PRYSMIAN
CABLES & SYSTEMS

FTTx Passive Solutions

The Prysmian challenge, as a Passive System Provider, is to be ready to offer to different types of customer a tailored, comprehensive solution, where not only a high added value Product Portfolio is supplied, but also the Training, Design & Planning Support, as well as the Installation Survey, can be provided as part of a turn-key system.

BEST IN GLASS

CasaLight™

Benefits and Features

Prysmian's own G.657 compliant CasaLight™, CasaLight™ Plus and CasaLight™ Xtreme fibres exhibit excellent macrobending performance even when used under extreme conditions. Furthermore, the CasaLight™ family is fully compliant with traditional G.652 fibres ensuring full system compatibility with existing networks.

Excellent bend performance

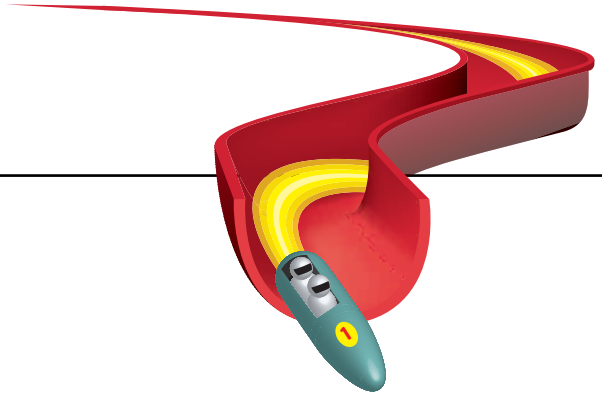
> Casalight™, CasaLight™ Plus and CasaLight™ Xtreme are fully compliant and exceed ITU-T G.657 class A and B, the new international recommendations defining the tougher performance requirements for optical fibres in today's Optical Access Networks. Its optimized design allows the Casalight™ family to exhibit excellent macrobending performance even when used under extreme conditions.

Compatibility

> All of the fibres are also in compliance with ITU-T Recommendation G.652 and have satisfied all IEC testing requirements for transmission, mechanical and environmental performance. They have optimal spliceability with G.652 fibres thanks to their very similar chemical composition and to their best-in-class geometrical parameters. This makes the CasaLight™ family truly compatible both with other fibre types and with optical systems employed globally.

Neon™ Plus coating

> The CasaLight™ range is available with Neon™ Plus, the latest generation of coatings, based on the highly acclaimed Neon™ coating used by Prysmian worldwide for more than 10 years.



Fibre To The x (FTTx)

Whilst not being a new concept, FTTx is finally gathering real momentum as the Telecom operators start to evaluate more closely key drivers such as the trade-off between CAPEX and OPEX when looking at new network roll-out.

Other drivers include the significant cost of maintenance in traditional copper networks, the minimization of installation cost when adding individual subscribers and last but not least the actual need of bandwidth in the residential activities.

In addition to the traditional Incumbent Operators, who are investigating the best way to proceed along the FTTx road, many newcomers such as Utilities, Real Estate companies, Alternative Operators and Content Providers are becoming more active and are clearly more comfortable moving forward in such an environment.

About us

A leading provider of high-technology cables and systems for energy and telecommunications, the Prysmian Group is a truly global company occupying a strong position in higher-added-value market segments. Across our two businesses - Energy Cables & Systems and Telecom Cables & Systems – we have over 12,000 employees in subsidiaries in 34 countries, including 54 plants in 20 countries, and seven Research & Development Centres in Europe, USA and South America.

Specialising in the development of bespoke products and systems, our key strengths include:

> a focus on research and development
> the capacity to be innovative with products and production processes
> the use of advanced proprietary technologies.

In telecommunications, we provide a major percentage of the world's optical cabling. Our global experience and local manufacturing capacity support this, assuring continuous supply and outstanding service.

Delivering optical fibres, cables and connectivity services, we always ensure that the right total optical communication system is matched to our customers' precise requirements. This complete service encompasses everything from design, development and manufacture through to technical support of commissioned cable networks.

Planning and logistics are the cornerstones of our work, with quality maintained through the dedication of all staff working across the business to ISO 9001 and 14000 standards.

Quite simply, when a project is in Prysmian's hands, our customers are assured of total quality service.

Prysmian FTTx worldwide

Andorra
Australia
Belgium
Brazil
Brunei
China
Denmark
Dubai
France
Germany
Greece
Hungary
Italy
Latvia
Lithuania
Netherlands
Norway
Portugal
Russia
Slovakia
Slovenia
South Africa
Spain
Sweden
UK
USA

FTTH council | fiber to the home
Member since 2004

Fibre to the Home Council Europe
Member since 2005

FTTH Council Asia Pacific
Member since 2006

www.prysmian.com

vertiCasa™

MDU Cabling Solution

Applications

Designed specifically for bringing optical fibre directly to residents of high-rise apartments and offices, the heart of the VertiCasa™ system features a new concept in optical cable construction allowing remarkably easy fibre access and break-out, reducing the demand for skilled labour and installation time and cost.

The VertiCasa™ system provides a fast and flexible means of connecting users in an MDU (Multi Dwelling Unit). The system comprises a main Riser Cable of up to 96 fibres which can be branched directly to individual subscribers on different floors of the MDU without the need for splicing of fibre within the riser of the building. Fibres are extracted from breakout windows in the main cable using Prysmian's method which allows the required length of protected 'easy strip' fibre to be routed directly from the main body of the cable through to the end user. A pre-connectorised Drop Cable may be used to provide the final customer connection.

The Verticasa™ system is also suitable for external installation. A range of external cables and accessories has been developed to resist the most severe environmental and weather conditions. This new design maintains the main characteristics of the Verticasa™ system, namely the ease, speed and flexibility of installation.

The VertiCasa™ system comprises all supporting accessories and connectivity products necessary to complete the full installation from main fibre distribution point, generally in the basement of the MDU, through to the end user.

Benefits

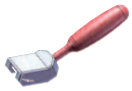
- Innovative cable system
- Extractable Easy Strip Fibre Units (ESFU) are protected by LSOH
- A range of supporting connectivity products for cable breakout, splicing and customer termination
- Latest Prysmian fibre technology supplied in VertiCasa™ cables
- Re-enterable system
- Reduced fusion splicing time, cost and power loss
- No need for skilled labour
- Accepts the most common mechanical splices and field mountable connectors

VertiCasa™ Riser Cables
- A patented cable system of up to 96 CasaLight™ G.657 fibres which can be branched directly to individual subscribers on different floors of the MDU

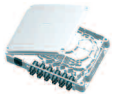
VertiCasa™ Drop tube
- Routes the extracted fibre directly to the end user

VertiCasa™ Drop Cables
- 1 or 2 CasaLight™ G657 FO Cable

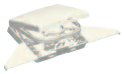
VertiCasa™ Stripping tool
- A dedicated tool to cut a breakout window in the cable allowing easy fibre access



VertiCasa™ Riser Box
- Allows the VertiCasa™ Cable to be spliced to up to 12 customer drop cables



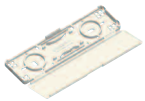
VertiCasa™ Internal Transition Box (ITB)
- Enables the splicing of up to 4 drop cables to a main in-line cable



VertiCasa™ 4port Breakout Unit
- Distributes the fibres from an in-line VertiCasa™ cable into drop tubes

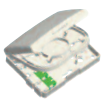
VertiCasa™ Protection Cover
- Covers the breakout section of the cable

VertiCasa™ Mechanical Splice Holder (MSH)
- Accommodates up to 2 mechanical splices

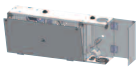


VertiCasa™ Compact Termination Box (CTB)
- Designed for the termination of up to 4 fibres

VertiCasa™ Ultra Compact Termination Box (UCTB)
- Up to 2 fibres accommodated and spliced to pigtails



VertiCasa™ Multi Operator MDU-Demarcation Box (MMDB)
- Connects the vertical in-building cable with the input fibres from multiple operators



sirocco®

Blown Fibre System

Applications

The arrival of fibre is seen by many as the ultimate objective in bringing advanced facilities to people at home. For some, the future is here, with FTTx applications springing up around the globe. For most, the arrival of FTTx is 'sometime in the future'. With Sirocco®, the potential exists, particularly for new build projects, to install the tubes 'fibre-ready'. On 'green field sites', telecommunications becomes the fourth utility, alongside electricity, gas and water, laid ready for use.

Adding a network of tubes, at the same time as providing the other services, reduces build costs while avoiding the higher, perhaps unnecessary cost of dark fibre provision.

Then, as the falling price of service attracts different groups of customers (innovators, early adopters, followers etc) a fibre bundle can be blown in to supply the service required, where it is required.

Benefits

Increase network design flexibility

- Service provision on a just-in-time basis (Network on Demand)
- Existing fibre links can be easily re-routed to new users
- Latest and emerging fibre technologies (MM->OM3->SM) can be deployed
- Superior damage recovery performance over conventional systems

Reduce initial expenditure/control on-going expenditure

- Capital expenditure costs can be deferred
- Splice and breakout expenses can be minimised
- Deployment of fibres is related to actual requirement
- Elimination of unlit fibre

Speed of customer connections

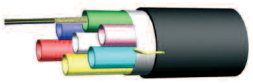
- Equivalent performance for 1st connections, significantly reduced timescales and costs for subsequent connections
- Existing tube routes can be interrupted at any place allowing rapid network upgrades

Blown Fibre Units (EPFU)

- Utilising its core competencies in the manufacturing and cabling of optical fibre, Prysmian produces optical fibre units specifically engineered for blown fibre applications. Pre-Connectorized also available.

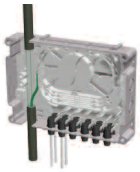
Tube Cable – External/Internal

- HDPE tubes are available in a variety of sizes, combinations and protective systems. Indoor versions (LSOH & UL Riser) are now available for installations in buildings.



Riser Box

- The Riser Box is designed for use within apartment blocks and mid/highrise office blocks. The unit allows fibres from an in-line blown fibre tube cable, to be spliced to up to 12 customer drop cables.



FTTx Entry Kit

- These items are used to provide an ergonomic and managed cable entry at the customer premises. The kits contain all of the items necessary to secure the cable to the outside wall of the building, take the cable elements through the wall in a controlled manner, and terminate them within the customer premises.

Tube Distribution Closure (TDC)

- The Sirocco Tube Distribution Closure is a direct bury in-line closure designed for intercepting a blown fibre tube cable to allow multiple spur-offs to smaller blown fibre tube drop cables.

External Compact Termination (ECT) Wall Box

- The unit houses a single splice tray and allows fibres from externally fed cables, to be spliced to pigtails for connection to up to 8 Optical Network Units.

Installation Kits

- To support the introduction of Sirocco, the range of installation equipment necessary to achieve product application is available in a series of starter kits, including a compressor, a blowing head and all the relevant tools.

QUICKDR@W®

Pre-connectorized Solution

Applications

With the advent of Fibre To The Premises (FTTP) networks a need has emerged for a low cost and simple method of connecting customer's premises. Prysmian has recognised this need and developed a system that allows the simple and effective connection of customer CPE.

Initial deployments of FTTP are most likely to take place in so called green field developments due to the improved cost effectiveness relative to traditional copper cable access networks. The problem with this type of deployment is that it is often very difficult to predict where individual services will be required since dwellings may be constructed relatively randomly on the different sub-divisions in the development area. With this in mind it is necessary to implement a strategy that allows customers to be connected quickly and simply, when their dwelling is ready, without the need for expensive truck rolls and the use of complex equipment (such as fusion splicers) to make the connection.

Benefits

- Pre-made cable lead-in with factory fitted connectors avoids the need for fusion splicing at the time of service activation.
- Customer activation cost is minimised and delayed by only installing and connecting the lead-in cable when the customer premises is ready, which may be long after the initial network build.
- The pulling shroud houses and protects the connector body from dirt or moisture and facilitates the simple connection of a hauling cord to pull the cable assembly through the lead-in conduit to the dwelling.
- The pulling shroud can house most common standard connectors.
- Pulling shroud will pass readily through a 20mm customer lead-in conduit and around 100mm radius bends.

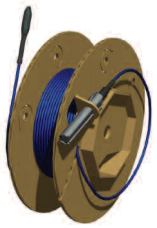
To meet the ultimate need of FTTH operators, a 2 fibres QUICKDR@W® version is now available

Installation Details

QUICKDR@W® Pulling Shroud
- Direct pulling of SM@RTCORD® cable into 20mm conduit
- Prevents moisture and dirt ingress
- Patent Pending
- Available with 1 or 2 fibres

QUICKDR@W® Lead-In Sealing
- Quick and simple screw-fit connection of Lead-in Cable Assembly to CLJ
- Patent Pending
- Available with 1 or 2 fibres

Patch Lead-In Cable
- Pre-assembled coils for low skilled customer connection
- Pre-connectorized at both ends Supplied in 25, 50, 75 & 100m lengths



Customer Lead-In Joint (CLJ)
- Permits low skilled connection of patch lead-in cables
- Facilitates quick 'plug and play' customer connection
- Allows incremental or mass cable connection
- Isolates the lead-in connection area from the skilled operator splicing area
- Can house splitters up to 1:8
- Patent Pending

Fibre Distribution Hub
- House Splitters 1:16 and 1:32
- Up to 768 fibres output
- Outside plant

ZEPHYR

Mini Blown Cables System

Applications

Whilst the continued upgrade and development of metro and access networks is inevitable, the timescales for such activities are often not well defined. This can lead to uncertainty and delays in terms of investment in the installation of fibre systems. Now, the concept of Fibre on Demand, typical of Blown Fibre Systems such as Sirocco® can be extended to distribution cables with the use of Zephyr.

Equally important is the need to have ever smaller cables which increase fibre density and better utilise the reduced space available in the existing infrastructures of most brown field urban environments.

When designed with the patented 200micron PRYSMIAN PrimaLight™ fibre, a fibre density increase exceeding 30% is possible with the same size of cable.

All cables in the range are also available with PRYSMIAN G.657 CasaLight™ fibre providing enhanced cable bend performance.

Benefits

- Can be blown into most common tube sizes (5/3.5 – 7/5.5 – 8/6 – 10/8 – 12/10mm)
- Optimized for Long Span Blowability
- Reduced bending radius
- Very easy and quick fibre access

Dielectric Mini Cable
- Easy strip jelly-free micromodule up to 6f
- Up to 2.2mm O.D.
- Suitable for 5/3.5mm microducts

Dielectric Mini CLT
- Up to 24f
- Up to 5.0mm O.D.
- Temp. range -20°C / +60°C

Mini RAPIER®
- Up to 48f
- 6.0mm O.D.
- Suitable for 10/8mm miniducts

Dry Core Dielectric
- Up to 96f
- Up to 7.6mm O.D.
- Very low friction outer sheath

Accessories
- A wide range of accessories are available which enable tubes to be connected together, sealed from water or gas ingress, or reduced from one tube size to another.

HEADROW®

Heavy Duty for Right Of Way applications

Applications

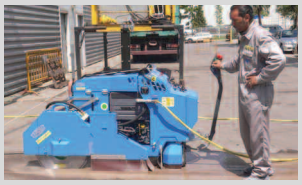
Coming from the OPGW technology, HEADROW® is a special cable designed to be used on heavy-duty applications. Installation in microtrench on urban areas, sewers, submarine connections, directly buried is safe thanks to the perfect sealing of the extruded aluminum tube protecting the optical core.

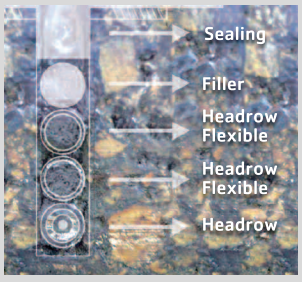
A variety of cable designs and different installation technologies allows fibre deployment at a lower cost than any other traditional method.

Benefits

- Extruded aluminum tube provides total sealing
- Crush resistance exceeding 1000N/10mm
- Outstanding rodent and termite resistance
- Cost effective heavy duty alternative
- Recommended for Microtrenching: low ground penetration but enough not to be affected by asphalt maintenance works
- Recommended for Sewer Installation: no additional construction activities necessary and no interference to operation and maintenance of the sewer systems

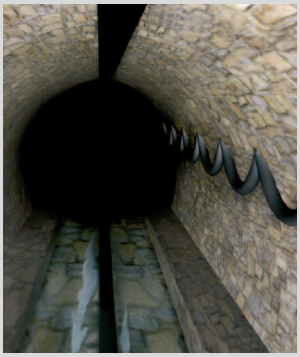
HEADROW® in Microtrench

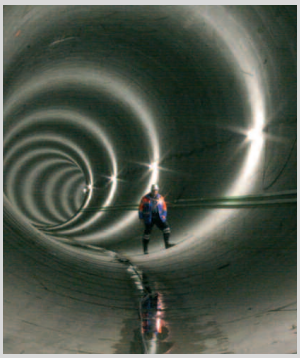




Flexible Capacity
Initial: HEADROW® 2-144
Add up to 2 by 72 cables
Max Capacity: 288 fibres

HEADROW® Sewer





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PRYSMIAN
CABLES & SYSTEMS

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