

Single Mode Optical Fibre (SMF)

Product Type: G.652.B
Coating Type: Natural

Draka Comteq Single Mode Fibre (SMF) provides optimum performance in both the 1310 nm and 1550 nm

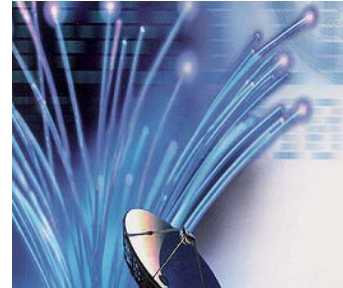
wavelength operating ranges (including the 1565-1625 nm L-band), with a low dispersion in the 1310 nm window.

It can be used in all cable constructions, including loose tube, tight buffered, ribbon, and central tube designs.

It supports long haul, metropolitan, access and premises applications in telecommunications, CATV, utility and intelligent traffic networks.

Draka Comteq's Advanced Plasma and Vapor Deposition (APVD™) manufacturing process ensures the highest quality and purity of fibers.

Proprietary Draka Comteq coating process further enhances the performance, durability and reliability of the fibre, even in the harshest environments.



The fibre complies with or exceeds the ITU-T Recommendation G.652.B, the IEC Int. Standard 60793-2-50 type B.1.1 Optical Fibre Specification, Telcordia GR-20-CORE, ANSI/ICEA S-87-640 and RUS 7CFR 1755.900.

Features	Benefits
Low attenuation and dispersion; highly efficient for O-band (1260-1360 nm), C- and L-band (1530-1625 nm)	> Support all applications
Fully compatible with other fibres in terms of transmission, connections and installation tools	> Open standards for multi-sourcing worldwide
Easy to strip, using both mechanical and heat-stripping techniques	> Easier, faster and more secure connections
Proprietary APVD™ manufacturing process	> Superior geometry, uniformity and purity
Revolutionary Draka Comteq coating process	> Increased reliability, durability, and superior aging performance, resulting in lower maintenance and replacement costs

Draktel Optical Fibre

Brasil:
Tel: + 55 15 3212-6801
Fax: +55 15 3212-681

Email: draktelsales@draktel.com.br
Website: www.draktel.com.br

Optical Specifications (uncabled fiber)

Attenuation (dB/km)	Max Value Range
Attenuation at 1310 nm	0.33 – 0.35
Attenuation at 1550 nm	0.19 – 0.22

Attenuation vs. Wavelength

Maximum attenuation change over the window from reference

Wavelength (nm)	Reference λ (nm)	Change (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 or 1550 nm

Attenuation with Bending

100 turns, 50mm diameter @ 1310 nm	≤ 0.05 dB
100 turns, 50mm diameter @ 1550 nm	≤ 0.05 dB
100 turns, 60mm diameter @ 1625 nm	≤ 0.05 dB

Cutoff Wavelength

Fiber Cutoff Wavelength (λ_c) (nm)	1150-1330
Cable Cutoff wavelength (λ_{cct}) (nm)	≤ 1260

Mode Field Diameter

Wavelength (nm)	MFD (μ m)
1310	9.2 ± 0.4
1550	10.3 ± 0.5

Chromatic Dispersion

Wavelength (nm)	Dispersion (ps/nm ² *km)
1285-1330	$\leq 3 $
1550	≤ 18.0
1625	≤ 22.0
Zero dispersion wavelength (λ_0)	1300 – 1322 nm
Slope (S_0) at λ_c	≤ 0.090 ps/(nm ² .km)

Polarization Mode Dispersion (PMD)

PMD link design value**	≤ 0.1 ps/√km
Max individual fiber	≤ 0.20 ps/√km
** According to IEC 60794-3, Ed 3 (Q=0.01%)	

Geometrical Specifications

Glass Geometry

Cladding diameter	125.0 ± 1 μ m
Core/Cladding Concentricity	≤ 0.6 μ m
Cladding non-circularity	≤ 1.0 %
Fibre Curl (radius)	≥ 4 m

Coating Geometry

Coating Diameter	242 ± 7 μ m
Coating/Cladding Concentricity	≤ 12 μ m
Coating non-circularity	≤ 5 %

Lengths Standard lengths up to 50.4 km

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	$N_d \geq 20$ unaged and aged***
Static Fatigue	$N_s \geq 23$ aged***

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 (0.2 lbf to 2.0 lbf)

**** 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

Induced attenuation @ 1310, 1550 nm	(dB/km)
Temperature cycling performance (-60°C to 85°C)	≤ 0.05
Temperature humidity cycling (-10°C to 85°C, 4-98% RH)	≤ 0.05
Water immersion (23°C, 14 days)	≤ 0.05
Dry heat (85°C, 30 days)	≤ 0.05
Damp heat (85°C, 85% RH, 30 days)	≤ 0.05

Typical Characterization Values

Nominal zero dispersion slope	0.085 ps/nm ² *km	
Effective group index	@ 1310 nm	1.467
	@ 1550 nm	1.468
	@ 1625 nm	1.468
Backscatter coefficient (1 NS pulse width)	@ 1310 nm	- 79.4 dB
	@ 1550 nm	- 81.7 dB
	@ 1625 nm	- 82.5 dB

Median dynamic tensile strength 750 kpsi (5.3 GPa)
(aged at 85°C, 85% RH, 30 days, 0.5 m gauge length)