BendBright™ A2
Bend Insensitive Single Mode Fiber

Prysmian

Overview

BendBright A2 fiber delivers the extraordinary bend performance of a G.657.A2 fiber, while splicing seamlessly with G.652 and G.657.A1 fibers. This unique feature is achieved through an innovative core profile that has the same mode field diameter as a standard G.652 fiber. BendBright A2 provides exceptional bend performance for demanding applications where A1 or even A1+ fibers fall short. BendBright A2 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.

Features and Benefits

Low bending losses

- Specified down to a 7.5 mm bend radius; 1 turn loss ≤ 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.

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.
- Splice compatible with ITU G.652 SMF using standard single mode fiber machine settings.
- Full 1260-1625 nm low water peak compliance.

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TLS-DS-F-004-1120

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Performance Specifications (Uncabled Fiber)

Attenuation vs. Wavelength	
1285 nm to 1330 nm	= α_{1310} ± 0.03 dB/km
1525 nm to 1575 nm	= α_{1550} ± 0.02 dB/km

Polarization Mode Dispersion (PMD)	
Max. Value In Uncabled Fiber	≤ 0.1 ps/km$^{1/2}$
Link Design Value	≤ 0.04 ps/km$^{1/2}$

Optical Parameters	
Mode Field Diameter @ 1310 nm	9.2 ± 0.4 µm
Mode Field Diameter @ 1550 nm	10.4 ± 0.5 µm
Cabled Cut-Off Wavelength	≤ 1260 nm
Zero Dispersion Wavelength (λ)	1304 nm to 1324 nm
Chromatic Dispersion	
1550 nm	≤ 18.0 ps/(nm*km)
1625 nm	≤ 22.0 ps/(nm*km)
Zero Dispersion Slope	≤ 0.092 ps/(nm^2*km)
Point Discontinuity (1310 & 1550 nm)	≤ 0.05 dB

Attenuation with Bending			
Mandrel Radius (mm)	**Number of Turns**	**Wavelength (nm)**	**Attenuation (dB)**
7.5	1	1625	≤ 1.0
7.5	1	1550	≤ 0.5
10	1	1625	≤ 0.2
10	1	1550	≤ 0.1
15	10	1625	≤ 0.1
15	10	1550	<= 0.03

Dimensional Parameters	
Outer Coating Diameter	242 ± 7 µm
Coating/Cladding Concentricity Error	≤ 12 µm
Cladding Diameter	125.0 ± 0.7 µm
Cladding Non-Circularity	≤ 0.7%
Core-Clad Concentricity	≤ 0.5 µm
Fiber Curl	≥ 4.0 m radius

Mechanical Performance	
Minimum Proof Test	100 Kpsi (0.7 GPa); 1% strain equivalent

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

Performance Characterization	
Effective Group Index of Refraction	@ 1310 nm 1.467 @ 1550 nm 1.468
Fatigue Resistance Parameter (n_d)	20
Rayleigh Backscatter Coefficient (1 ns = pulse width)	@ 1310 nm. -77 dB @ 1550 nm. -82 dB
Core Diameter	8.2 µm

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