

C17: Properties of cabled BendBright® Singlemode fibre

Low macro bending sensitive, low water peak fibre; G.657.A1, OS2, OS1

General and application

The optical fibres are made of a high grade doped silica core surrounded by a silica cladding; They are coated with a dual layer, UV cured acrylate based coating.

This enhanced low macro bending sensitive, low water peak fibre, gives very good bending performance. The preferred use of the BendBright® fibre is in access networks. The BendBright® offers reduced bending radii for many cables types. The fibre fulfils the new ITU G.657 A1 specification (edition 2009), as well as G.652.D. The low macro bending sensitivity further guarantees that the 1625 nm window (L-band) will be available for future use in this bandwidth hungry environment

Standards and Norms

IEC/EN 60793-2-50 Category B.1.3 and B_6a	ANSI/ICEA S-87-640
ITU Recommendation G.657.A1 (2009)	EN 50 173-1:2007, cat. OS2 and OS1
ITU Recommendation G.652 designations A, B, C and D (2009)	ISO/IEC 11801:2002, cat. OS1
Telcordia GR-20-CORE	ISO/IEC 24702:2006 cat. OS2 and OS1
	IEEE 802.3 – 2002 incl. 802.3ae

Attenuation (of cable with fibres)

IEC 60793-1-40

Maximum attenuation value in the range 1310 - 1625 nm*	≤ 0.39 dB/km
Maximum attenuation value at 1550 nm	≤ 0.22 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	Max. 0.1 dB/km

* Including H2-ageing according to IEC 60793-2-50, type B.1.3, @1383nm

Group index of refraction

IEC 60793-1-22

Group index of refraction at 1310 nm and 1550 nm	1.467
Group index of refraction at 1625 nm	1.468

Other properties

IEC 60793-1-xx

Cladding diameter	IEC/EN 60793-1-20	µm	125.0 ± 0.7
Cladding non-circularity	IEC/EN 60793-1-20	%	≤ 0.7
Core (MDF) -cladding concentricity error	IEC/EN 60793-1-20	µm	≤ 0.5
Primary coating diameter – ColorLock ^{XS} and natural	IEC/EN 60793-1-21	µm	242 ± 7
Primary coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	µm	≤ 12
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈ 1 %)
Strip force (peak)	IEC/EN 60793-1-32	N	1.2 ≤ F _{peak.strip} ≤ 8.9
Static fatigue, aged n _s		-	>23
Chromatic dispersion coefficient: In the interval 1285 nm – 1330 nm At 1550 nm At 1625 nm	IEC/EN 60793-1-42	ps/km • nm	≤ 3 ≤ 18.0 ≤ 22.0
Zero dispersion wavelength, λ ₀		nm	1300 - 1322
Zero dispersion slope		ps/(nm ² • km)	≤ 0.090
Cut-off wavelength	IEC/EN 60793-1-44	λ _{cc} nm	≤ 1260 *
Mode field diameter at 1310 nm		µm	9.0 ± 0.4
Mode field diameter at 1550 nm	IEC/EN 60793-1-45	µm	10.1 ± 0.5
Macro bending loss 100 turns on a mandrel ø = 50 mm, @1310 & 1550nm 100 turns on a mandrel ø = 60 mm, @1625nm 10 turns on a mandrel R = 15 mm, @1550nm 10 turns on a mandrel R = 15 mm, @1625nm 1 turn on a mandrel R = 10 mm, @1550nm 1 turn on a mandrel R = 10 mm, @1625nm	IEC/EN 60793-1-47	dB	≤ 0.02 ≤ 0.05 ≤ 0.25 ≤ 1.0 ≤ 0.75 ≤ 1.5
Polarisation mode dispersion (PMD) coefficient, cabled	IEC/EN 60793-1-48	ps/√km	≤ 0.1
PMD _Q Link Design Value**	IEC/EN 60794-3	ps/√km	≤ 0.06

* value guaranteed by the manufacturer of fibres according to the ITU-T (ATM G650) method

** according to IEC 60794-3, Ed3 (Q=0.01%)

All measurements in accordance with ITU-T G650 recommendations.

Note: The Draka policy of continuous improvement may cause in changed specifications without prior notice