

# Bend-Optimized Single-Mode Fiber and the G.657 Standard

- 1 The G.657 standard was developed by the International Telecommunications Union (ITU) to provide consistency in the evolving requirements for bend-insensitive single-mode fiber. OFS was an active participant in the development of the ITU-T G.657 standard.

**What you should know:** This class of fiber enables cost reductions through compact cable designs, reduced space requirements and more relaxed deployment requirements.

It includes these G.652D-compliant designations for long-reach applications:

- G.657.A1 (10 mm minimum design radius)
- G.657.A2 (7.5 mm minimum design radius)

and these G.652-compatible designations for short-reach (< 1 km) drop applications:

- G.657.B2 (7.5 mm minimum design radius)
- G.657.B3 (5 mm minimum design radius)

- 2 As fiber deployments get closer to the consumer and the need for bandwidth grows exponentially, OFS continues to lead the way in bend-optimized fiber technology. As an innovator in optical fiber solutions, OFS has a long tradition researching optical bend capability and transforming industry-leading discoveries into real-world products.

**What you should know:** OFS' family of bend-optimized solutions includes AllWave® FLEX Fiber, the industry's first bend-insensitive zero water peak (ZWP) single-mode fiber, AllWave FLEX+ Fiber, and EZ-Bend® Optical Technology, which enables ultra bend-insensitive cables compatible with the installed base of fiber.

- 3 The industry's first full-spectrum ZWP single-mode fiber, OFS' AllWave FLEX fiber exceeds the requirements of the G.657.A standard and is fully compatible with G.652.D fibers.

**What you should know:** AllWave FLEX fiber is a truly "bend-optimized" fiber. This G.657.A1 fiber offers low attenuation, excellent macrobend performance (which also guards against any long-term reliability threat from risky bends), exceptional PMD, and is fully splice-compatible with the existing installed base of fibers.

- 4 For in-building, central office and cabinet applications, OFS developed AllWave FLEX+ fiber, the first ZWP fiber to meet and exceed both ITU-IT G.657.A2/B2 and G.652.D specifications.

**What you should know:** This fiber offers enhanced bend performance ideally suited for in-building and connectivity applications and full compatibility and compliance with the installed base of conventional G.652.D single-mode fibers. It is an excellent choice for OSP drop cables for Fiber-to-the-Home (FTTH), cell sites, enterprise networks, or any application where small bend diameters may be encountered.

- 5 Recognizing the need to speed and simplify MDU in-home wiring applications, OFS developed EZ-Bend optical technology, which allows optical cables to be bent and routed in ways never before feasible with traditional drop cables.

**What you should know:** EZ-Bend technology, a G.657.B3 solution, can be bent to a 5 mm radius and stapled, with negligible signal loss and no degradation in transmission quality, offering reliable support for such FTTH applications as high-definition television, on-demand video, ultra high speed data, voice, and online gaming.

This document is for informational purposes only and is not intended to modify or supplement any OFS warranties or specifications relating to any of its products or services.

Copyright © 2012 OFS FITEL, LLC

All rights reserved, printed in USA.



A Furukawa Company