



X Internal External Grade

X Sequentially Metre Marked

X G.652.D Construction

X OS2 Performance

Features

- Internal External Grade
- G.652.D Construction
- LSOH Black Sheath
- OS2 Performance
- Sequentially Metre Marked
- 9/125 Singlemode Fibre
- Cut to length service

Product Overview

Excel tight buffered optical fibre cables have been designed specifically for internal and external applications. These compact, lightweight cables are extremely flexible and are quick and easy to install. The cables are constructed around E-Glass roving strength containing buffered 9/125 fibres, covered with a flame retardant, low smoke zero halogen, UV stabilised outer sheath. The improved construction and optical fibre core has resulted in this tight buffer cable performing to Category OS2.



Performance Overview

Excel singlemode fibre optic cables 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 Single mode fibre 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.

Cores Colours

1. Red	2. Green	3. Blue	4. Yellow
5. White	6. Grey	7. Brown	8. Violet
9. Turquoise	10. Black	11. Orange	12. Pink
13. Yellow with mark every 70 mm	14. White with mark every 70 mm	15. Grey with mark every 70 mm	16. Turquoise with mark every 70 mm
17. Orange with mark every 70 mm	18. Pink with mark every 70 mm	19. Yellow with mark every 35 mm	20. White with mark every 35 mm
21. Grey with mark every 35 mm	22. Turquoise with mark every 35 mm	23. Orange with mark every 35 mm	24. Pink with mark every 35 mm

Physical Properties

Property	Test method	Value	
Permanent tensile strength	IEC 60794-1-2 E11	4, 6, 8 & 12 cores	500 N
		16 cores	1000 N
		24 cores	1500 N
Short term tensile strength (some days)	IEC 60794-1-2 E11	4, 6, 8 & 12 cores	1000 N
		16 cores	1400 N
		24 cores	1600 N
Maximum installation load (a few hours)		4, 6, 8 & 12 cores	1500 N
		16 cores	2100 N
		24 cores	2400 N
Impact	IEC 60794-1-2 E4	20 J	
Crush (compressive strength)	IEC 60794-1-2 E3	3000 N / 100 mm	
Torsion	IEC 60794-1-2 E7	5 cycles ± 1 turn	
Temperature range	IEC 60794-1-2 F1	Operation & installation	-20°C to +70°C
		Storage	-40°C to +70°C

Property	4 Core	6 Core	8 Core	12 Core	16 Core	24 Core
Heat of combustion	760 MJ/km	845 MJ/km	970 MJ/km	1180 MJ/km	1400 MJ/km	1700 MJ/km
	0.21 KWh/m	0.23 KWh/m	0.29 KWh/m	0.33 KWh/m	0.39 KWh/m	0.47 KWh/m
Nominal diameter	6.5 mm	6.6 mm	7.0 mm	7.0 mm	8.0 mm	8.5 mm
Nominal cable weight	34 kg/km	36 kg/km	39 kg/km	43 kg/km	52 kg/km	63 kg/km
Minimum bend radius						
	Long term	100 mm	100 mm	100 mm	130 mm	130 mm
Short term	50 mm	50 mm	50 mm	75 mm	75 mm	115 mm

Property		
Fibre	Tight buffered fibres 900 µm ± 50 µm	
Strength member	E-Glass rovings	
Jacket	1.1 mm black, Halogen free, flame resistant thermoplastic sheathing compound acc. to EN 50290-2-27, UV stabilised	
Fire rating	IEC 60332-1-2	Single vertical wire test
	IEC 60754-1	No halogens
	IEC 60754-2	No acid matters
	IEC 61034-2	No dense smoke

Performance Properties

Cable attenuation	IEC 60793-1-40
Maximum attenuation value of cable in the interval 1310 nm - 1625 nm	≤ 0.39 dB/km
Maximum attenuation value of cable at 1550 nm	≤ 0.25 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	Max. 0.1 dB/km

Group index of refraction	IEC 60793-1-22
Effective group index at 1310 nm	1.467
Effective group index at 1550 and 1625 nm	1.468

Standards and Norms	
IEC / EN 60793-2-50 Category B.1.3	EN 50 173-1:2007, cat. OS2 and OS1
ITU-T Recommendation G.652.D and C, B, A	ISO / IEC 11801:2002, cat. OS1
IEEE 802.3 - 2002 incl. 802.3ae	ISO / IEC 24702: 2006, cat. OS2 and OS1

Property	Standard	Value
Cladding diameter	IEC / EN 60793-1-20	125.0 ± 0.7 µm
Cladding non-circularity	IEC / EN 60793-1-20	≤ 0.7 %
Core - cladding concentricity error	IEC / EN 60793-1-20	≤ 0.5 µm
Primary coating diameter - coloured and natural	IEC / EN 60793-1-21	242 ± 7 µm
Primary coating non-circularity	IEC / EN 60793-1-21	≤ 5 %
Primary coating - cladding concentricity error	IEC / EN 60793-1-21	≤ 12 µm
Chromatic dispersion coefficient:	IEC / EN 60793-1-42	
	In the interval 1285 nm - 1330 nm	≤ 3 ps/km • nm
	At 1550 nm	≤ 18.0 ps/km • nm
	At 1625 nm	≤ 22.0 ps/km • nm
Zero dispersion wavelength, λ ₀		1300 - 1322 nm
Zero dispersion slope>		≤ 0.090 ps/(nm ² • km)
Cut-off wavelength	IEC / EN 60793-1-44	≤ 1260 λ _{cc} nm *
Mode field diameter at 1310 nm	IEC / EN 60793-1-45	9.0 ± 0.4 µm
Mode field diameter at 1550 nm		10.1 ± 0.5 µm
Macrobending loss	IEC / EN 60793-1-47	
	100 turns on a ø 50 mm mandrel at 1310 and 1550 nm	≤ 0.05 dB
	100 turns on a ø 60 mm mandrel at 1625 nm	≤ 0.05 dB
Polarisation mode dispersion (PMD) coefficient, max. uncabled	IEC / EN 60793-1-48	≤ 0.5 ps//km
PMD _Q Link Design Value (calculated with Q=0.01%, N=20)	IEC / EN 60794-3	≤ 0.2 ps//km
Proof stress level	IEC / EN 60793-1-30	≥ 0.7 (= 1 % strain) Gpa
Fibre curl radius	IEC / EN 60793-1-34	> 4 m
Strip force (peak)	IEC / EN 60793-1-32	1.2 ≤ F _{peak.strip} ≤ 8.9 N
Dynamic fatigue resistance aged and unaged (N _d)	IEC / EN 60793-1-33	≥ 20
Static fatigue resistance (N _s)	IEC / EN 60793-1-33	≥ 23

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

Typical Applications

- 1000BASE-LX ■ 10GBASE-LX4 ■ 10GBASE-LR/LW ■ 10GBASE-ER/EW
- 40GBASE-LX ■ 100GBASE-LX4 ■ 100GBASE-ER4
- 155 ATM ■ 622 ATM ■ 531 Fibre Channel ■ 1062 Fibre Channel

Part Number Information

Part No.	Description
205-320	Internal/External Grade Tight Buffered Fibre Cable 4 Core 9/125 OS2
205-230	Internal/External Grade Tight Buffered Fibre Cable 6 Core 9/125 OS2
205-322	Internal/External Grade Tight Buffered Fibre Cable 8 Core 9/125 OS2
205-324	Internal/External Grade Tight Buffered Fibre Cable 12 Core 9/125 OS2
205-326	Internal/External Grade Tight Buffered Fibre Cable 16 Core 9/125 OS2
205-328	Internal/External Grade Tight Buffered Fibre Cable 24 Core 9/125 OS2

System Warranty

The Excel System Warranty provides a 25-year product and applications assurance of compliance with the industry performance standard appropriate to the class of cabling installed. The warranty may be applied for by an accredited Excel Partner who has designed, supplied and installed the said system.



axilan

c.so santorre di santarosa 36, cuneo, Cuneo, 12100, Italia
 Tel: +390171692038
 Email: info@axilan.it Web: www.axilan.it



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www.excel-networking.com