

OPTICAL FIBRE - SINGLE MODE

SM G.652.D TightBuff

PROPERTIES OF TIGHT BUFFERED SINGLEMODE FIBRE Ø900 µM
ESMF, LOW WATER PEAK SINGLE MODE FIBRE G.652.D, OS2

General and application

Tight buffered fibre consist of a 1% proof tested fibre, a dual acrylate primary coating to nominally 245 µm and a secondary buffer to 900 µm. The buffer is extruded around the primary buffer in order to make a versatile, and robust buffering system.

The buffer material consists of a low smoke and fumes, zero halogen flame retardant compounds. The buffer material fulfils or exceeds the requirements of IEC 60290-2-27 as well as is complies with the EU RoHS requirements. It contains a high amount of advanced flame retardant fillers giving the buffer very good properties in case of burning.

The buffer alone may be removed over a length of more than 1000 mm to the primary coating. The primary coated fibre is thereafter, available for splicing. The primary coating may then in a second step be mechanically stripped to the 125 µm glass diameter.

The combined coating and buffer may be removed to the 125 µm glass cladding diameter in one operation with ease and low force. Stripping is thus done in bites of 15–25 mm.

The intended use of this tightly buffed fibre is pigtails. The buffered fibre may also be manufactured to patch-cords and be used as an element in cables (Riser and Break-out). The buffer may be coloured to any colour of IEC 60304.

This enhanced single mode fibre also provides improved performance across the entire 1260 nm to 1625 nm wavelength spectrum due to its low attenuation in 1383 nm, the water-peak region.

Standards and norms

IEC 60793-2-50 Category B.1.3
ISO/IEC 11801 and ISO/IEC 24702: Cat. OS2 and OS1
AS/NZS 3080 IEC 60290-2-27
ITU-T Recommendation G.652 D

Specifications
Attenuation of cabled fibre

Attribute	Measurement method	Units	Limits
Maximum attenuation value of cable @ 1310 nm	IEC 60793-1-40	dB/km	0.4
Maximum attenuation value of cable @ 1383 nm		dB/km	0.4
Maximum attenuation value of cable @ 1550 nm		dB/km	0.3
Maximum attenuation value of cable @ 1625 nm		dB/km	0.3
Point discontinuity @ 1310 nm and 1550 nm		dB	Max 0.1

Group index of refraction

Attribute	Measurement method	Values
Effective group index at 1310 and 1383 nm	IEC 60793-1-22	1.467
Effective group index at 1550 and 1625 nm		1.468

OPTICAL FIBRE – SINGLE MODE – SM G.652.D TIGHTBUFF**Specifications**

Optical properties			
Attribute	Measurement method	Units	Limits
Mode field diameter at 1310 nm	IEC60793-1-45	µm	9.2 ± 0.4
Mode field diameter at 1550 nm		µm	10.4 ± 0.5
Chromatic dispersion coefficient:			
In the interval between 1285 nm and 1330 nm	IEC60793-1-42	ps/km.nm	≤ 3.5
@ 1550 nm		ps/km.nm	≤ 18
@1625 nm		ps/km.nm	≤ 22
Zero dispersion wavelength λ_0		nm	1302 to 1322
Zero dispersion slope @ λ_0		ps/(nm ² .km)	≤ 0.092
Cut-off wavelength λ_{cc}	IEC60793-1-44	nm	≤ 1260*

* Guaranteed value according to the ITU-T (ATM G650) method.

Geometrical properties			
Attribute	Measurement method	Units	Limits
Cladding diameter	IEC60793-1-20	µm	125.0±0.7
Cladding non-circularity		%	≤ 0.7
Core (MDF) - cladding concentricity error		µm	≤ 0.5
Primary coating diameter	IEC60793-1-21	µm	242±7
Primary coating non-circularity		%	≤ 5
Primary coating – cladding concentricity error		µm	≤12
Secondary coating diameter			900±50

Mechanical properties			
Attribute	Measurement method	Units	Limits
Proof stress level	IEC60793-1-30	Gpa	≥ 0.7 (1% strain)
Fibre curl radius	IEC60793-1-34	m	>4
Strip force (peak)	IEC60793-1-32	N	1.2 ≤ F _{peakstrip} ≤ 8.9
Dynamic fatigue resistance aged and unaged	IEC60793-1-33	N _d	≥ 20
Static fatigue resistance	IEC60793-1-33	N _s	≥ 23

All measurements in accordance with ITU-T G650 recommendations.

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