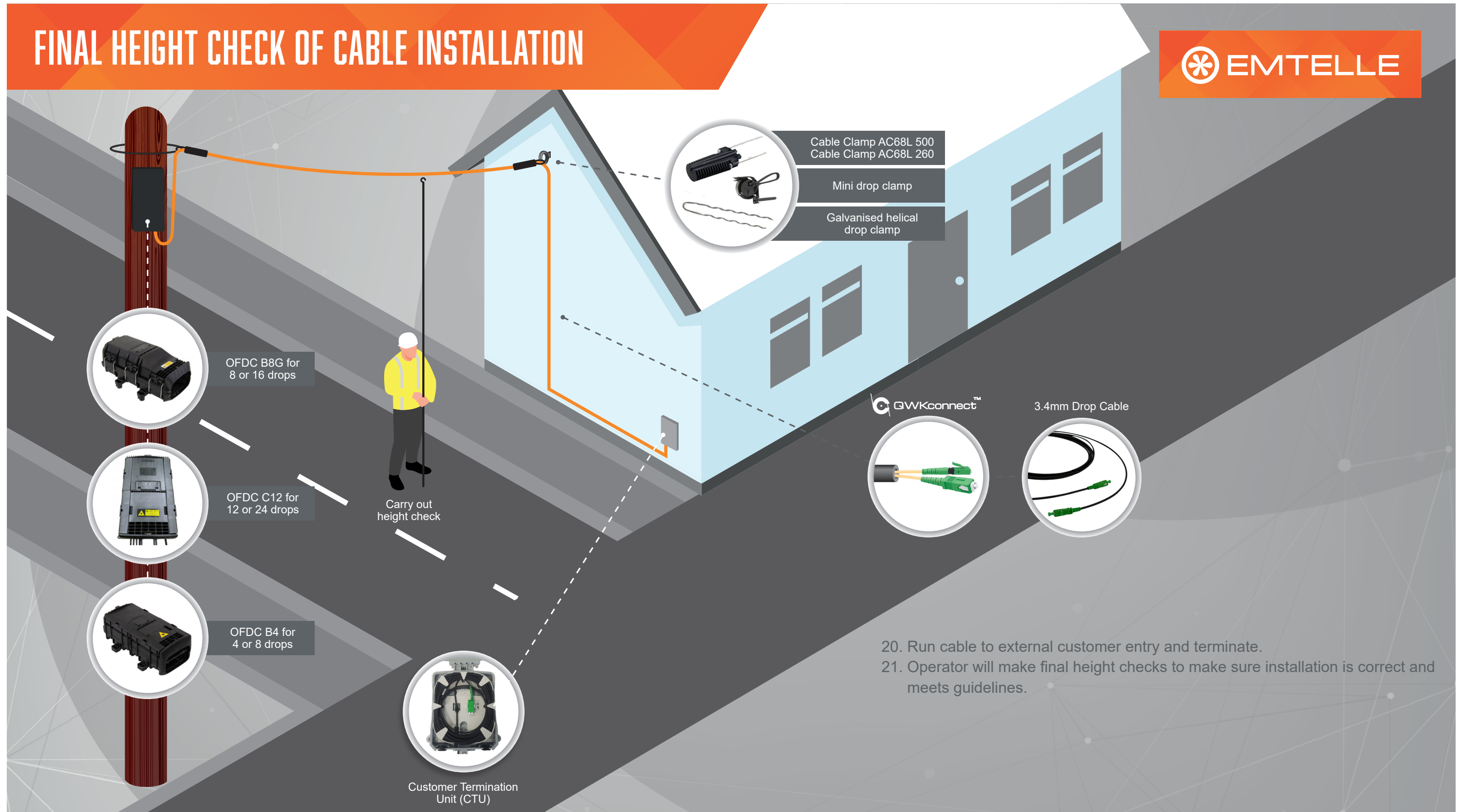
INSTALLATION GUIDELINES

PULL/LIFT SASH LINE FROM CUSTOMER PREMISES PT2

ATTACH CLAMP

PULL THROUGH CUSTOMER CABLE

Cable Clamp AC68L 500
Cable Clamp AC68L 260

Mini drop clamp

Galvanised helical drop clamp

QWKconnect™

3.4mm Drop Cable

INSTALL CUSTOMER ENTRY

DISPENSER WILL HOLD CABLE TENSION

Customer Termination Unit (CTU)

16. Continue to pull the suspended sash line until the Cable/QWKconnect reaches the customer home.
17. At the home end secure the cable with suitable clamp and remove the pulley.
18. At the pole end take up the cable tension to ensure the correct sag and secure the cable with suitable clamp, remove the pulley.
19. Install customer entry point on external wall.

INSTALLATION GUIDELINES

FINAL HEIGHT CHECK OF CABLE INSTALLATION

✳ EMTELLE

Cable Clamp AC68L 500
Cable Clamp AC68L 260

Mini drop clamp

Galvanised helical
drop clamp

OFDC B8G for
8 or 16 drops

OFDC C12 for
12 or 24 drops

Carry out
height check

OFDC B4 for
4 or 8 drops

QWKconnect™   3.4mm Drop Cable

Customer Termination
Unit (CTU)

20. Run cable to external customer entry and terminate.
21. Operator will make final height checks to make sure installation is correct and meets guidelines.

DISTRIBUTION/DROP CLOSURES - OVERVIEW

The OFDC range is the environmentally sealed enclosure for fibre management system that provides the function of splicing patching and passive component integration in the external network.

• Advanced gel sealing technology ensures fast and easy field handling without a need for special tools
• Individual access to drop cable connection and separate zones for looped cable storage for cable types
• Compact and modular design suited for wraparound drop cable installation, enabling faster deployments
• Easy pass-through cabling and integration of optical components, even at later deployment stages

Distribution/Drop closures - Details

Splice capacity OFDC B8G
72 splices
For repair up to 96 splices

Micro duct and cable diameters
2 main cables: 11.5-15 mm
2 Branch cables: 8-11 mm
8 drop cables: 0-6mm SC/APC
16 drop cable LC/APC

Splice capacity OFDC C12
96 splices
For repair up to 96 splices

Micro duct and cable diameters
Feeder cable 5.5-17.5 mm
12 Flat 8.0 x 4.5 mm
12 Round 1.5–6mm SC/APC
24 Round 2.0–6mm LC/APC

Splice capacity OFDC A4
24 splices
For repair up to 48 splices

Micro duct and cable diameters
Feeder cables 4.5-12 mm
4 drop micro ducts 0-6mm SC/APC
8 drop micro ducts 0-6mm LC/APC

# CUSTOMER TERMINATION UNIT - CTU

Product Description

The CO-WMFE-FTTX is a wall mounted fibre management system for any broadband network architecture which uses optical fibre to provide all or part of the local loop used for last mile telecommunications. The 1 door lift off opening provides the installer to access all the internal components. The door is lockable using a single screw.

Features & Benefits

• Compact and modular wall-mountable customer termination box
• Fibre splices can be managed in single circuits using fibre organizing systems
• Cable coming into the enclosure are hidden by protective tubing which is secured to the external wall
• Three fixing holes located on the box so it can be secured tightly to the external wall
• Splicing and Pre-Connectorised options available
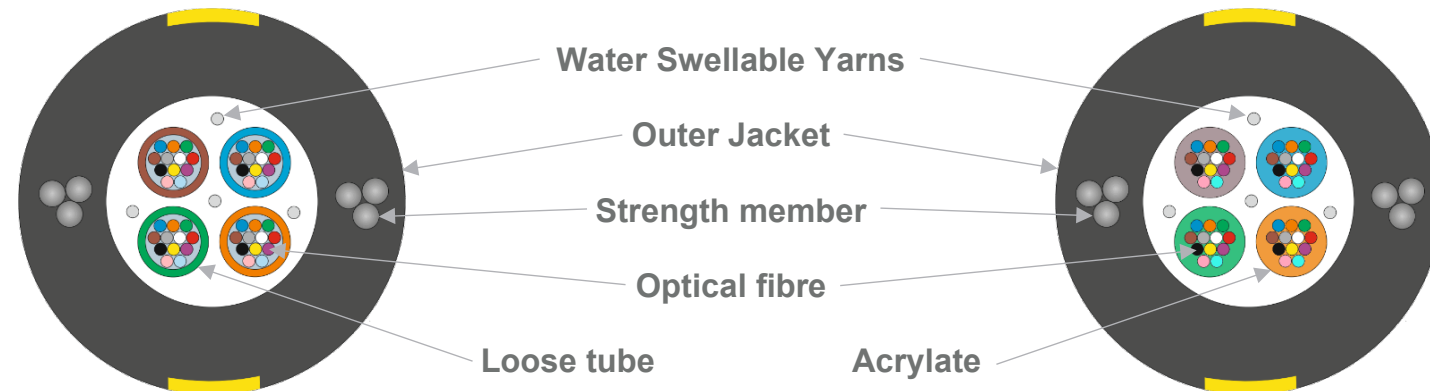
Technical Information

• Height cover - 217mm
• Width cover - 155mm
• Height box plus cable cover cap - 254mm
• Depth - 53mm
• Width box - 146mm
• Width box plus fixings - 177mm
• Height box - 181mm
• Fixing hole - 161mm
• Fixing hole vertically - 168mm
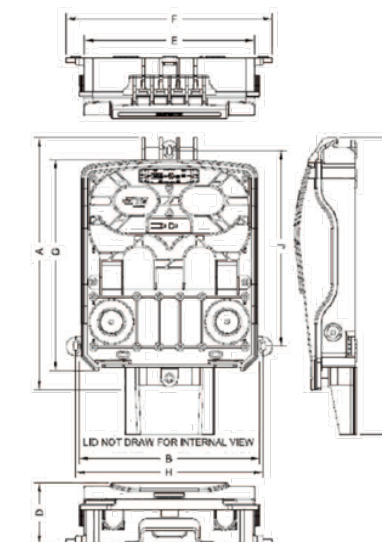
48F ULW DISTRIBUTION CABLE 7MM

Product Description

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

Water Swellable Yarns
Outer Jacket
Strength member
Optical fibre
Loose tube
Acrylate

Easy Strip Loose tube

Easily remove the loose tube by applying tension on it. Jacket peels away for easy stripping and midspan access.
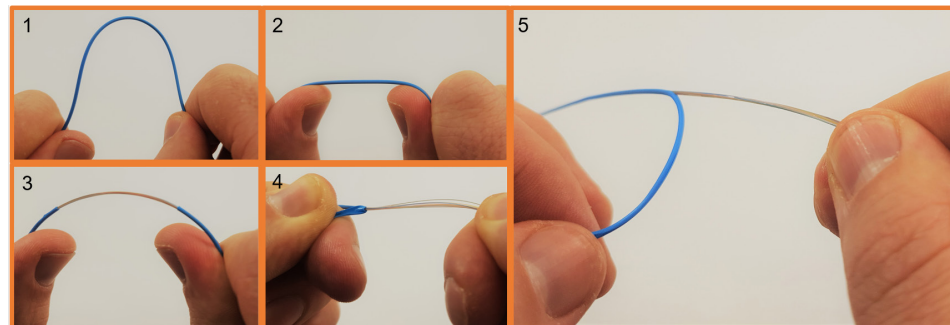
### Technical Information

Jacket details:	Black UV resistant with 2 yellow stripes
Outer Diameter:	7mm
Span distance:	Up to 80m (subject to environmental loading conditions)
Fiber type:	Single Mode G.652D
Breaking load:	<2000N
Fibre count:	4 – 48F
Operating Temperature:	-30˚C tot +70˚C

AERIAL DROP CABLE 3.4MM

Product Description

A small, lightweight cable which can be used for final FTTX aerial or façade connections. This cable solution can be pre-connectorized, reducing splicing costs and installation time as well as simplifying the installation.

Outer Jacket
Aramid yarn
Optical fibre
Semi-tight buffer
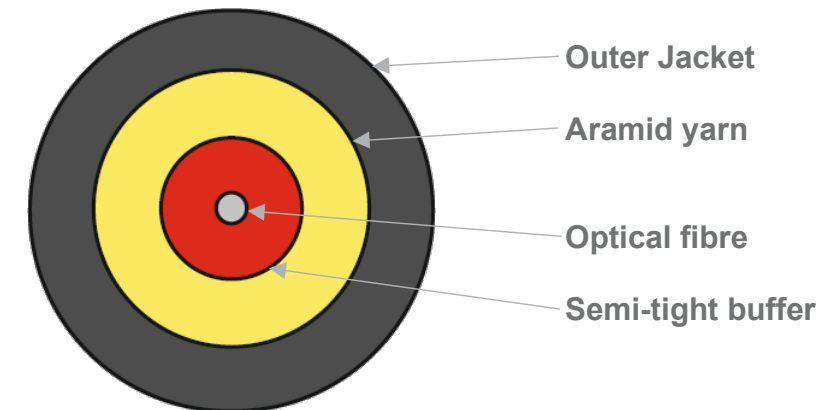
Features & Benefits

• UV resistant outer sheath --> suitable for installation outdoors
• Small, lightweight, and flexible
• Easy strippable gel free tight buffer tube
• Fast and easy installation
• Designed to be secured overhead between pole to the customer drop location
• Expected lifetime of 20 years

Technical Information

Jacket details:	Black UV resistant
Outer diameter:	3.4mm
Span distance:	Up to 80m (subject to environmental loading conditions)
Fibre type:	Single Mode G.657A2
Breaking load:	<2000N
Operating Temperature:	-10˚C tot +50˚C

QWKCONNECT - PRE-CONNECTORISED

Product Description

QWKconnect - Emtelle's per-connectorised fibre optical cable solutions saves customers & installers time and installation cost by eliminating the need for specialist training or tool by making the connection Plug & Play.

Features & Benefits

- Supplied on small cardboard reel with test certificate
- No splicing required – just Plug and Play
- Reduced skill set & training required for the install
- Massively reduced capex for installation equipment
- Store the excess fibre in the Customer Termination Unit (CTU)
- Build the connector in less than 30 seconds
- 50m span distance, up to 80km/h wind speed, 20 degrees temperature change

Technical Information

- Lengths from 25m to 500m in 25m increments.
- SC or LC APC connectors available

QWKconnect™

Parameter	Requirement			
	SC/UPC	SC/APC 8°	LC/UPC	LC/APC 8°
Specification	IEC 60874	IEC 60874	IEC 61754	IEC 61754
Test methods	IEC 61300	IEC 61300	IEC 61300	IEC 61300
Connector body colour	Blue	Green	Blue	Green
Connector boot colour	Blue	Green	Blue	Green
Insertion loss, typical (dB)	0.20	0.20	0.20	0.20
Insertion loss, maximum (dB)	0.30	0.30	0.30	0.30
Return loss, typical (dB)	52	62	52	62
Return loss, minimum (dB)	50	60	50	60
Temperature, in operation (°C)	- 40 ~ + 75			
Temperature, storage (°C)	- 55 ~ + 85			

EMTELLE OVERHEAD ACCESSORIES

Clamps, House fixings, Pole fixings and banding

The following fittings are used to install Emtelle aerial/overhead blown fibre cables to poles. For methods of use, consult Emtelle training department and manuals.

Cable Clamp AC68L 260. Product code 9248
Cable Clamp AC68L 500. Product code 71980

Wedge type clamp used for 7mm aerial fibre optic cables
AC68L260 used from pole to house
AC68L500 used for support and tension of the main route

Galvanised helical drop clamp. Product code 75013

Galvanized steel rods with a gritted length are helically formed to create the GSDE product range. The spiral dead-end is delivered with a colour code on both ends and an identification label.

Mini drop clamp. Product 75467

The FTTH drop clamp mini is used for the dead-ending of 3 to 4mm aerial round drop cables with flexible insulation sheath where spans do not exceed 70 m.

Triangular fixing bracket. Product code 75362

These brackets are primarily used where the wooden front/soffit is the only suitable place for the bracket to be attached. In this case it is advisable that screws of a substantial length are used

Expanding bolt 2A. Product code 75118

Overhead single point fixing bolt.

EMTELLE OVERHEAD ACCESSORIES

Clamps, House fixings, Pole fixings and banding

Expanding bolt 1A. Product code 75117

Overhead single point fixing bolt.

Extended drop cable bracket. Product code 74644

Designed to attach a drop wire clamp to timber or brickwork at end users' premises where additional height clearance is required e.g. a Bungalow.

Universal Pole Bracket UPB. Product code 9246

A galvanized bracket suitable for anchoring cable clamps and twist grips holding overhead fibre optic cables

Bolt 16x300mm. Product code 9253

Fixing through bolt for wooden poles

Overhead ring top with fixing bolt. Product 74422

To support aerial clamps on the telegraph pole

Fibre Locking mechanism. Product code 74523

Used in conjunction with Emtelle Ultra Lightweight fibre cable.

EMTELLE OVERHEAD ACCESSORIES

Clamps, House fixings, Pole fixings and banding

Steel banding. Product code 9254 (SS201)
Steel banding. Product code 72887 (SS304)

Steel banding to mount pole furniture to all types of pole.

Buckles for steel banding BIB20. Product code 9255

Buckles for securing the steel banding to the pole, secured with tensioning tool.

Steel banding tensioning tool. Product code 9256

Tool suitable for tensioning the steel banding.

FibreFlow UP

✳ EMTELLE

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SYSTEM CERTIFICATION — ISO 9001 — SGS
SYSTEM CERTIFICATION — ISO 45001 — SGS
SYSTEM CERTIFICATION — ISO 14001 — SGS
SYSTEM CERTIFICATION — ISO 50001 — SGS

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