



home - **EnLighten**

FTTH Solutions

Home and MDU fiber wiring solution



home - EnLighten FTTH Solutions

As a next step in our FTTH system solution, TE Connectivity has developed a product set for the wiring of Single Family Units (SFUs) and Multi-Dwelling Units (MDUs). This including fiber optic cables and connectivity inside the building from the outside plant cable termination to the customer's interface.

We developed a complete indoor fiber solution incorporated in the "home-Enlighten" product range which is an extension to the OSP "Enlighten" FTTH product range.

About 50% of European citizens live in MDUs or apartment buildings. In the larger European cities, this number even goes up to 75%. Given the wide variety of building infrastructures, TE Connectivity has created flexible fiber connectivity solutions that can be used in- or outside any of these buildings for easy FTTH deployment.

MDUs can be classified in three categories:

- **High Rise:** more than 48 living units located on more than 10 floors in a building
- **Medium Rise:** an average of 12 to 48 living units located on 4 to 8 floors
- **Low Rise:** less than 12 living units located on less than 4 floors

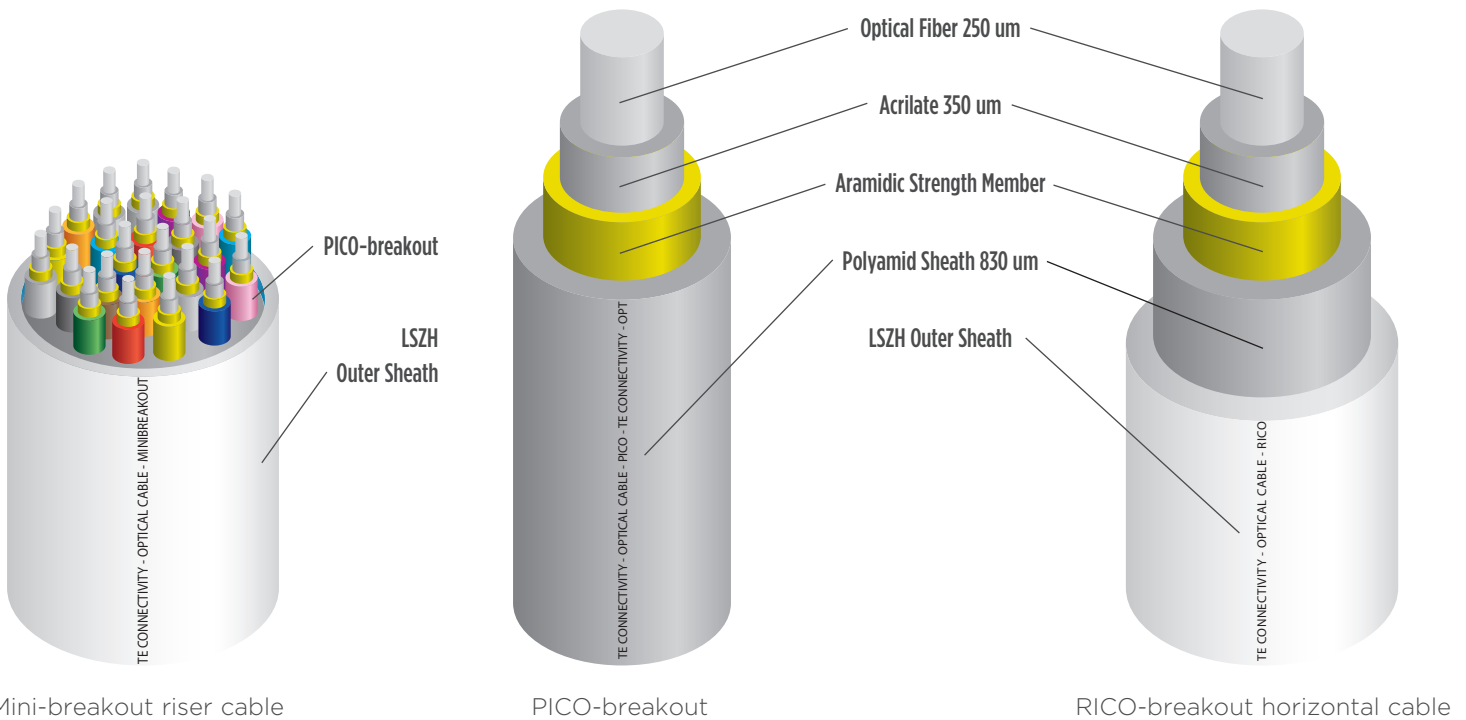
In addition to the MDU High Rise products (IFDB-M, FIST-WR2,...), TE Connectivity developed a solution to optimize the deployment of FTTH in the largest category of the Medium Rise MDU buildings in Europe, with the following features:

- Very compact to fit into small conduits and building floor access points
- Extremely flexible small diameter cables in combination with miniaturized cable accessories
- Reduced need for on-site pre-audits
- The horizontal drop cables can be pulled through existing ducts due to their reinforcement
- A reduced amount of connectivity points (splices, connectors) shortens the installation time
- The time spent inside the customer's premises is minimized
- Optimized for existing construction networks

Riser cable and horizontal cable

Riser cable features:

- Mini-breakout cable containing individually reinforced fibers called PICO breakouts of 830 micron diameter
- Diameter of 8.2 mm can exist of 12 or 24 fibers and cables with fiber bundles are available as well
- Very flexible and small diameter to be easily pulled through existing building riser infrastructures
- Can be factory-terminated with connectors in a sturdy way due to fiber reinforcements



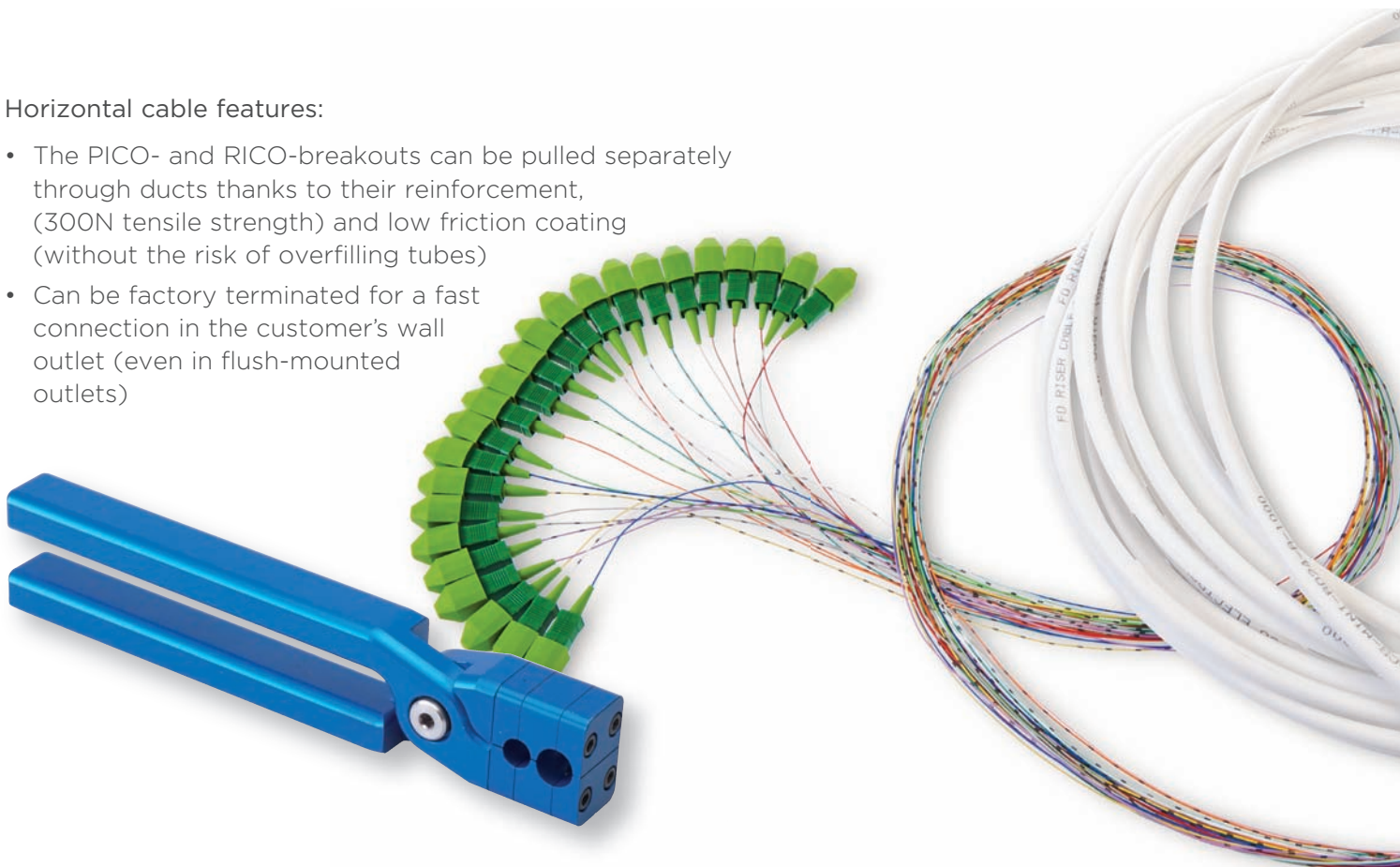
Mini-breakout riser cable

PICO-breakout

RICO-breakout horizontal cable

Horizontal cable features:

- The PICO- and RICO-breakouts can be pulled separately through ducts thanks to their reinforcement, (300N tensile strength) and low friction coating (without the risk of overfilling tubes)
- Can be factory terminated for a fast connection in the customer's wall outlet (even in flush-mounted outlets)



Building distribution

TE Connectivity offers a family of building distribution boxes depending on the size of the building, with the following features:

- Accommodated solutions for riser cables, spliced and with premounted connectors
- House splitters in case of PON architecture
- FIST fiber management solution for BUDI and FAME for the CODI family



BUDI-line (4 sizes)

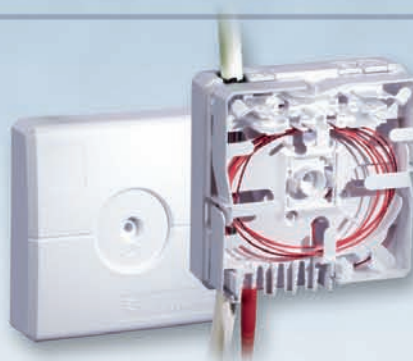
CODI-line (3 sizes)

Floor distribution

- Compatible with the TE Connectivity Mini-breakout cables and most other riser cables
- Allows a riser cable with a very small incision to be installed for fast installation times
- Capacity range from 4 to 24 fiber connections per box
- IFDB-S and YPSO fit into extremely small installation environments (floor access points)
- Most accessories are available as splice or connector plug-and-play enclosures
- LSZH and fire-retardant materials
- Compatible with multiple splice protector types



IFDB-M



IFDB-S



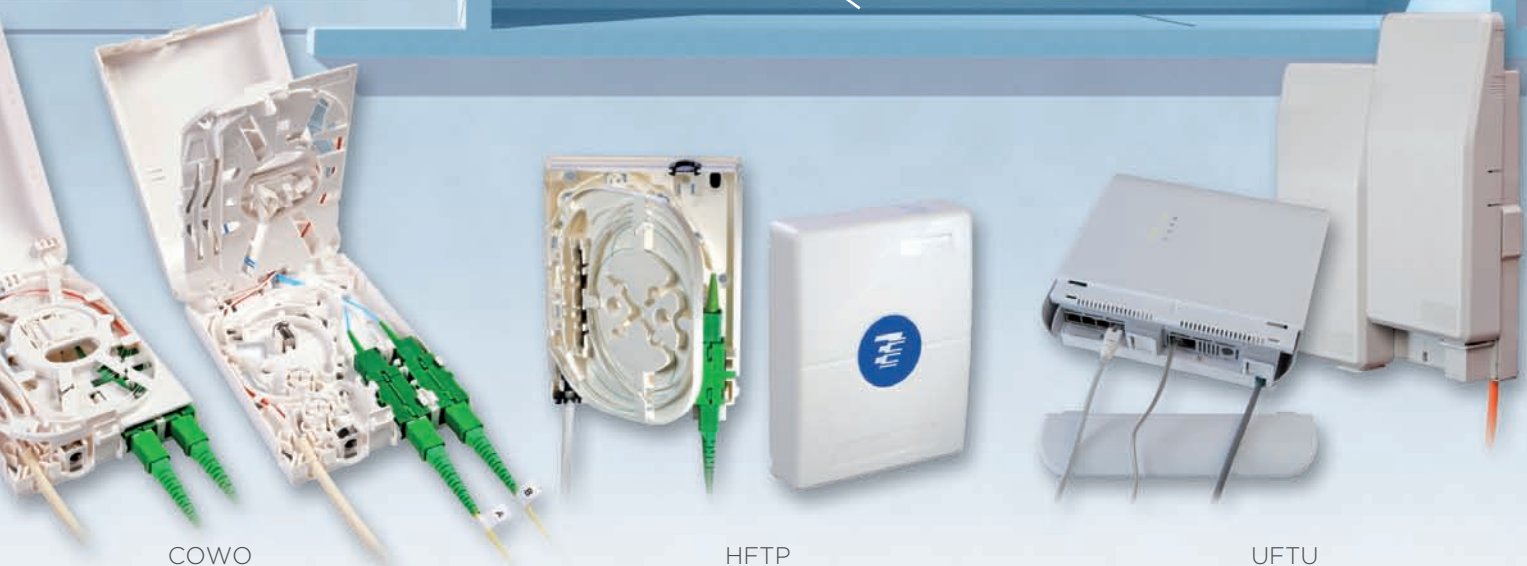
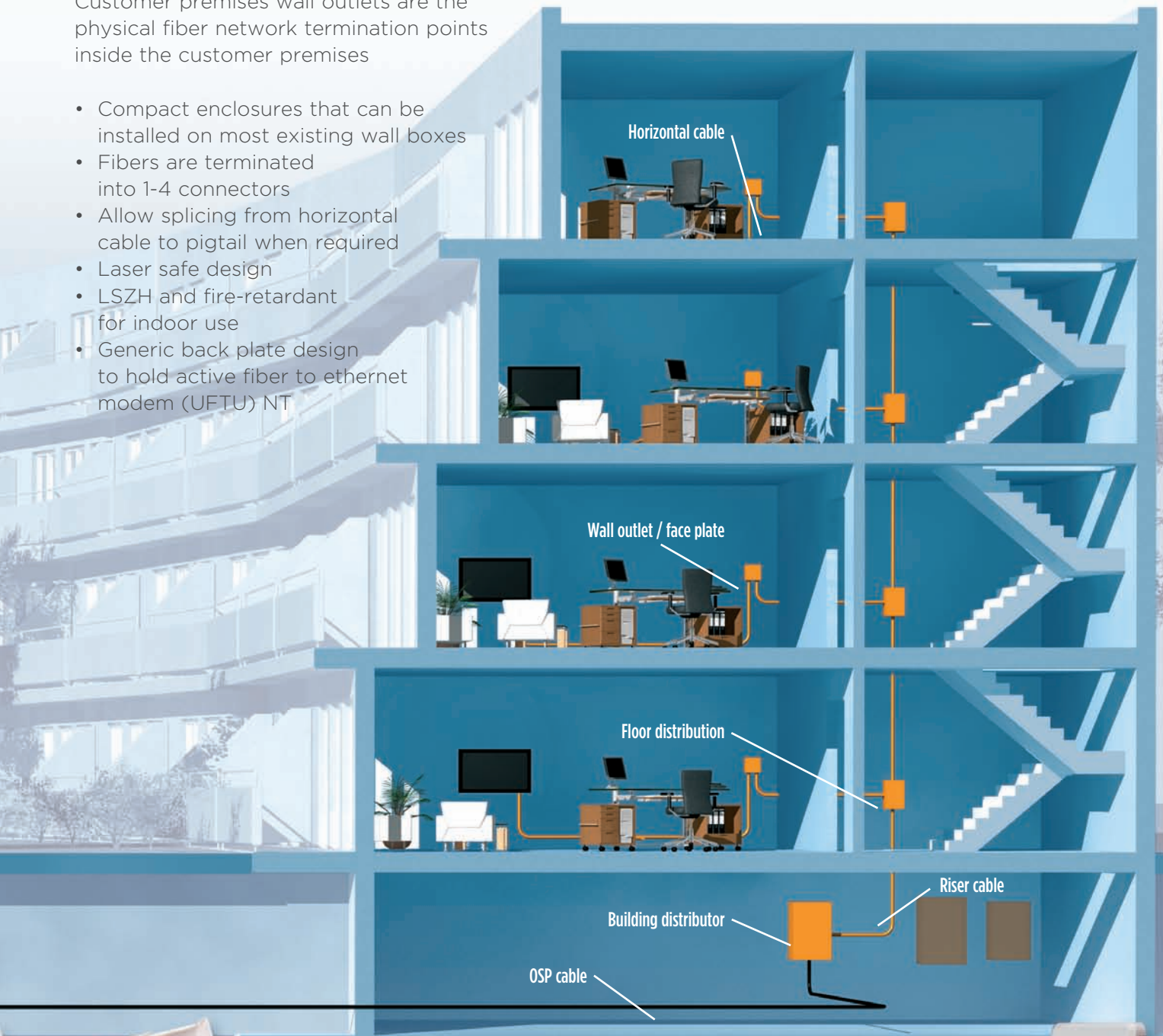
YPSO



Wall outlets

Customer premises wall outlets are the physical fiber network termination points inside the customer premises

- Compact enclosures that can be installed on most existing wall boxes
- Fibers are terminated into 1-4 connectors
- Allow splicing from horizontal cable to pigtail when required
- Laser safe design
- LSZH and fire-retardant for indoor use
- Generic back plate design to hold active fiber to ethernet modem (UFTU) NT



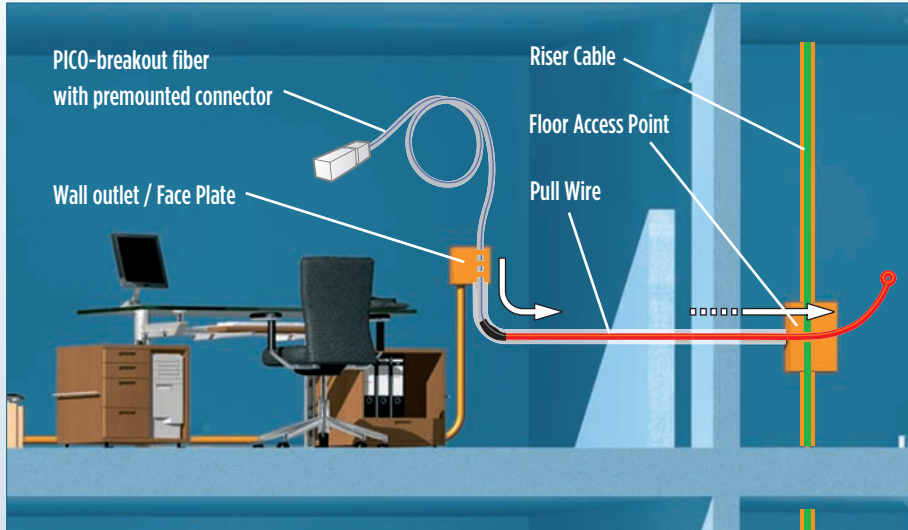
COWO

HFTP

UFTU

Technical application

Although many methods exist to reduce installation time and time spent at the customer's premises, we propose the Premises-To-Floor method.

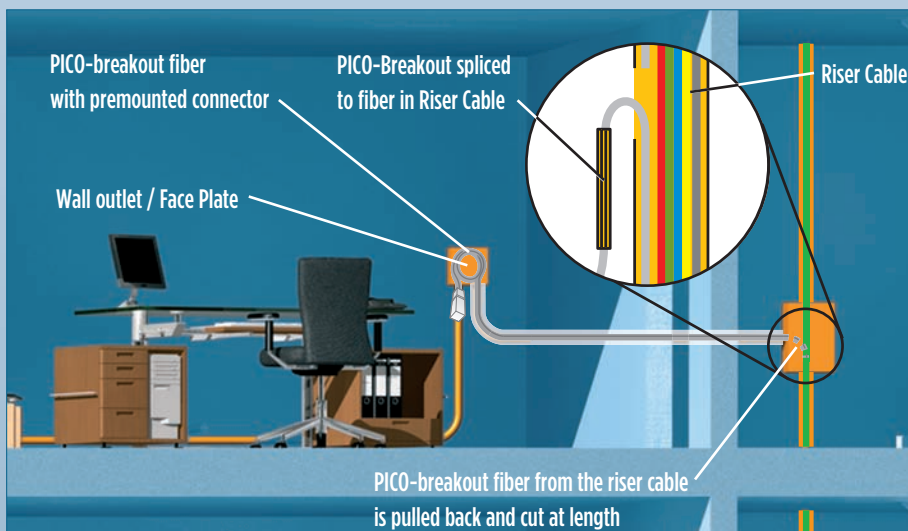


A Mini-breakout riser cable is pulled up through the building shaft or duct. At the back end of the cable, a connector can be premounted for fast connection to the building distributor located in the basement. To access a fiber at floor level, a small incision is made in the riser cable. The intended fiber is pulled out of the cable and cut at length to connect to the horizontal fiber.

Then a pull wire is pushed from the floor access point to the customer's premises outlet even before the installer enters the customer's flat.

A very compact reinforced fiber (830 micron diameter PICO-breakout or a 2.6 mm diameter RICO-breakout) with a premounted connector is attached with its fiber strength element to the pull wire and pulled back to the floor box (floor access point). RICO cable assemblies can serve as direct drop between the building distributor and the wall outlet.

Here the fiber end of the PICO- or RICO-breakout is spliced to the fiber (PICO-breakout) extracted from the riser cable.



In the field

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