

FTTx Microtubing Systems

Cable Protection Systems



RADIUS
Systems

Pioneers in PE Pipe Technologies

About us



Radius Systems has manufactured and supplied polyethylene (PE) pipe and fittings to major utilities around the world since 1969 and telecoms companies since 1988

With four manufacturing facilities in the UK, a joint venture in Abu Dhabi, a global distribution network and over 500 employees, we are proud to supply over 100 countries.

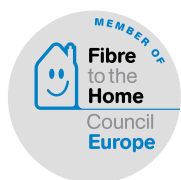
We have operated in telecoms since 1988 and Fibre-to-the-x (FTTx) since 2002 and we have a dedicated telecoms centre of excellence where our resident team of expert engineers provide state of the art technology.

We supply many of the world's top telecom operators, integrators and installers. Our product offering includes traditional Telecoms Ducting such as HDPE low friction Sub-Duct, HDPE Twin Wall and uPVC as well FTTx Microtubing systems for next generation networks.

In addition our modular underground Access Chambers are suitable for use across various utilities and are ideal for telecoms applications.



We have been connecting the world with high quality telecoms and FTTx products for over 23 years. **Please contact us to find out how we can help you.**



BS OHSAS 18001:2007
ISO 9001:2008
ISO 14001



INVESTOR IN PEOPLE

Quality

We are committed to the highest levels of quality for the design, manufacturing, performance, durability and delivery of our products and we aim to provide outstanding service quality.

We source the best materials and we use modern and efficient manufacturing, inspection and testing methods and maintain an effective Quality Management System in the form of ISO 9001:2008.

Throughout our workforce, we emphasise and communicate the importance of customer care, timeliness of deliveries, courtesy, consistency, accuracy and fast response to all areas of service.

We promote a customer focused culture that is underpinned by the encouragement of all our employees' to be actively involved in the continual improvement of our products, systems and processes.



Technical Support

We take pride in developing innovative yet cost effective solutions for all tubing requirements and having long-lasting partnerships.

We strive to work closely with our partners in terms of technical support, training, product development and supply chain services to ensure that we provide the best tailored solutions.

Our expert team of engineers offer a design and development service for new products and the optimisation of existing products and we provide full technical field service backup for our products.



Environment

As a manufacturer we take our environmental responsibilities very seriously and we work in-house and in partnership with suppliers to reduce carbon emissions across the whole supply chain.

In addition to the legislative compliance of ISO 14001 we have won several awards for our environmental initiatives, including SuperScheme, our PE waste recycling scheme in the UK.

We pledge to:

- Measure the business' carbon emissions
- Report carbon emissions publicly or to Business in the Community
- Set an absolute target and take action to reduce the business' carbon emissions
- Encourage employees to reduce their carbon emissions at home and at work
- Mobilise customers to take action on climate change

Health & Safety

The health and safety of operatives and individuals involved in the processing, handling, jointing, installation, testing and use of polyethylene pipe systems is at all times of paramount importance to Radius Systems.

In addition to compliance with BS OHSAS 18001:2007 for the manufacture of polyethylene and PVC pipes and fittings for telecoms, gas, water and industrial applications, we also adhere to good working practices across our whole business which is essential to achieve the high standards that we and our customers expect.

About FTTx

FTTx

Fibre-to-the-x

A generic term for any broadband network architecture that uses optical fibre to replace all or part of the usual metal local loop used for the last mile.

The x can be substituted by another letter determined by the architecture it refers to e.g. FTTN, FTTC, FTTB, FTTH.

FTTx architectures vary with regard to the distance between the optical fibre and the end-user.

FTTH

Fibre-to-the-home

Fibre reaches the boundary of the living space, such as a box on the outside wall of a home.

Once at the subscriber's living or working space, the signal may be conveyed throughout the space using any means, including twisted pair, coaxial cable, wireless, power line communication, or optical fibre.

An FTTH network constitutes a fibre-based access network, connecting a large number of end users to a central point known as an access node or point of presence (POP). Each access node is served by a larger metropolitan or urban fibre network, which connects all the access nodes throughout a large municipality or region.

FTTC

Fibre-to-the-cabinet or fibre-to-the-curb

Very similar to FTTN (see below), but the street cabinet is closer to the user's premises; typically within 300m.

FTTB

Fibre-to-the-building or fibre-to-the-basement

Fibre reaches the boundary of the building, such as the basement in a multi-dwelling unit, with the final connection to the individual living space being made via alternative means.

FTTN

Fibre-to-the-node

Also can be fibre-to-the-neighbourhood or fibre-to-the-cabinet.

Fibre is terminated in a street cabinet up to several kilometers away from the customer premises, with the final 'last mile' connection being copper coaxial or twisted pair infrastructure.

Fibre to the node allows delivery of broadband services such as high speed internet. High speed communications protocols such as broadband cable access or some form of DSL are used between the cabinet and the customers. The data rates vary according to the exact protocol used and according to how close the customer is to the cabinet.



Installation methods

There are several ways to install an FTTx network dependent on the environment in which you are deploying. We have systems to suit each installation method.

Direct Install

- Installation into waiting ducts
- Individual tubes or single sheath bundles



Aerial

- Catenary constructions, figure of 8
- Weathering and UV resistance



Direct Bury/Trenching

- Install directly into the ground, where there are no ducted networks
- Heavy sheath construction
- Ducting offers protection from weather, temperature changes, impact and physical damage



No Dig Solutions: Sewers/Tunnels

- Install into existing infrastructure = typically 60% faster than other installation methods
- Little traffic/pedestrian disruption
- Increased duct protection thanks to infrastructure depth and structural integrity
- No right of way procedures
- Weathering and UV resistance



Micro-Trenching

- Narrow trenches are cut at shallow depth in an existing roadway
- Minimal disruption
- Restored with minimum renovation
- Road construction strength retained



Mole Ploughing

- Specialist machines dig the trench and lay the duct in one operation
- Special heavy duty tube assemblies



FTTx applications

Our telecoms and FTTx systems can be used anywhere in the network from backbone to deep fibre applications. This can include metro loops, WAN, LAN, access networks and last mile connections right to the premises.

Our FTTx product range provides a wide range of solutions for next generation access networks.

Access networks may connect some of the following:

- Fixed wireless network antenna, for example wireless LAN or WiMAX
- Mobile network base stations
- Subscribers in residential houses, terraces or blocks of flats
- Larger buildings such as schools, hospitals and businesses
- Key security and monitoring structures like surveillance cameras, security alarms and control devices

Network applications

The network environment can be broadly split into:

- intercity/regional
- city
- campus, business parks, private networks
- open residential
- rural
- building type and density – single homes or multi-dwelling units (MDUs)

The type of site will be a key factor in deciding the most appropriate network design and architecture. Types include:

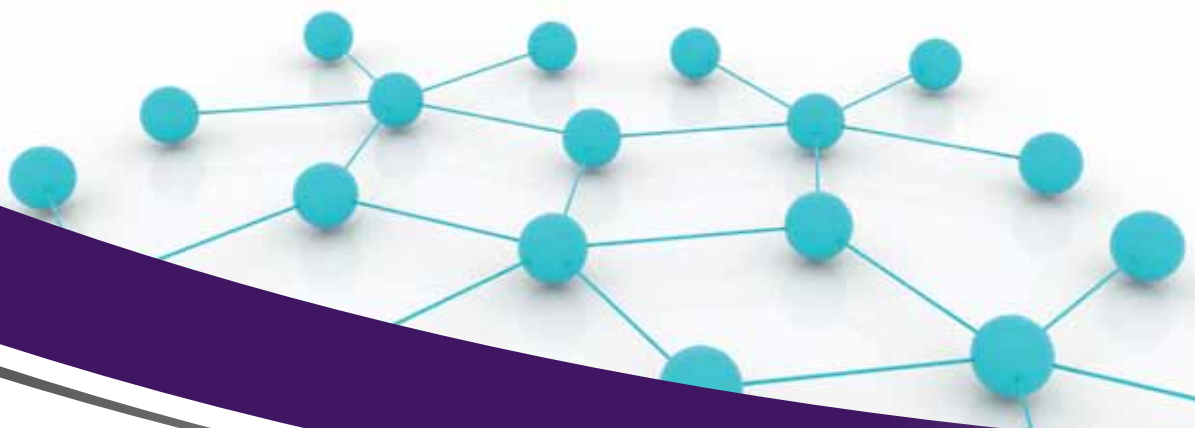
- Greenfield – new build where the network will be introduced at the same time as the buildings
- Brownfield – where there are existing buildings and infrastructure but the infrastructure is to a lower standard
- Overbuild – adding to the existing infrastructure

The main influences for the infrastructure deployment methodology are:

- type of FTTx area
- size of the FTTx network
- initial deployment cost of the infrastructure elements (CAPEX)
- ongoing costs for network operation and maintenance (OPEX)
- network architecture, for example PON (passive optical network) or Active Ethernet
- local conditions, for example, local labour costs, local authority restrictions (traffic control) and others

The fibre deployment technology will determine CAPEX and OPEX, as well as the reliability of the network. These costs can be optimised by choosing the most appropriate active solution combined with the most appropriate infrastructure deployment methodology. These methods include:

- conventional underground duct and cable
- blown microtubes and cable
- direct buried cable
- aerial cable
- 'other rights of way' solutions



FTTH architecture

In order to specify the interworking of passive and active infrastructure, it is important to make a clear distinction between the topologies used for the deployment of the fibres (the passive infrastructure) and the technologies used to transport data over the fibres (the active equipment).

The two most widely used topologies are point-to-multipoint, which is often combined with a passive optical network (PON) architecture, and point-to-point, typically using Ethernet transmission technologies.

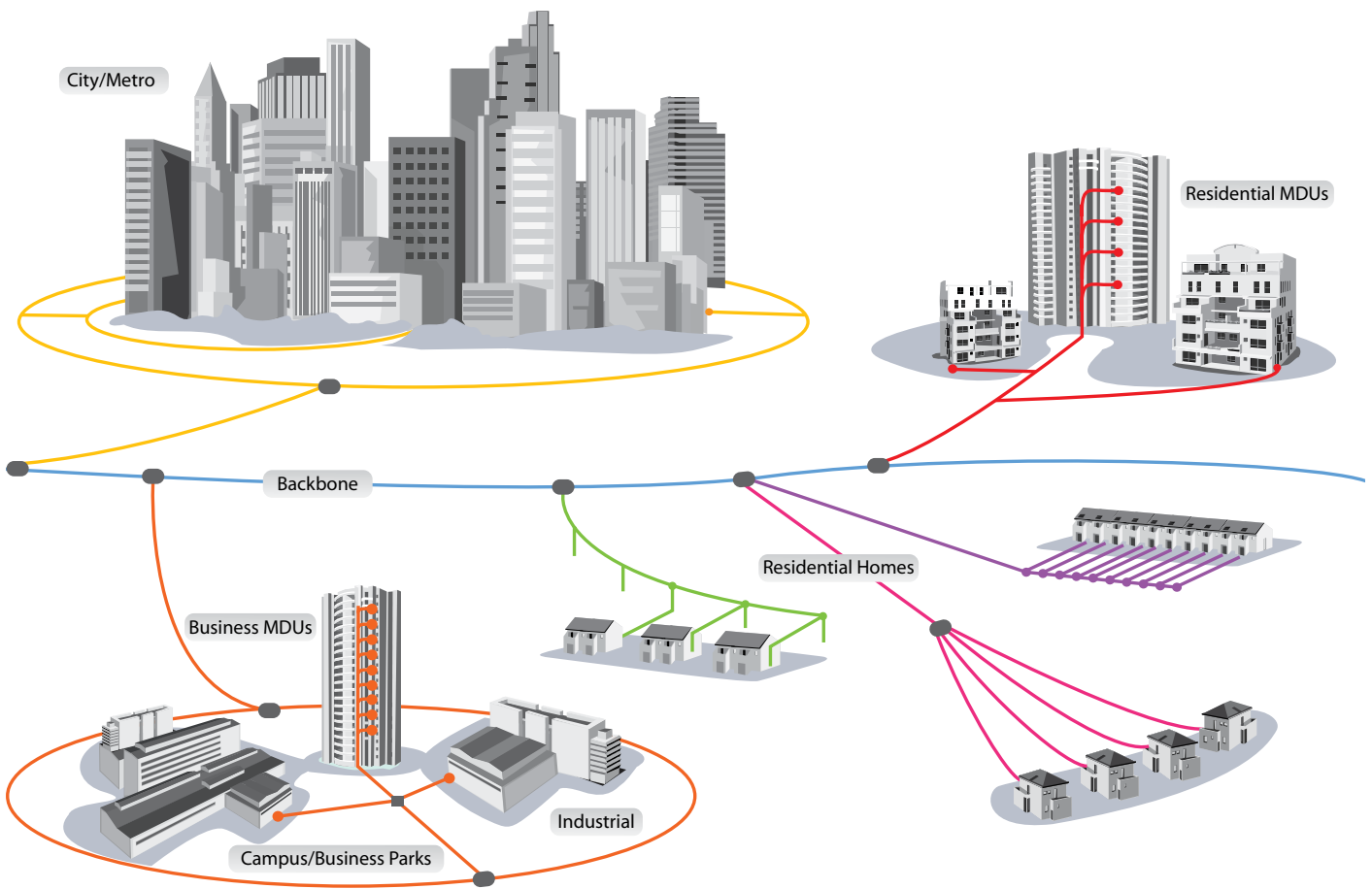
Point-to-multipoint topologies with passive optical splitters in the field are deployed in order to be operated by one of the standardised PON technologies (GPON is today's frontrunner in Europe, while EPON has been massively deployed in Asia)

using time-sharing protocols to control the access of multiple subscribers to the shared feeder fibre. Active Ethernet technology can also be used to control subscriber access in a point-to-multipoint topology – this requires placing Ethernet switches in the field.

Point-to-point topologies provide dedicated fibres between the POP (point of presence) and the subscriber. Each subscriber is directly connected by a dedicated fibre. Most existing point-to-point FTTH deployments use Ethernet, but this can be mixed with other transmission schemes for business applications (for example Fibre Channel, SDH/SONET).

This topology can also include PON technologies by placing the passive optical splitters in the access node.

Helping you achieve tomorrow's networks – future proof, flexible and cost effective



MDUs = Multiple Dwelling Units

FTTx Microtubing Systems



Our Microtubing Systems were developed specifically for FTTx networks

Designed for scalable and economic installation, our MiniGlide™ and MicroGlide™ tubing systems enable rapid and simple fibre deployment from trunk networks through to the end user.

The modular tubing infrastructure is based on small diameter tubes supplied loose or bundled in cable-like assemblies to suit different applications and cable sizes.

Flexible multi-tube systems allow for future expansion without the initial fibre outlay, as each tube is populated when required by blowing in fibre mini-cable or blown fibre units, leaving empty tubes to satisfy further demand.

We offer two standard microtubing systems; MiniGlide, based on 7 to 16mm tubes, and MicroGlide, based on 3 to 6mm tubes.

With over 20 years experience of supporting large and small scale deployments, we offer 'built to last', proven systems which protect your long term investment

MiniGlide and MicroGlide tubing is available in the following options:

Outdoor Installations:

Direct Bury, Direct Install, Metallic and Non-Metallic

Indoor Installations:

Low Smoke Zero Halogen (LSZH) - PE/PVC

Special Assemblies:

Aerial, Anti-rodent, Anti-termite, Armoured, Chemical Resistant

Product Customisation:

Your choice of tube colours and stripes, sheath colours and print line

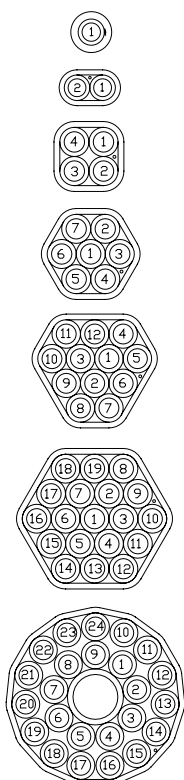
Microtubing Systems Benefits:

- Deferred capital cost
- No need to guess future fibre requirements
- Maximised network capacity
- Rapid installation and short response time
- Flexible network expansion, connection and upgrade
- Fast and easy branching-off
- Point to point fibre connections
- Limited splicing
- Reduced engineering costs
- Mid-span access at any location, at any time
- No disruption to live fibre

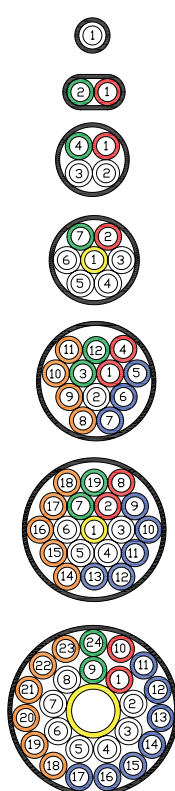
Standard Tubing Configurations:

Our tubing can be bundled in assemblies from 1 to 24-way. These assemblies are available in a variety of sheathing options suitable for Direct Install, Direct Bury or Fire Retardant (LSZH) applications and can be customised to meet specific environmental challenges.

Low Smoke Zero Halogen



MicroGlide



MiniGlide



The above shows typical 1-24way configurations and is for illustration only. Other colours and sheathing options are available.

MiniGlide™ Tubing



Use MiniGlide tubing systems for backbone, metro and last mile infrastructure

Suitable for: backbone, metro, distribution, campus networks and last mile.

MiniGlide tubing is the ideal solution where initial fibre count is high in backbone and distribution networks and for deep fibre applications right up to the end user.

Designed for use with blowable mini-cable it offers high fibre capacity and allows fibre to be blown in as and when required, providing vast expansion scalability with minimal initial investment.

Based on primary tubes of 7 to 16mm, MiniGlide comes in configurations of 1 to 7 tubes as standard.

We also offer a range of complementary accessories, including Matrix™ Joint Closures, Push-Fit Connectors and Tools

HDPE Tubes

- Permanent low friction inner coating for enhanced blowing performance
- Supplied as single tubes or assemblies
- Smooth or ribbed inner wall
- Solid or translucent colours with optional stripes for easy identification

Standard Wall		Drum Lengths (m)						Thick Wall		Drum Lengths (m)					
OD (mm)	ID (mm)	500	1000	2000	2500	4000	5000	OD (mm)	ID (mm)	500	1000	2000	2500	4000	5000
7	5.5	•	•	•		•	•	7	3.5	•	•	•		•	•
10	8	•	•	•	•			8	3.5	•	•	•		•	
12	10	•	•	•				10	6	•	•	•	•		
14	11	•	•					14	10	•	•				
14	12	•	•					16	12	•	•				
								16	10	•	•				



Other sizes available on request



Low Fire Hazard Tubes

- Fire retardant and halogen free tubes designed to meet the requirements of IEC 60332-3 and IEC 60332-1
- Permanent low friction inner coating for enhanced blowing performance
- Smooth or ribbed inner wall
- Solid white colour as standard

OD (mm)	ID (mm)	Drum Length (m)				
		500	1000	2000	4000	5000
7	5.5	•	•	•	•	•
10	8	•	•	•		
12	10	•	•	•		

Other sizes available on request

Direct Install Metal Free

- Can be installed directly into a duct or sub-duct where a non-metallic solution is required (such as an area with a risk of lightning)
- Single PE sheath
- Optional non-metallic moisture barrier (water blocking tape)

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	13.2	•	•	•
2	10/8	23.2 x 13.2	•	•	•
4	10/8	27.3 x 23.2	•	•	•
7	10/8	33.4 x 30.7	•	•	•
1	12/10	15.9	•	•	•
2	12/10	27.9 x 15.9	•	•	•
4	12/10	32.9 x 27.9	•	•	•
7	12/10	40.4 x 37.2	•	•	



MiniGlide™ Tubing



Direct Install Aluminium

- Can be installed directly into a duct or sub-duct
- Maximum moisture protection provided by a 150µm layer of aluminium
- Light PE sheath
- Integral ripcord for easy sheath removal

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	13.7	•	•	•
2	10/8	23.7 x 13.7	•	•	•
4	10/8	27.8 x 23.7	•	•	•
7	10/8	33.7 x 31.0	•	•	•
1	12/10	15.7	•	•	•
2	12/10	27.7 x 15.7	•	•	•
4	12/10	32.7 x 27.7	•	•	•
7	12/10	39.7 x 36.5	•	•	•

Direct Bury Metal Free

- Can be installed directly into prepared ground where a non-metallic solution is required (such as an area with a risk of lightning)
- Heavy PE sheath for maximum crush resistance
- Optional non-metallic moisture barrier (water blocking tape)
- Integral ripcord for easy sheath removal

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	15.9	•	•	•
2	10/8	25.9 x 15.9	•	•	•
4	10/8	30.9	•	•	•
7	10/8	38.3	•	•	•
1	12/10	17.9	•	•	•
2	12/10	30.6 x 18.6	•	•	•
4	12/10	36.9	•	•	•
7	12/10	45.1	•	•	•



Direct Bury Aluminium

- Can be installed directly into prepared ground
- Heavy PE sheath for maximum crush resistance
- Maximum moisture protection provided by a 150µm layer of aluminium
- Integral ripcord for easy removal of the inner sheath



Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	18.0	•	•	•
2	10/8	28.0 x 18.0	•	•	•
4	10/8	33.9 x 29.7	•	•	•
7	10/8	39.7 x 37.0	•	•	•
1	12/10	20.0	•	•	•
2	12/10	32.0 x 20.00	•	•	•
4	12/10	38.6 x 33.6	•	•	•
7	12/10	45.6 x 42.4	•	•	•

Direct Bury Heavy Wall

- Can be installed directly into prepared ground
- Made from heavy duty crush resistant tubes
- Simple and robust assembly
- Thin outer PE or PP sheath



Configuration # of Tubes	Tube OD/ ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			1000	2000	3000	4000
2	7/3.5	16.0 x 9.0				•
4	7/3.5	18.9 x 16.0				•
7	7/3.5	23.0 x 21.1				•
12	7/3.5	30.4 x 27.2			•	
19	7/3.5	37.0 x 33.2	•	•		
24	7/3.5	44.0				
2	10/6	22.0 x 12.0		•		
3	10/6	22.0 x 20.7		•		
4	10/6	26.1 x 22.0		•		
5	10/6	28.2 x 27.4		•		
6	10/6	31.0 x 30.1		•		
7	10/6	32.0 x 29.3		•		
2	12/8	26.0 x 14.0		•		
3	12/8	26.0 x 24.4		•		
4	12/8	31.0 x 26.0		•		
5	12/8	33.4 x 32.5		•		
6	12/8	36.8 x 35.7		•		
7	12/8	38.0 x 34.8		•		
2	14/10	30.0 x 16.0	•			
3	14/10	30.0 x 28.1	•			
4	14/10	35.8 x 30.0	•			
5	14/10	38.7 x 37.6	•			
6	14/10	42.6 x 41.3	•			
7	14/10	44.0 x 40.3	•			
2	16/12	34.0 x 18.0	•			
3	16/12	34.0 x 31.9	•			
4	16/12	40.6 x 34.0	•			
5	16/12	43.9 x 42.6	•			
6	16/12	48.4 x 46.9	•			
7	16/12	50.0 x 45.7	•			

* Nominal values

MicroGlide Indoor Assemblies

These assemblies are suitable for indoor applications offering varying levels of protection against fire and low smoke and zero halogen emissions



Low Fire Hazard (LFH)

- Low Smoke Zero Halogen (LSZH) sheath and primary tubes
- For use inside buildings
- Low flammability, low smoke and zero halogen emissions
- Designed to meet the requirements of IEC 60332-3 and IEC 60332-1

Configuration # of Tubes	Tube OD/ ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	12.0	•	•	•
2	10/8	22.0 x 12.0	•	•	•
4	10/8	26.1 x 22.0	•	•	•
7	10/8	32.0 x 29.3	•	•	•
1	12/10	14.2	•	•	•
2	12/10	26.2 x 14.1	•	•	•
4	12/10	31.2 x 26.2	•	•	•
7	12/10	38.2 x 35.0	•	•	•

Intermediate Fire Hazard



- LSZH sheath and PE primary tubes
- For use inside buildings
- Improved fire performance compared with all-PE products
- Designed to minimise the evolution of smoke and corrosive gases
- Designed to meet performance requirements of IEC 60332-1

Configuration # of Tubes	Tube OD/ ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	10/8	12.0	•	•	•
2	10/8	22.0 x 12.0	•	•	•
4	10/8	26.1 x 22.0	•	•	•
7	10/8	32.0 x 29.3	•	•	•
1	12/10	14.2	•	•	•
2	12/10	26.2 x 14.1	•	•	•
4	12/10	31.2 x 26.2	•	•	•
7	12/10	38.2 x 35.0	•	•	•

MicroGlide™ Tubing

Use MicroGlide to connect a number of smaller buildings, campuses and residential areas, or an area where initial fibre penetration is low

With 3 to 6mm primary tubes, it is ideal for the distribution or drop sections of an access network. Designed for use with blown fibre units (up to 12 fibre) MicroGlide comes in configurations of 1 to 24 tubes.

Flexible systems allow for future expansion without the initial fibre outlay as tubes are populated only when required



HDPE tubes

- Permanent low friction inner coating for enhanced blowing performance
- Supplied as single tubes or assemblies
- Smooth inner wall
- Solid or translucent colours

OD (mm)	ID (mm)	Drum Length (m)				
		500	1000	2000	4000	8000
3	2.1	•	•	•	•	•
4	2.3	•	•	•	•	•
5	2.1	•	•	•	•	•
5	3.5	•	•	•	•	•
6	2.7	•	•	•	•	•
6	4	•	•	•	•	•



Other ODs/IDs and drum lengths available on request

Low Fire Hazard (LFH) Tubes

- Fire retardant and halogen free tubes meet IEC 60332-3 and IEC 60332-1
- Permanent low friction inner coating for enhanced blowing performance
- Smooth inner wall
- Solid white colour as standard

OD (mm)	ID (mm)	Drum Length (m)				
		500	1000	2000	4000	8000
5	3.5	•	•	•	•	•



Direct Install Metal Free

- Can be installed directly into a duct or sub-duct where a non-metallic solution is required (such as an area with a risk of lightning)
- Non-metallic moisture barrier provided
- Light PE sheath
- Integral ripcord for easy sheath removal



Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	5/3.5	8.7	•	•	•
2	5/3.5	13.7 x 8.7	•	•	•
4	5/3.5	15.7	•	•	•
7	5/3.5	18.7	•	•	•
12	5/3.5	24.9	•	•	•
19	5/3.5	29.6	•	•	•
24	5/3.5	34.6	•	•	•

* Nominal values

MicroGlide™ Tubing



Direct Install Aluminium

- Can be installed directly into a duct or sub-duct
- Maximum moisture protection provided by a 150µm layer of aluminium
- Light PE sheath
- Integral ripcord for easy sheath removal

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	8.9	•	•	•	•
2	5/3.5	13.7 x 8.7	•	•	•	•
4	5/3.5	15.8	•	•	•	•
7	5/3.5	18.7	•	•	•	•
12	5/3.5	24.0	•	•	•	•
19	5/3.5	28.7	•	•	•	•
24	5/3.5	33.7	•	•	•	•

Direct Bury Metal Free

- Can be installed directly into prepared ground where a non-metallic solution is required (such as an area with a risk of lightning)
- Heavy PE sheath for maximum protection
- Non-metallic moisture barrier provided by water blocking tape
- Integral ripcord for easy removal of the inner sheath

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)		
			500	1000	2000
1	5/3.5	10.8	•	•	•
2	5/3.5	17.6 x 12.6	•	•	•
4	5/3.5	19.7	•	•	•
7	5/3.5	22.6	•	•	•
12	5/3.5	28.4	•	•	•
19	5/3.5	33.3	•	•	•
24	5/3.5	38.0	•	•	•



Direct Bury Aluminium

- Can be installed directly into prepared ground
- Heavy PE sheath for maximum protection
- Maximum moisture protection provided by a 150µm layer of aluminium
- Integral ripcord for easy removal of the inner sheath



Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	11.9	•	•	•	•
2	5/3.5	16.9 x 11.9	•	•	•	•
4	5/3.5	19.0	•	•	•	•
7	5/3.5	22.5	•	•	•	•
12	5/3.5	30.0	•	•	•	•
19	5/3.5	34.7	•	•	•	•
24	5/3.5	39.7	•	•	•	•

MicroGlide Indoor Assemblies

These assemblies are suitable for indoor applications offering varying levels of protection against fire and low smoke and zero halogen emissions

Low Fire Hazard (LFH)



- Low Smoke Zero Halogen (LSZH) sheath and primary tubes
- For use inside buildings
- Low flammability, low smoke and zero halogen emissions
- Meets IEC 60332-3 and IEC 60332-1

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	6.9	•	•	•	•
2	5/3.5	12.0 x 7.0	•	•	•	•
4	5/3.5	14.1 x 12.0	•	•	•	•
7	5/3.5	17.0 x 15.7	•	•	•	•
12	5/3.5	22.4 x 20.1	•	•	•	•
19	5/3.5	27.0 x 24.3	•	•	•	•
24	5/3.5	32.0 x 31.8	•	•	•	•

Intermediate Fire Hazard



- LSZH sheath and PE primary tubes
- For use inside buildings
- Improved fire performance compared with all-PE products
- Designed to minimise the evolution of smoke and corrosive gases
- Designed to meet performance requirements of IEC 60332-1

Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	6.9	•	•	•	•
2	5/3.5	12.0 x 7.0	•	•	•	•
4	5/3.5	14.1 x 12.0	•	•	•	•
7	5/3.5	17.0 x 15.7	•	•	•	•
12	5/3.5	22.4 x 20.1	•	•	•	•
19	5/3.5	27.0 x 24.3	•	•	•	•
24	5/3.5	32.0 x 31.8	•	•	•	•

General Flammability Resistance

- PVC sheath and PE primary tubes
- For use inside buildings
- Provides a basic level of fire protection for general purpose applications
- Meets IEC 60332-1



Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	7.5	•	•	•	•
2	5/3.5	12.5 x 7.5	•	•	•	•
4	5/3.5	15.5	•	•	•	•
7	5/3.5	18.5	•	•	•	•

* Nominal values

Riser Rated

- For use as riser tubing in buildings
- Approved to RISER UL 1666 and CUL 1666 by Underwriter Laboratories



Configuration # of Tubes	Tube OD/ID (mm)	Assembly OD (mm)*	Drum Length (m)			
			500	1000	2000	4000
1	5/3.5	6.9	•	•	•	•
2	5/3.5	11.9 x 6.9	•	•	•	•
4	5/3.5	14.0 x 11.9	•	•	•	•
7	5/3.5	16.9 x 15.6	•	•	•	•
12	5/3.5	22.2 x 19.9	•	•	•	•
19	5/3.5	26.9 x 24.2	•	•	•	•
24	5/3.5	31.9 x 31.6	•	•	•	•

Special Assemblies



After 23 years of serving the telecoms market, we know that there are times when you need special tube constructions to meet your network requirements

So, we've designed a range of special assemblies to meet various environmental challenges.

These assemblies are made to order so please contact us for further information or if you have a specific situation that you would like us to find a tailored solution for.

We pride ourselves on providing tailored solutions and our expert development engineers enjoy devising special application products to meet your needs. Contact us to find out more



Aerial

- For aerial installation where underground access is not possible or would be less economical
- Self supporting UV stabilised figure of 8 construction with steel strength member

Armoured (Direct Bury)

- Designed for heavy duty applications
- Offers very effective anti-rodent protection
- A corrugated steel layer encased in inner and outer PE sheaths provides extra strength for demanding applications



Anti-Rodent (Direct Bury)

- Designed to withstand and repel rodent attacks
- A fibreglass layer encased in inner and outer PE sheaths prevents rodents from causing costly damage



Special Assemblies



Anti-Termite (Direct Bury)

- For use where termites are problematic
- Nylon layer provides protection against attack by termites

Chemical Resistant

- For use in environments at risk of chemical contact
- Maximum chemical resistance is provided through four layers of protection; an initial aluminium layer, an inner PE sheath, a chemical resistant layer and an outer PE sheath



Our microtubing can be installed
in a variety of ways...



FTTx Tools



Heavy Duty Cutter

- Circular, longitudinal and spiral cutting
- Adjustable depth, high speed steel blade

For Tube OD (mm)	Pack Qty	Product Code
15-60mm	1	ZA2870

Sheath Stripper

- Circular and longitudinal cutting
- Adjustable depth, replaceable hardened blade

For Tube OD	Pack Qty	Product Code
6-40mm	1	ZA0764
Spare Blade	1	ZA0765



Longitudinal Cutter 1A

- 4 way cam for different thicknesses
- Shoe for small cables, reversible blade

Description	Pack Qty	Product Code
Longitudinal Cutter	1	ZA0766
Spare Blade	1	ZA2953

Tube Cutter

For Tube OD	Pack Qty	Product Code
4-14mm	1	ZA2951
Spare Blade	10	ZA2952



Matrix™ Joint Closures

Protective joint closures enable point-to-point tube connections

Tubes can be connected in a straight line or branch-off using Push-Fit Connectors and fibre can then be blown in, as required, through to the end user without interruption/splicing.

- Can be installed in an Access Chamber or buried directly into the ground
- Can be retrofitted and reused
- Easy to install and no tools are required
- Ingress protection IP54





In Line Joint Closure

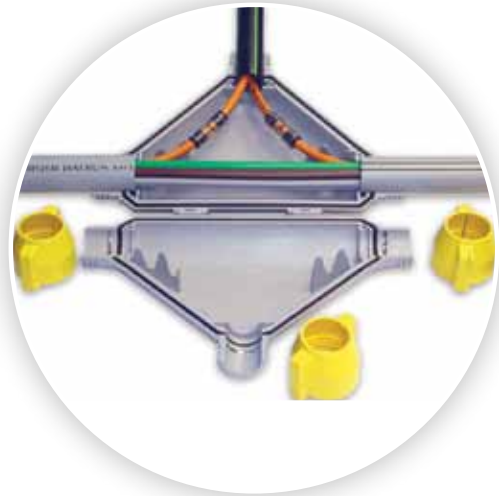
- Inserts are available to fit various cable/duct ODs

For Tube OD (mm)	Pack Qty	Product Code
50 - 50	30	UV0002
40 - 40	30	UV0001
32 - 32	30	UV0000

T Branch Joint Closure

- Inserts are available to fit various cable/duct ODs

For Tube OD (mm)	Pack Qty	Product Code
50 - 50 - 50	25	UV0101
50 - 50 - 40	25	UV0053
50 - 50 - 32	25	UV0052
50 - 50 - 25	25	UV0054
40 - 40 - 40	25	UV0100
40 - 40 - 32	25	UV0051
40 - 40 - 25	25	UV0050



H Branch Joint Closure

For Tube OD (mm)	Pack Qty	Product Code
50 - 50 - 50 - 50	10	UV0400

FTTx Connectors and Sealing



Our easy to use range of Push-Fit Connectors and Sealing Systems are the perfect complement to our MiniGlide and MicroGlide tubing

Connectors are available in a range of sizes for 3 to 16mm microtube outer diameters (OD).

Other push-fit connectors such as close down assemblies and bulkhead connectors are available on request.





Straight Connector

- For joining microtubes of the same OD and ID

Tube OD (mm)	Tube ID (mm)	Pack Qty	Product Code
3	2.1	100	UV0205
4	2.5	100	UV0206
5	3.5	100	UV0207
5	2.1	100	UV0208
7	5.5	100	UV0211
7	3.5	100	UV0212
8	6	100	UV0213
8	3.5	100	UV0214
10	8	100	UV0216
12	10	100	UV0217
12	8	100	UV0218
14	12	100	UV0219
14	10	100	UV0220
16	12	100	UV0221

Reducer

- For joining microtubes of different outer diameters

Microduct A		Microduct B		Pack Qty	Product Code
Tube OD (mm)	Tube ID (mm)	Tube OD (mm)	Tube ID (mm)		
5	3.5	3	2.1	100	UV0153
5	3.5	4	2.5	100	UV0154
7	5.5	3	2.1	100	UV0156
7	5.5	5	3.5	100	UV0158
10	8	5	3.5	100	UV0160
10	8	7	5.5	100	UV0161
12	10	5	3.5	100	UV0163
12	10	7	5.5	100	UV0164
12	10	10	8	100	UV0166
14	10	10	8	100	UV0167
14	10	12	10	100	UV0168
16	12	12	10	100	UV0169



Direct Bury Connector

- A tough straight connector suitable for direct buried jointing of thick walled microtubes

Tube OD (mm)	Tube ID (mm)	Pack Qty	Product Code
5	2.1	100	UV0239
7	3.5	100	UV0240
8	3.5	100	UV0241
10	6	100	UV0242
12	8	100	UV0243
14	10	100	UV0244
16	12	100	UV0245

FTTx Push-Fit Connectors

End Stop

- For sealing the end of an open microtube



Tube OD (mm)	Pack Qty	Product Code
3	100	UV0255
4	100	UV0256
5	100	UV0257
6	100	UV0258
7	100	UV0259
8	100	UV0260
10	100	UV0261
12	100	UV0262
14	100	UV0150
16	100	UV0263

Direct Bury End Stop

- A tough end stop for sealing the end of direct buried thick walled microtubes

Tube OD (mm)	Pack Qty	Product Code
5	100	UV0275
7	100	UV0276
8	100	UV0277
10	100	UV0278
12	100	UV0279
14	100	UV0280
16	100	UV0281



Protect your investment
with our extended range of
connecting and sealing accessories
providing long-term network integrity



Gas Block Connector

- Provides a watertight and gastight seal
- The internal seal can be opened to blow cable through and closed after installation to provide a complete seal
- Tube to tube connection
- Caters for various cable diameters

Tube OD (mm)	Cable OD Range (mm)	Pack Qty	Product Code
4	Fibre Unit	100	UV0184
5	Fibre Unit	100	UV0185
5/4	Fibre Unit	100	UV0186
7	1/3.8 Cable	100	UV0188
7	2/5.5 Cable	100	UV0187
10	1-4 Cable	100	UV0191
10	3-6 Cable	100	UV0202
10	5-8 Cable	100	UV0190
12	3-6 Cable	100	UV0193
12	5-8 Cable	100	UV0194
12	7-10 Cable	100	UV0192
14	3-6 Cable	100	UV0197
14	5-8 Cable	100	UV0196
14	7-10 Cable	100	UV0200
14	9-12 Cable	100	UV0195
16	9-12 Cable	100	UV0198

Gas Block End Stop

- Provides a watertight and gastight seal for the end of a microtube
- Tube to cable seal
- Caters for various cable diameters

Tube OD (mm)	Cable OD Range (mm)	Pack Qty	Product Code
7	1-3.8	100	UV0370
7	2-5.5	100	UV0267
10	1-4	100	UV0371
10	3-6	100	UV0202
10	5-8	100	UV0268
12	3-6	100	UV0373
12	5-8	100	UV0374
12	7-10	100	UV0269
14	3-6	100	UV0375
14	7-10	100	UV0376
14	5-8	100	UV0270
14	9-12	100	UV0377
16	9-12	100	UV0271



FTTx Sealing Systems



Duct Sealing Plugs

- Simple and effective splashproof and dirt tight sealing of ducts
- Can be used as a blank plug or for sealing around a cable/tube
- Special conical shape can be easily cut to fit cable/tube diameter

Duct OD (mm)	Duct ID Range (mm)	Cable/ tube OD (mm)	No. of Ports	Pack Qty	Product Code
32	27.0-28.5	6.0-16.0	1	40	UV0500
40	31.5-33.0	5.0-22.0	1	40	UV0501
50	39.5-41.5	8.0-20.0	1	10	UV0502

MiniGlide Sealing Plugs

- Simple and effective splashproof and dirt tight sealing of ducts occupied by MiniGlide tubes
- Designed to fit a range of microtube configurations

Duct OD (mm)	Duct ID Range (mm)	Minitube OD (mm)	No. of Minitube Ports	Pack Qty	Product Code
40	33	7	7	100	UV0514
40	33	10	5	100	UV0515
40	33	12	4	100	UV0516

* Other sizes available on request, subject to minimum order quantities and lead time



MiniGlide Sealing Caps

- Splashproof and dirt tight sealing of ducts occupied by MiniGlide tubes
- Design to fit on the outside of a duct



Duct OD (mm)	Minitube OD (mm)	No. of Minitube Ports	Pack Qty	Product Code
40	7	10	40	UV0258
40	10	5	40	UV0529
40	12	4	10	UV0530
50	7	14	25	UV0531
50	10	7	25	UV0532

* Other sizes available on request, subject to minimum order quantities and lead time

FTTx Sealing Systems



MiniGlide Retrofittable Sealing Plugs

- Gastight and watertight sealing plugs for the sealing of ducts occupied by MiniGlide tubes
- Divisible design suitable for retrofit
- Comprises a rubber bushing, 2 plastic shells and 2 closing keys
- Compact design means the plug can be used almost everywhere along the network
- Sealing up to 0.5 bar

Duct OD (mm)	Minitube OD (mm)	No. of Minitube Ports	Pack Qty	Product Code
32	10	3	10	UV0544
32	12	1	10	UV0545
	10	1		
	7.5	1		
40	7	10	10	UV0546
40	10	5	10	UV0547
40	12	4	10	UV0548
50	16	1	10	UV0549
	12	3		
50	10	7	10	UV0550
50	12	7	10	UV0551

* Other sizes available on request, subject to minimum order quantities and lead time

MiniGlide Compression Sealing Plugs

- A range of watertight and airtight plugs for the sealing of ducts occupied by MiniGlide tubes
- Rubber compression mechanism for high performance seal



Duct OD (mm)	Duct ID Range (mm)	Minitube OD (mm)	No. of Minitube Ports	Pack Qty	Product Code
32	26.6-27.7	7	3	12	ZA0448
32	26.6-27.7	10	3	12	ZA0449
40	32.2-33.8	12	3	12	ZA0450
40	32.2-33.8	7	7	12	ZA0451
40	32.2-33.8	10	5	12	ZA0452
50	40-41.2	12	5	12	ZA0453
50	40-41.2	10	5	12	ZA0454
50	40-41.2	7	10	12	ZA0455
50	40-41.2	10	7	12	ZA0456

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