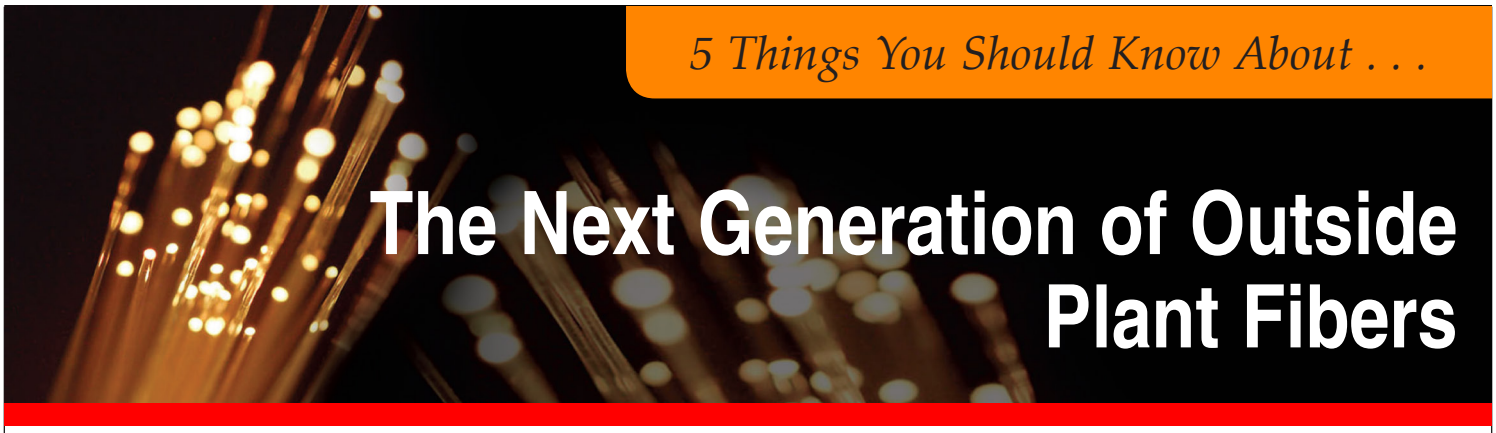

5 Things You Should Know About . . .

The Next Generation of Outside Plant Fibers

Over time, the design of outside plant single-mode optical fiber has evolved. These fibers initially operated only in the wavelengths of 1310 nm and 1550 nm. Then, in the late 1990's, single-mode fibers migrated to full-spectrum performance to help support the maximum bandwidth for Wave Division Multiplexing (WDM) systems. Today, end users value fibers offering improved macrobend performance, backward compatibility and low attenuation. As outside plant (OSP) single-mode fibers continue to change, there are five things you need to know:

1 Full-Spectrum Performance is a Requirement

OSP single-mode fibers must perform in today's networks over the entire operation window of 1270 nm to 1625 nm. These full-spectrum fibers (described in ITU-T Recommendation G.652.D) make up more than 80% of all single-mode fiber being deployed worldwide today. Most service providers want attenuation performance even lower than this ITU-T standard. Zero Water Peak (ZWP) fibers, including the OFS AllWave® Fiber family, can help end users achieve this goal.

2 Compatibility with Other OSP Fibers is Key

Compatibility can mean very different things to different fiber users. While most OSP fibers comply with ITU-T G.657.D, service providers often request fibers that exceed these properties. Almost all single-mode fiber deployed in the outside plant is spliced, and installers often use an OTDR to measure splice quality. Because OTDR measurements are extremely sensitive to mode field diameter changes, network operators can use a tight mode field diameter control near 9.2 microns to greatly simplify testing. For this reason, OFS AllWave ZWP, AllWave + and AllWave One Fibers all feature a mode field diameter of 9.2 + 0.4 microns.

3 Good Macrobend Performance is Critical

Access network operators have widely adopted macrobend-improved fibers (ITU-T G.657). The need for low optical loss across the full spectrum for deployed fiber has driven this growth. Meeting this requirement is critical to help ensure seamless operation for the next generation of Passive Optical Network (PON) applications.

Service providers are realizing that ITU-T G.657 fibers are easy to install and offer additional benefits outside the access network. End users initially adopted these fibers by installing jumpers in central offices to help prevent outages when technicians managed the passive network. To gain these same advantages, many operators now ask that all OSP cables have G.657.A1 macrobend performance.

4 Lower Loss is Essential to Support Next-Generation Applications

Most of the fiber being deployed today is ITU-T G.652.D compliant. The fiber loss requirements in this recommendation are much more relaxed than those for most installed fiber networks today. Modern optical fiber typically has a maximum cabled attenuation in the range of 0.20 – 0.25 dB/km at 1550 nm. Service providers want fiber that meets even more stringent attenuation requirements.

Two major changes have freed up more power budget for demanding systems. First, optical fibers are now available with significantly lower attenuation than the 0.3 dB at 1550 nm described in ITU-T G.652.D. Second, there is a new way to predictably determine the maximum attenuation for a deployed link.

Link Design Value (LDV) is a new method used to state attenuation. This approach can uncover 2 dB or more of hidden margin in a 100 km link.

Users can specify the link design attenuation for fiber optic cables with a maximum overall attenuation that is significantly less than the maximum cable attenuation. For example, many OFS cables support a link design attenuation of less than 0.20 dB at 1550 nm for links that are longer than 75 km, which can provide considerable benefit to the end user. Standards bodies are considering inclusion of the link design value concept in international standards. OFS helped lead the industry in developing this new and beneficial attribute.

5 Reliability is Always a Key Consideration

At OFS, we are committed to long-term product quality and reliability. Today, we continue to manufacture optical fiber at our flagship facility as we have for over 30 years. In fact, most of those optical fibers are still in service today.

What makes an optical cable reliable? First, the optical fiber parameters, such as low and stable attenuation and ultra-low polarization mode dispersion (PMD), must be maintained even under the most extreme weather conditions. Another important consideration is the quality of the raw materials selected for cable production. At OFS, we use only 100% synthetic quartz glass and durable high-quality polymers. By using these materials in a highly-controlled production process with state-of-the-art manufacturing equipment, we help assure that our fiber optic cables deployed today will continue operating as we work to meet the requirements of tomorrow's optical networks.

North America
Telephone: 508-347-8590
Toll Free: 800-799-7732
Fax: 508-347-1211
E-mail: fibersalesnar@ofsoptics.com

Asia Pacific
Telephone: +852 2506 5054
Fax: +852 2506 0166
E-mail: fibersalesap@ofsoptics.com

Caribbean, Latin America
Telephone: +1-508-347-8590
Fax: +1-508-347-1211
E-mail: fibersalescala@ofsoptics.com

Japan
Telephone: +81-3-3286-3424
Fax: +81-3-3286-3708 or 3190
E-mail: fibersalesjapan@ofsoptics.com

Europe, Middle East, Africa
Telephone: +45-43 48 3736
Fax: +45 4348 3444
E-mail: ofssalesdk@ofsoptics.com

China
Telephone: +86 10 6505 3660
Fax: +86 10 65059515
E-mail: fibersaleschina@ofsoptics.com

OFS Marketing Communications

ofs
A Furukawa Company