

Truly bend-insensitive fiber, fully backwards compatible



Single-Mode Fiber

Product Type: G.652.D, G.657.A and G.657.B
Coating Type: ColorLock^{XS} and Natural

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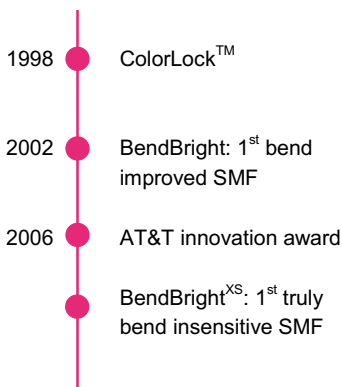
For telecom applications

- Premises
- FTTx
- Access
- Metropolitan



Value Innovation is a way of looking at the world. How we can help our customers do more, make more, save more, achieve more.

Key Industry Leading Milestones



Draka BendBright^{XS} fiber combines two attractive features: excellent low macro-bending sensitivity and low water peak level. Together they allow unlimited use of the whole telecom wavelength window for a great variety of applications. This next generation behavior has been obtained by adding a trench with a lowered refractive index in the cladding area preventing the optical field to escape. This has been designed in such a way that no compromise has been made with respect to the main transmission parameters.

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 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 guarantee that the 1625 nm window (L-band) will be available for future use in this bandwidth hungry environment.

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

The fiber fully complies with or exceeds the ITU-T Recommendations G.652.D, G.657.A and G.657.B, the IEC International Standard 60793-2-50 type B.1.3 and B.6.A&B Optical Fiber Specification and is backwards compatible with all other G.652 fiber used in current optical networks.

Features	Benefits
Low macrobending loss at very low radii (≤ 15 mm)	<ul style="list-style-type: none"> • Allows shorter radius storage of fiber over-length leading to more compact installations • Is more forgiving for installation errors in fiber management systems and or splice protection devices
Compatibility with other G.652 single-mode fiber installations	<ul style="list-style-type: none"> • The BendBright^{XS} can be spliced with similar settings of the fusion splice program as applied for other G.652 fibers • Low loss splicing of BendBright^{XS} to other G.652 fibers can be done with standard fusion splicers
Low bending at partial bends in the mm bend radius range	<ul style="list-style-type: none"> • Allows for tight in-building installations • Allows for small volume patch panel installations • Prevents fiber coating degradation in case high power systems are used in up-grading scenarios
Low microbending loss	Allows for highly demanding cable designs including ribbons

Optical Specifications (Uncabled fiber)
Attenuation

	(dB/km)
Attenuation at 1310 nm	0.33 – 0.35
Attenuation at 1383 nm*	0.32 – 0.35
Attenuation at 1460 nm	0.25
Attenuation at 1550 nm	0.19 – 0.20
Attenuation at 1625 nm	0.20 – 0.21

* Including H2-aging according to IEC 60793-2-50, type B.1.3
Other values available on request.

Attenuation vs. Wavelength

Maximum attenuation change over the window from reference		
Wavelength range (nm)	Reference λ (nm)	(dB/km)
1285 - 1330	1310	≤ 0.03
1525 - 1575	1550	≤ 0.02
1460 - 1625	1550	≤ 0.04

Point discontinuities

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

Attenuation with Bending

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

Cutoff Wavelength

Cable Cutoff wavelength (λ_{ccf})	≤ 1260 nm
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Mode Field Diameter

Wavelength (nm)	(μ m)
1310	8.5 – 9.3
1550	9.4 – 10.4

Chromatic Dispersion

Zero Dispersion Wavelength (λ_0):	1300 - 1322 nm
Slope (S_0) at λ_0 :	≤ 0.090 ps/(nm ² .km)

Polarization Mode Dispersion (PMD)

	(ps/ \sqrt km)
PMD Link Design Value**	≤ 0.06
Max. Individual Fiber	≤ 0.1

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

Geometrical Specifications
Glass Geometry

Cladding Diameter	125.0 \pm 0.7 μ m
Core/Cladding Concentricity	≤ 0.5 μ m
Cladding Non-Circularity	≤ 0.7 %
Fibre Curl (radius)	≥ 4 m

Coating Geometry

Coating Diameter	242 \pm 7 μ m
Coating / Cladding Concentricity	≤ 12 μ m
Coating Non-Circularity	≤ 5 %
Lengths	Standard lengths up to 25.2 km

Other lengths available on request

Mechanical Specifications
Proof test

The entire length is subjected to a tensile proof stress > 0.7 GPa (100 kpsi); 1% strain equivalent.

Tensile Strength

Dynamic tensile strength (0.5 meter gauge length):
Aged*** and unaged: median > 3.8 GPa (550 kpsi)
*** Aging at 85°C, 85% RH, 30 days

Dynamic and Static Fatigue

Dynamic fatigue, unaged and aged*** $n_d > 20$
Static fatigue, aged*** $n_s > 23$

Coating Performance

Coating strip force unaged and aged****:
- Average strip force: 1 N to 3 N
- Peak strip force: 1.3 N to 8.9 N
**** Aging:
• 0°C and 45°C
• 30 days at 85°C and 85% RH
• 14 days water immersion at 23°C
• Wasp spray exposure (Telcordia)

Environmental Specifications

Environmental Test	Test Conditions	Induced Attenuation at 1310, 1550 nm (dB/km)
Temperature cycling	-60°C to 85°C	≤ 0.05
Temperature-	-10°C to 85°C, 4-98% RH	≤ 0.05
Humidity cycling		
Water Immersion	14 days; 23°C	≤ 0.05
Dry Heat	30 days; 85°C	≤ 0.05
Damp Heat	30 days; 85°C; 85% RH	≤ 0.05

Typical Specifications

Nominal Zero Dispersion Slope	0.085 ps/(nm ² .km)
Effective group index @ 1310 nm	1.467
Effective group index @ 1550 nm	1.468
Effective group index @ 1625 nm	1.468
Rayleigh Backscatter Coefficient for 1 ns pulse width:	
@ 1310 nm	-79.1 dB
@ 1550 nm	-81.4 dB
@ 1625 nm	-82.2 dB

Median Dynamic Tensile Strength 5.3 GPa (750 kpsi)
(Aged at 85°C, 85% RH, 30 days; 0.5 m gauge length)