Corning® TXF™ Optical Fiber

Product Information

CORNING

Another in Corning's long line of innovative optical fiber products, Corning's TXF™ optical fiber combines both ultra-low-loss and a larger effective area to allow high-data-rate transmission to be achieved over longer spans and extended reach. TXF fiber is compliant with ITU-T Recommendation G.654.E (September 2016), a category of advanced fibers for long-haul terrestrial networks with cut-off wavelength shifted to just below the loss minimized C-band region. The superior attributes of TXF fiber allow for the provision of additional network margin that can be leveraged to extend network span lengths, skip amplification sites, upgrade to higher bit rates, add network components for improved flexibility, or lengthen the distance between regenerators. As a result, long-haul networks with TXF fiber can be designed more efficiently, removing the need for amplification sites to be placed in remote, hostile territories and minimizing the number of regenerators needed, even as higher data-rate upgrades with more stringent OSNR requirements are planned.

How to Order

Contact your sales representative, or call the Optical Fiber Customer Service Department:
Ph: 1-607-248-2000 (U.S. and Canada)
+44-1244-525-320 (Europe)
Email: cofic@corning.com
Please specify the fiber type, attenuation, and quantity when ordering.

Optical Specifications

Maximum Attenuation

Wavelength (nm)	Maximum Value (dB/km)
1550	≤ 0.17
1625	≤ 0.19

Attenuation vs. Wavelength

Range (nm)	Ref. λ (nm)	Max. α Difference (dB/km)
1525 - 1575	1550	0.02
1550 - 1625	1550	0.03

The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength (λ) by more than the value α.

Macrobend Loss

Mandrel Radius (mm)	Number of Turns	Wavelength (nm)	Induced Attenuation *(dB)
30	100	1550	≤ 0.1
30	100	1625	≤ 0.1

*The induced attenuation due to fiber wrapped around a mandrel of a specified diameter.

Point Discontinuity

Wavelength (nm)	Point Discontinuity (dB)
1550	≤ 0.05

Cable Cutoff Wavlength (λ_{cc})

$\lambda_{cc} \leq 1520$ nm

Mode-Field Diameter

Wavelength (nm)	MFD (μm)
1550	12.4 ± 0.5

Dispersion

Wavelength (nm)	Dispersion Value [ps/(nm•km)]
1550	≤ 23
1625	≤ 29

Dispersion Slope at 1550 nm ≤ 0.070 ps/(nm²•km)

Polarization Mode Dispersion (PMD)

	Value (ps/√km)
PMD Link Design Value	≤ 0.04*
Maximum Individual Fiber PMD	≤ 0.1

*Complies with IEC 60794-3: 2001, Section 5.5, Method 1, (m = 20, Q = 0.01%), September 2001.

The PMD link design value is a term used to describe the PMD of concatenated lengths of fiber. This value represents a statistical upper limit for total link PMD. Individual PMD values may change when fiber is cabled.

Dimensional Specifications

Glass Geometry

Fiber Curl	≥ 4.0 m radius of curvature
Cladding Diameter	125.0 ± 0.7 µm
Core-Clad Concentricity	≤ 0.8 µm
Cladding Non-Circularity	≤ 0.7%

Coating Geometry

Coating Diameter	242 ± 5 µm
Coating-Cladding Concentricity	≤ 12 µm

Environmental Specifications

Environmental Test	Test Condition	Induced Attenuation 1550 nm, 1625 nm (dB/km)
Temperature Dependence	-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
Heat Aging	85°C ± 2°C	≤ 0.05
Damp Heat	85°C at 85% RH	≤ 0.05

*Reference Temperature = +23°C
Operating Temperature Range: -60°C to +85°C

Mechanical Specification

Proof Test

The entire fiber length is subjected to a tensile stress ≥ 100 kpsi (0.7 GPa).

Length

Fiber lengths available up to 25.2 km/spool.

Performance Characterization Specification

Effective Area	125 µm^2 typical
Effective Group Index of Refraction (N_{eff})	1.4655 at 1550 nm
Fatigue Resistance Parameter (N_d)	20
Coating Stripping Force	Dry: 0.6 lbs. (3N) Wet, 14-day room temperature; 0.6 lbs. (3N)
Rayleigh Backscatter Coefficient (for 1 ns Pulse width)	-82 at 1550 nm

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Corning Incorporated
One Riverfront Plaza
Corning, NY 14831 U.S.A.
Ph: 607-248-2000 (U.S. and Canada)
+44-1244-525-320 (Europe)
Email: cofic@corning.com
www.corning.com/opticalfiber