

## TFO LightBend® (G.657.A1)

Based on the optimum RIP design, TFO LightBend® fibre is a full spectrum fibre with zero water peak, low attenuation and excellent uniformity, low chromatic dispersion and PMD, excellent macrobending loss at minimum radius 10mm, superior and stable geometrical size control level, this full spectrum fibre is applicable to transmission system operating over the entire wavelength from 1260nm to 1625nm. TFO LightBend® fibre meets or exceeds the ITU-T Recommendation G.657.A1 and IEC 60793-2-50 type B6.a1 Optical Fibre Specification. With the same mode field diameter as standard single mode fibre, this makes TFO LightBend® fibre fully compatible with traditional ITU-T G.652.D and IEC 60793-2-50 type B1.3 fibre and widely used in all types of optical fibre cables.

Characteristics	Conditions	Parameters	Unit
<b>Optical properties</b>			
Attenuation Coefficient	1310 nm	≤ 0.34	dB/km
	1285-1330 nm	≤ 0.37	dB/km
	1383 nm (after hydrogen aging)	≤ 0.31	dB/km
	1490 nm	≤ 0.23	dB/km
	1550 nm	≤ 0.20	dB/km
	1525 - 1575 nm	≤ 0.21	dB/km
	1625 nm	≤ 0.22	dB/km
Mode Field Diameter(MFD)	1310 nm	9.0 ± 0.3	µm
	1550 nm	10.2 ± 0.4	µm
Cut-Off Wavelength Cable Cut-Off		≤ 1260	nm
Chromatic Dispersion Zero Dispersion Wavelength Zero Dispersion Slope		1300 - 1324	nm
		≤ 0.090	ps/nm <sup>2</sup> /km
Dispersion Coefficient	1285 - 1339 nm	≤  3	ps/nm/km
	1550 nm	≤ 17	ps/nm/km
	1625 nm	≤ 21	ps/nm/km
Polarisation Mode Dispersion PMD Coefficient	Uncabled fibre	≤ 0.10	ps/√km
	PMD link design value	≤ 0.06	ps/√km
Point Discontinuity	1310 nm	≤ 0.05	dB
	1550 nm	≤ 0.05	dB
Effective Group Refractive Index	1310 nm	1.4671	
	1550 nm	1.4675	
	1625 nm	1.4680	
<b>Geometrical Properties</b>			
Core Non-circularity		≤ 6	%
Cladding Diameter		125.0 ± 0.5	µm
Core/Cladding Concentricity Error		≤ 0.4	µm
Cladding Non-Circularity		≤ 0.6	%
Coating Diameter		242 ± 5	µm
Coating/Cladding Concentricity Error		≤ 8	µm
<b>Mechanical properties</b>			
Proof Test	Fibre strain	≥ 1	%
	Fibre load	≥ 9	N
	Stress	≥ 100	kpsi
Dynamic Stress Corrosion Susceptibility Factor n <sub>d</sub>	Unaged	≥ 20	
	Aged (30 days @ 85°C, 85% R.H.)	≥ 20	
Macro Bending Sensitivity	10 turns of 15 mm radius, 1550nm	≤ 0.25	dB
	10 turns of 15 mm radius, 1625 nm	≤ 1.0	dB
	1 turns of 10 mm radius, 1550 nm	≤ 0.75	dB
	1 turns of 10 mm radius, 1625 nm	≤ 1.5	dB
Coating Strip Force	Peak value	1.3 - 8.9	N
Fibre Curl		≥ 4	m
<b>Environmental Properties</b>			
Accelerated Ageing (30days @ 85°C,85% R.H.)	Induced attenuation (1310 and 1550 nm)	≤ 0.05	dB/km
Dry heat aging (30days @ 85°C)	Induced attenuation (1310 and 1550 nm)	≤ 0.05	dB/km
Temperature Cycling (-60°C- +85°C)	Induced attenuation (1310 and 1550 nm)	≤ 0.05	dB/km
Water Soak (30 days @ 23°C)	Induced attenuation (1310 and 1550 nm)	≤ 0.05	dB/km