

## Overview

BendBright™ XS fiber delivers the extraordinary bend performance of a G.657.A2 fiber, while also complying with G.652D standard single mode requirements. BendBright™ XS provides exceptional bend performance for demanding applications where A1 or even A1+ fibers fall short. BendBright XS fiber meets and exceeds the requirements of ITU G.657.A2 and G.652D and is rated for a minimum bend radius of 7.5 mm.

Apart from its use in office installations, as patch cords and/or interconnection cables, the use of the BendBright™ XS in Fiber-to-the-Home (and even longer distance) networks offers significant added value to the network installers. Bend radii in fiber guidance ports can be reduced as well as minimum bend radii in wall and corner mountings. As the fiber is very forgiving for installation errors, reduced demands for the skills of the installation engineers may further reduce the costs. Its enhanced macro-bending behavior further guarantees that all transmissions bands up to 1625 nm (L-band) will be available for future use in this hungry bandwidth environment. BendBright™ XS guarantees future proof end-to-end FTTH roll outs.

Prysmian's Advanced Plasma and Vapor Deposition (PCVD and APVD™) manufacturing process ensures the highest quality and purity of fibers. Proprietary ColorLock™ coating process further enhances the performance, durability and reliability of the fiber, even in the harshest environments.

## Features and Benefits

### Low Bending Losses

- Specified down to a 7.5 mm bend radius; 1 turn loss  $\leq 0.50$  dB @ 1550 nm.
- Allows a smaller bend radius with small diameter cables such as patch cords and distribution cables.
- Mitigates losses caused by improper installations.
- Allows the use of smaller splice trays or closures.
- Provides lower bending losses at higher wavelengths such as 1625 nm, which future proofs the network.
- Improves long-term attenuation stability by reducing losses related to temperature cycling and mid-span buffer-tube storage.

### Low Micro-Bending Loss Allows for Highly Demanding Cable Designs

### Full Industry Standards Compliance

- Fully compliant to both ITU G.657.A2 BIF and G.652.D SMF industry standards.
- Fully compliant to both IEC 60793-2-50 B-657.A2 and B-652.D SMF fiber standards.
- Fully compliant with Telcordia GR20 & GR409.
- Fully compliant with all ICEA fiber cable standards including ICEA 640, 696, & 596.
- Compliant with RUS 7 CFR 1755.900 fiber requirements.

### Full Backward ITU G.652.D SMF Compatibility

- Compliant with ITU G.652.D and IEC 60793-2-50 B-652.D low water peak SMF specifications.
- Compatible with equipment designed for G.652 fibers; fully transparent from a transmission perspective.
- Full 1260-1625 nm low water peak compliance.



# BendBright™ XS Single Mode Optical Fiber - North America

# Prysmian

## Optical Specifications (Uncabled)

Maximum Attenuation	(dB/km)*
@ 1310 nm	0.34
@ 1383 nm **	0.34
@ 1550 nm	0.20
@ 1625 nm	0.23

\* Other values on request.

\*\* Including H2-aging according to IEC 60793-2-50, type B.1.3.

Attenuation vs. Wavelength	
1285 nm to 1330 nm	$= \alpha_{1310} \pm 0.03$ dB/km
1525 nm to 1575 nm	$= \alpha_{1550} \pm 0.02$ dB/km
1460 nm to 1625 nm	$= \alpha_{1550} \pm 0.04$ dB/km

Point Discontinuities
No point discontinuity greater than 0.05 dB at 1310 nm and 1550 nm

Attenuation with Bending			
Mandrel Radius (mm)	Number of Turns	Wavelength (nm)	Attenuation (dB)
7.5	1	1625	$\leq 1.0$
7.5	1	1550	$\leq 0.5$
10	1	1625	$\leq 0.2$
10	1	1550	$\leq 0.1$
15	10	1625	$\leq 0.1$
15	10	1550	$\leq 0.03$

Cutoff Wavelength	
Cable Cutoff Wavelength ( $\lambda_{ccf}$ )	$\leq 1260$ nm

Mode Field Diameter	
1310 nm	$8.8 \pm 0.4$ $\mu$ m
1550 nm	$9.8 \pm 0.5$ $\mu$ m

Chromatic Dispersion	
Zero Dispersion Wavelength ( $\lambda_0$ )	1300-1324 nm
Slope ( $S_0$ ) at $\lambda_0$	$\leq 0.092$ ps/(nm <sup>2</sup> *km)

Polarization Mode Dispersion (PMD)	
PMD Link Design Value**	$\leq 0.06$ ps/ $\sqrt$ km
Max. Individual Fiber	$\leq 0.1$ ps/ $\sqrt$ km

\*\* According to IEC 60794-3, Ed 3 (Q=0.01%)

Geometrical Specifications	
<b>Glass Geometry</b>	
Core/Cladding Concentricity Error	$\leq 0.5$ $\mu$ m
Cladding Diameter	$125.0 \pm 0.7$ $\mu$ m
Cladding Non-Circularity	$\leq 0.7\%$
Fiber Curl	$\geq 4.0$ m radius
<b>Coating Geometry</b>	
Coating/Cladding Concentricity Error	$\leq 12$ $\mu$ m
Coating Diameter	$242 \pm 7$ $\mu$ m
Coating Non-Circularity	$\leq 6\%$

Mechanical Performance	
Minimum Proof Test	100 Kpsi (0.7 GPa); 1% strain equivalent
Tensile Strength	Median > 3.8 GPa (550 kpsi)
Dynamic Fatigue	Dynamic: Unaged & Aged*** $n_d > 20$
Coating Performance Unaged & Aged***	Average Strip Force: 1 N to 3 N Peak Strip Force: 1.2 N to 8.9 N

\*\*\*Aging: 0°C and 45°C, 30 days at 85°C and 85% RH, 30 days water immersion at 23°C, Wasp spray exposure (Telcordia)

Environmental Performance	
Environmental Test	Induced Attenuation at 1310, 1550 nm (dB/km)
Temperature Cycling (-60°C to +85°C)	$\leq 0.05$
Temperature Humidity Cycling (-10°C to +85°C, up to 98% RH)	$\leq 0.05$
Water Immersion (23°C $\pm$ 2°C)	$\leq 0.05$
Accelerated Heat Aging (85°C $\pm$ 2°C)	$\leq 0.05$
Damp Heat (85°C, 85% RH)	$\leq 0.05$

Typical Specifications	
Effective Group Index	@ 1310 nm 1.467 @ 1550 nm 1.467 @ 1625 nm 1.468
Rayleigh Backscatter Coefficient (1 ns = pulse width)	@ 1310 nm: -79.1 dB @ 1550 nm: -81.4 dB @ 1625 nm: -82.2 dB
Median Dynamic Tensile Strength (Aged at 85°C, 85% RH, 30 days; 0.5 m gauge length)	5.3 GPa (750 kpsi)

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A Brand of Prysmian Group

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