



Prostal Limited.

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TECHNICAL SPECIFICATION

Conventional Optic Fiber Cable

(According to ITU-T G.657)

SPEC No.: PRO 12-25572

REVISION: 1.4.072014, Date: July 25, 2014

1. GENERAL

1.1 SCOPE

This listed specification covers the design requirements and performance standard for the supply of optical fiber cable in the industry. It also includes our premium designed cable with optical, mechanical and geometrical characteristics.

Cable type	Application
FTTH Cable	Indoor or Outdoor installation cable

1.2 Cable Description

Our cable possesses high tensile strength and flexibility in compact cable sizes. At the same time, it provides excellent optical transmission and physical performance.

1.3 Quality

Excellent quality control is achieved through intense in-house quality check and stringent audit acceptance by ISO 9001.

1.4 Reliability

Initial and periodic product qualification tests for performance and durability are performed rigorously to ensure product reliability.

1.5 Reference

The cable which we offered are designed, manufactured and tested according to international standards as follows:

IEC 60793-1	Optical fiber Part 1: Generic specifications
IEC 60793-2	Optical fiber Part 2: Product specifications
IEC 60794-2	Optical fiber cables-part 2 indoor cables- sectional specification
EIA/TIA 598	Color code of fiber optic cables
ITU-T G.650	Definition and test methods for the relevant parameters of single-mode fibers
ITU-T G.652	Characteristics of a single-mode optical fiber cable
ITU-T G.655	Characteristics of a non-zero dispersion-shifted single-mode optical fiber and cable



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2. OPTICAL FIBER

Category	Description	Specifications	
Optical Specifications	Attenuation @1310 nm	≤0.35 dB/km	≤0.40 dB/km
	Attenuation @1383 nm(After aging hydrogenation)	≤0.35 dB/km	≤0.38 dB/km
	Attenuation @1550 nm	≤0.21 dB/km	≤0.28 dB/km
	Attenuation @1625 nm	≤0.23 dB/km	≤0.30 dB/km
	Dispersion coefficient	@1288~1339nm ≤3.5ps/nm·km @1271~1360nm ≤5.3ps/nm·km @1550nm ≤18ps/nm·km @1625nm ≤22ps/nm·km	
	Zero Dispersion Wavelength	1300~1324 nm	
	Zero Dispersion Slope	≤ 0.092 ps/nm ² ·km	
	Cable Cutoff Wavelength (λ_{cc})	≤1260 nm	
	PMD (Max. Individual Value)	≤0.1 ps/√ km	
	Macro bending Loss (1 turns; Φ20 mm) @1550 nm (1 turns; Φ20 mm) @1625 nm	≤ 0.3 dB ≤ 1.0 dB	
	Mode Field Diameter @1310 nm	8.6±0.4μm	
Dimensional Specifications	Cladding Diameter	125±0.7μm	
	Cladding non circularity	≤0.7%	
	Cladding / coating concentricity error	≤12μm	
	Core/clad concentricity error	≤0.5μm	
Mechanical Specification	Proof stress	≥0.7Gpa	

G657A1 fiber (Brand:Corning)

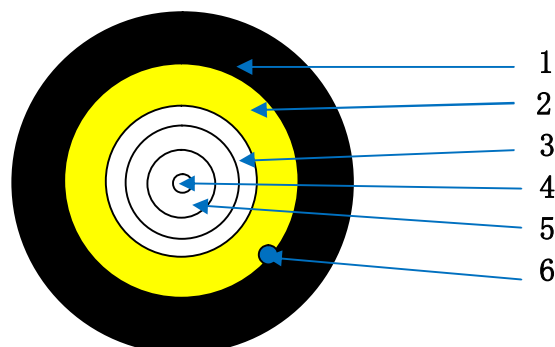


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3. CABLE STRUCTURE



Technical Characteristics

- Low weight, non jelly, easy to install and joint
- Flame retardant LSZH/FR-PE sheath

Structure:

1. Sheath(LSZH,Black) 1.0
2. Kelvla (8*3160dtex)
3. Fiber unit(LSZH, White)2.0
4. Green Fiber, Corning
5. Tight buffered (LSZH, White)0.9mm
6. Ripcord (White)

Dimension & Properties

Features	Fiber count	1 G657A1
	Cable OD	5.0 mm
	Cable weight	Appro.12 kg/km
	Operation temperature range	-20 deg C to + 60 deg C
	Installation temperature range	-10 deg C to + 50 deg C
	Transport and storage temperature range	-20 deg C to + 60 deg C
Performance	Max. tensile load	800N
	Crush resistance	800 N/10cm
	Minimal installation bending radius	12 x OD
	Minimal operation bending radius	10 x OD

Note: 1. The nominal cable weight may vary by $\pm 10\%$.

4. TEST REQUIREMENTS

Approved by various professional optical and communication product institution, We also conduct various in-house testing in its own Laboratory and Test Center. She also conduct test with special arrangement with the Chinese Government Ministry of Quality Supervision & Inspection Center of Optical Communication Products (QSICO). We possess the technology to keep its fiber attenuation loss within Industry Standards.

The cable is in accordance with applicable standard of cable and requirement of customer. The following test items are carried out according to corresponding reference.



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No	Item	Reference
Routine tests of optical fiber		
1	Mode field diameter	IEC 60793-1-45
2	Mode field Core/clad concentricity	IEC 60793-1-20
3	Cladding diameter	IEC 60793-1-20
4	Cladding non-circularity	IEC 60793-1-20
5	Coating Diameter	IEC 60793-1-21
6	Attenuation coefficient	IEC 60793-1-40
7	Chromatic dispersion	IEC 60793-1-42
8	Cable cut-off wavelength	IEC 60793-1-44

4.1 Tension

IEC 60794-1-E1

Sample length	No less than 50 meters
Load	Max. tensile load
Duration time	10 minutes
Test results	Fiber strain $\leq 0.6\%$ No damage to outer jacket and inner elements

4.2 Crush

IEC 60794-1-E3

Plate size	100mm length
Load	Crush load
Duration time	5 minutes
Test number	3
Test results	Additional attenuation: $\leq 0.4\text{dB}$ No damage to outer jacket and inner elements

4.3 Impact

IEC 60794-1-E4

Impact energy	1J
Radius	12.5mm
Impact points	1
Impact number	1
Test result	Additional attenuation: $\leq 0.4\text{dB}$ No damage to outer jacket and inner elements



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4.4 Repeated bending

IEC 60794-1-E6

Sample length	1m
Bending radius	20*D
Cycles	25
Test result	Additional attenuation:≤0.4dB

4.5 Torsion

IEC 60794-1-E7

Sample length	2m
Angles	±90 degree
cycles	10
Load	50N
Test result	Additional attenuation:≤0.4dB No damage to outer jacket and inner elements

4.6 Bending

IEC 60794-1-E11

Mandrel diameter	20*D
Turn number	4
Cycles	5
Temperature	20 °C
Test result	Additional attenuation:≤0.4dB No damage to outer jacket and inner elements