

FTTX



Lose The Gel

Why 100% Dry Cable
Is The Right FTTX
Network Choice
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An OFS White Paper



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Introduction

Congratulations on your decision to invest in a new or upgraded fiber optic network to support Fiber-to-the-X (FTTX), including service to homes, businesses, and multiple dwelling units. Depending on your location and intended architecture, you will need to make several choices prior to purchasing fiber cable. The **first choice involves which optical fiber to use in the cable** that you select. Before making this decision, we suggest that you review an additional OFS white paper on “The Importance of Minimizing Hydrogen Aging Losses and Alkali Impurities”² for detailed guidance on fiber selection. We recommend OFS’ industry-leading AllWave® Zero Water Peak (ZWP) Fiber as a versatile, full-spectrum fiber that will provide high performance today along with long-term reliability and upgrade options in the future.

After selecting the optical fiber, **the second choice** that you should make is to “**Lose The Gel**” by purchasing completely dry cables.

Lose The Gel!

The OFS FTTX Design Center will assist in fine-tuning your cable selection list, based on your network architecture, number of customers, and expected growth. No matter what type of cable is needed for each network segment, we strongly recommend the purchase of **completely dry cables**. These 100%³ dry cables contain **no oils, gels, or flooding compounds**. Two excellent reasons to “**Lose The Gel**” are:

1. **Completely dry cables reduce or eliminate the time and expense of cable cleanup.** With a completely dry cable, significantly less cleaning is required when the cable is prepared for splicing and handled during installation. Dry ribbon cables completely eliminate the costly labor needed to remove gel and oil from each ribbon fiber prior to splicing. And a 100% dry cable network virtually removes the need to purchase cleaning solvents and wipes. Tools, closures, and cabinets stay cleaner as well, without exposure to oil and gels that collect dirt and dust.
2. **Dry cables are lighter in weight, making them easier to handle and less of a load on your crew and aerial plant infrastructure.** Using dry cables may mean the difference between simply installing cable and having to rebuild the poles in the aerial plant prior to installation.

OFS dry cables provide the **same industry-leading performance and compact size** as their gel-filled counterparts, plus water blocking on demand using super-absorbent polymer (SAP) powders, rather than gels or flooding compounds. Since **OFS charges no premium for this technology**, you can eliminate additional mess, weight, and time from your installation at no additional cost. Why pay for messy oils and gels when you can gain all the advantages of a 100% dry cable?

¹ Lisa Dixon is a former Marketing and Business Development Manager for Optical Fiber Cable Products at OFS.

² Available at <http://www.ofsoptics.com/>

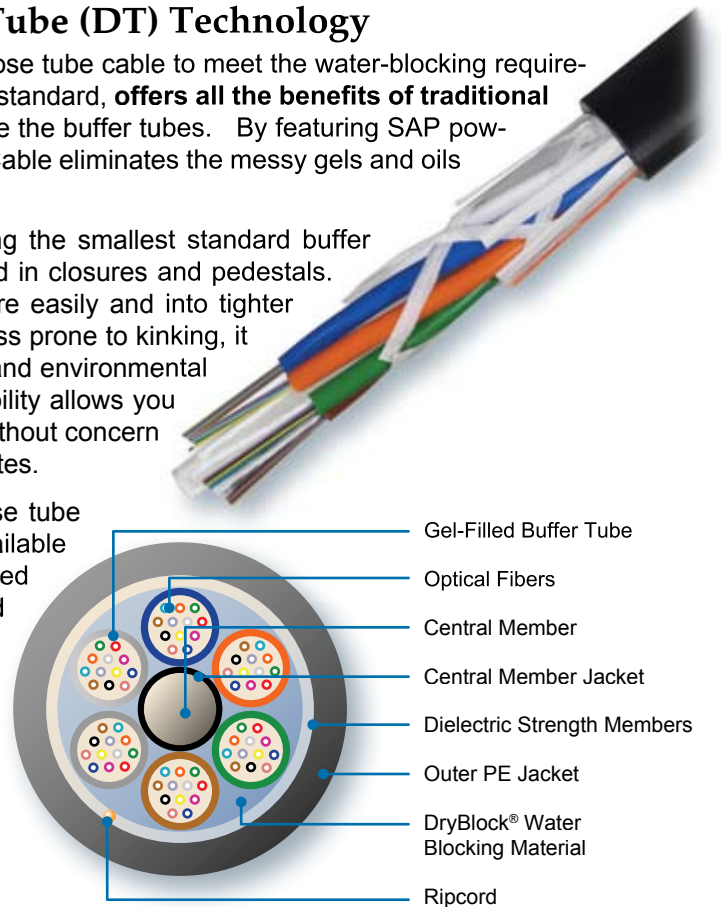
³ “100% dry” indicates that no oils, gels, or flooding compounds are used to block water penetration in the fiber optic cable sheath or core.

OFS Fortex™ DT Cable – Proven Dry Tube (DT) Technology

OFS **Fortex DT Cable**, the industry's first 100% dry loose tube cable to meet the water-blocking requirements of Telcordia's GR-20-CORE outside plant cable standard, **offers all the benefits of traditional loose tube cables and is completely dry**, even inside the buffer tubes. By featuring SAP powders to provide water blocking on demand, Fortex DT Cable eliminates the messy gels and oils that collect dirt and waste time and money.

The Fortex DT Cable's 2.5 mm buffer tubes - among the smallest standard buffer tubes in the industry - create far less bulk to be stored in closures and pedestals. OFS' smaller, more flexible buffer tubes also coil more easily and into tighter diameters. While this flexible buffer tube material is less prone to kinking, it remains durable enough to withstand the mechanical and environmental rigors of installation and operation. This rugged durability allows you to store long lengths of OFS buffer tubes in closures without concern for seasonal attenuation spikes in extremely cold climates.

More than 12 million feet of Fortex DT 100% dry loose tube cable have been installed since September 2003. Available with up to 288 fibers, Fortex DT Cable is now also listed with the Rural Utilities Service (RUS). We recommend that you place award-winning⁴ Fortex DT Cable at the top of your cable shopping list.

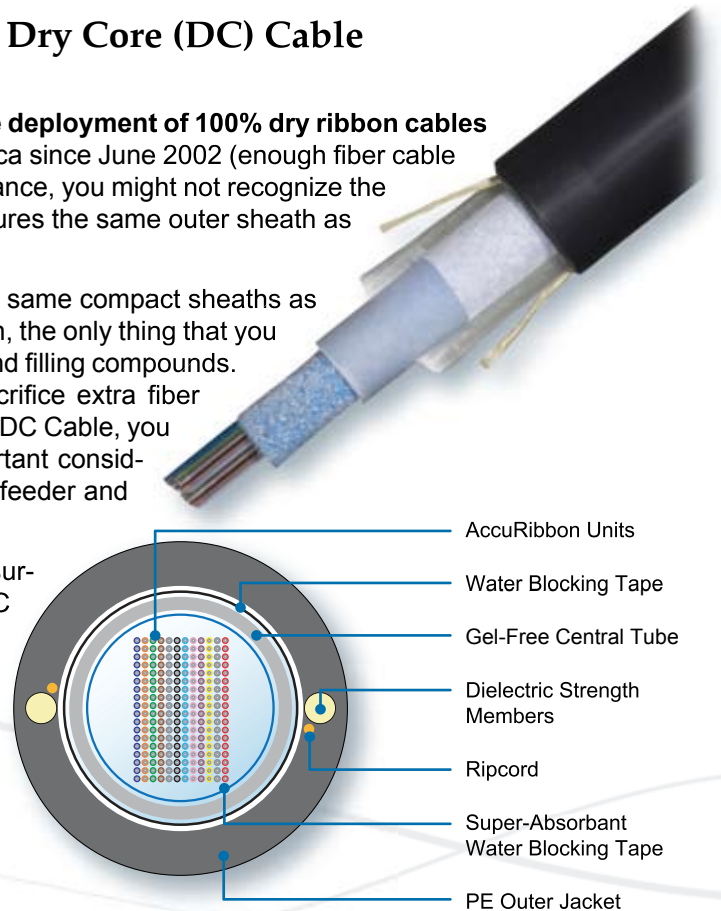


OFS AccuRibbon® DC Cable – Proven Dry Core (DC) Cable Technology

OFS' **AccuRibbon DC Cable leads the industry in the deployment of 100% dry ribbon cables** with more than 12.2 million feet installed in North America since June 2002 (enough fiber cable to connect Atlanta to Los Angeles). However, at first glance, you might not recognize the special design of an AccuRibbon DC cable since it features the same outer sheath as its cable "cousin", the gel-filled AccuRibbon LXE cable.

In fact, a number of OFS completely dry cables use the same compact sheaths as their gel-filled counterparts. With this similarity in design, the only thing that you lose by purchasing a 100% dry cable is the messy gel and filling compounds. There's no need to waste precious duct space or sacrifice extra fiber because of duct size limitations. And, with AccuRibbon DC Cable, you maintain the benefits of mass fusion splicing, an important consideration in your cable selection process, particularly for feeder and backbone routes.

Already proven in the ground, in the air, and even by surviving the ravages of Hurricane Ivan⁵, AccuRibbon DC 100% dry ribbon cables should top any cable selection list that includes cable with fiber counts greater than 96. If a ribbon cable meets your needs, we urge you to "go dry" by selecting OFS AccuRibbon DC Cable, available with up to 432 fibers in armored/metallic, dielectric, and dielectric riser-rated design options.



Mini LT Drop Cables

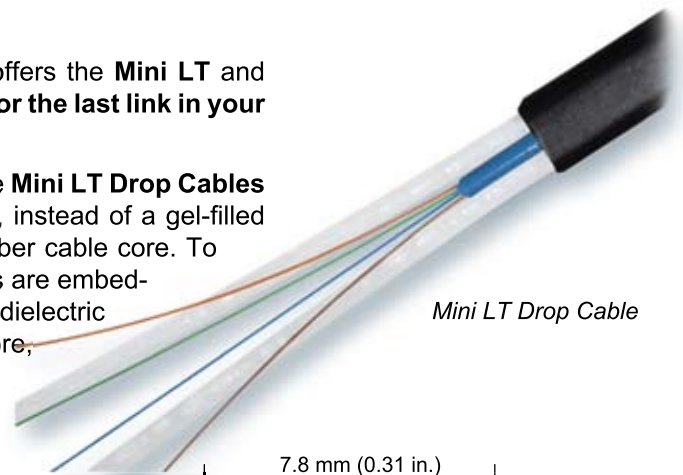
If the concept of dry cables appeals to you, OFS also offers the **Mini LT** and **Toneable Mini LT Drop Cables**, two **100% dry options for the last link in your FTTX network**.

Similar to other optical fiber drop cables on the market, the **Mini LT Drop Cables** feature a flat, primarily dielectric construction. However, instead of a gel-filled core tube, Mini LT Drop Cables use a 100% dry, solid fiber cable core. To construct the core for these cables, up to six optical fibers are embedded within a 2 mm, totally dry polymer extrusion. Two dielectric rods are then placed longitudinally alongside the dry core, diametrically positioned to each other, for added crush resistance and tensile strength.

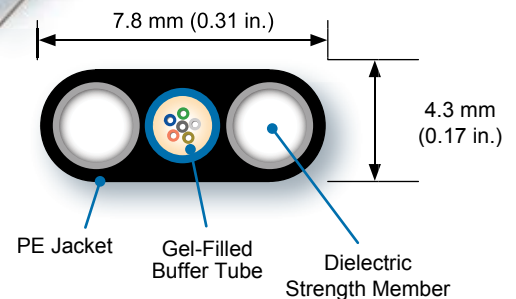
For aerial self-supporting installations, OFS recommends the standard Mini LT Flat Drop Cable, which features a high-density polyethylene (HDPE) jacket. This cable is designed to be compatible with standard aerial drop wire clamps (i.e., no cable coils are required to prevent fiber retraction). Although optimized for aerial installations, the Mini LT Flat Drop Cable is also a popular choice with customers because it is robust enough to be pushed into a cable duct. In the same way that you might “rod” a duct, Mini LT Drop Cables can be pushed into short lengths of conduit leading to the homes in your network. The HDPE jacket has proven to be incredibly robust, withstanding repeated abuse from traffic passing directly over the cable during installation and also in cases where the fiber cable must remain unburied during home construction. In summary, the **Mini LT Flat Drop Cable is tough, reliable, and 100% dry**.

The newest addition to OFS’ dry cable portfolio is the **Toneable Mini LT Drop Cable**. Designed specifically for below-grade installations (in ducts or open trenches), the Toneable Mini LT Drop Cable provides locatability and easy handling. Leveraging the same proven sheath design of OFS’ aerial, all-dielectric Mini LT Flat Drop cable, the Toneable Mini LT Drop Cable adds an easily separable 24 AWG copper wire. The jacketed 24 AWG wire is compatible with commercial outside plant cable locating equipment, but can be easily removed from the main cable sheath at termination points to route the wire to a grounding point inside or outside the network terminal or cable closure.

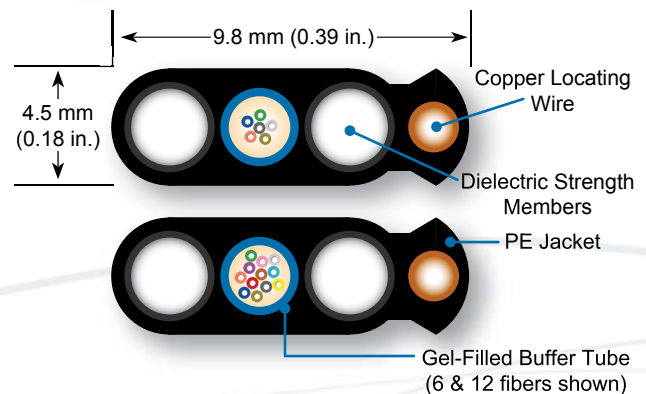
Minimizing the effort required to bond and ground the toning wire is key to reducing labor in the field, and the removal of the toning wire can be done by hand – no special tools are required. In addition, the Toneable Mini LT Cable’s webbed outer jacket is specifically designed to help ensure that removal of the toning wire does not compromise the main sheath. The result is a durable, easy-to-locate, and simple-to-handle cable solution for the last link in your FTTX deployment.



Mini LT Drop Cable



Toneable Mini LT Drop Cable



⁴ Fiber Optic Technology 2003 Tech Award Winner.

⁵ A limited amount of cable installed in the area affected by Hurricane Ivan as a part of a field trial did not show any evidence of cable damage or ribbon movement due to wind forces.

In Summary...

Whether your network requires drop, feeder, distribution, and/or backbone cable, OFS offers a full range of dry cable designs to meet your needs, and help you save time, effort, and money during installation. Contact your OFS sales representative or the OFS FTTX Design Center today to learn more.

OFS FTTX Design Center
Phone: 770-798-2423
Email: ofs@ofsoptics.com



For additional information please contact your sales representative. You can also visit our website at <http://www.ofsoptics.com> or call 1-888-fiberhelp (1-888-342-3743) from inside the USA or 1-770-798-5555 from outside the USA.

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