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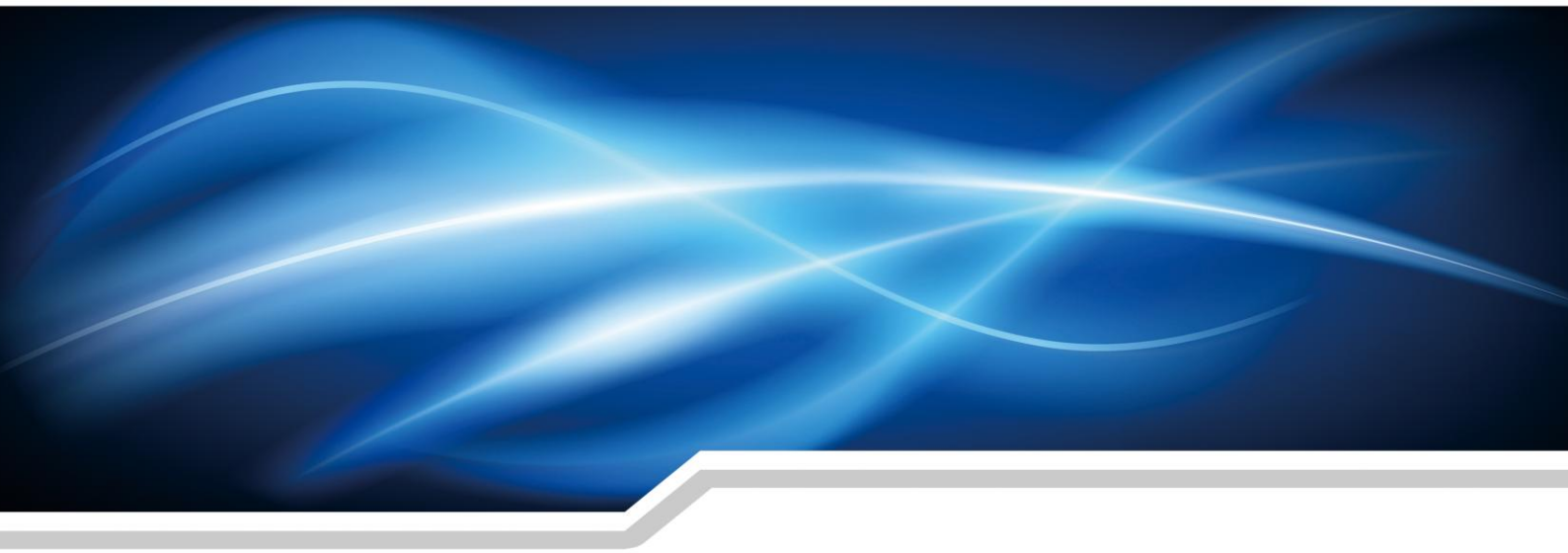
Your Partner in Cable

TECHNICAL SPECIFICATION

Indoor Optical Fiber Cable



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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 ZTT premium designed cable with optical, mechanical and geometrical characteristics.

Cable type	Application
OFC-1G.652D-FDC-S3	Indoor installation cable

1.2 Cable Description

ZTT 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 ZTT 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
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 and cable
EIA/TIA 598	Color code of fiber optic cables

2. Optical Fiber

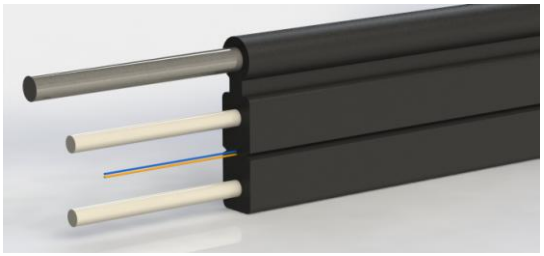
The optical fiber is made of high pure silica and germanium doped silica. UV curable acrylate material is applied over fiber cladding as optical fiber primary protective coating. The detail data of optical fiber performance are shown in the following table.

G.652D Fiber

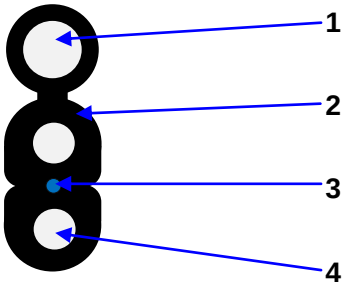
Category	Description	Specifications	
		Before cabling	After cabling
Optical Specifications	Attenuation @1310 nm	≤0.34 dB/km	≤0.40 dB/km
	Attenuation @1550 nm	≤0.20 dB/km	≤0.25 dB/km
	Zero Dispersion Wavelength	1300~1324 nm	
	Zero Dispersion Slope	≤0.092 ps/nm^2·km	
	Cable Cutoff Wavelength (λ_{cc})	≤1260 nm	
	Macro bending Loss (100 turns; Φ50 mm) @1550 nm (100 turns; Φ50 mm) @1625 nm	 ≤ 0.05 dB ≤ 0.10 dB	
	Mode Field Diameter @1310 nm	9.2±0.4μm	
Dimensional Specifications	Cladding Diameter	125 ±1μm	
	Core/clad concentricity error	≤0.6μm	
	Cladding Non-Circularity	≤1.0%	
Mechanical Specifications	Proof stress	≥0.69Gpa	

3. CABLE STRUCTURE

3.1 Cable Type: OFC-1G.652D-FDC-S3



Picture is only for reference



Technical Characteristics

- With excellent mechanical and environmental properties
- Has good bending performance, easy to install

Construction：

1. Messenger wire (steel wire)
2. Outer sheath **(LSZH black)**
3. Fiber
4. Strength member (Steel wire)

Dimension and Properties

Physical	Fiber count	1 G.652D
	Cable OD	2.0±0.2mm*5.2±0.2mm
	Cable weight	21kg/km±15%
	Operation temperature range	-20 deg C to + 60 deg C
	Installation temperature range	-5 deg C to + 50 deg C
	Transport and storage temperature range	-20 deg C to + 60 deg C
Mechanical	Max. tensile load	Short term:600N; long term:300N
	Crush resistance	2200 N/10cm
	Minimal installation bending radius	20 x OD
	Minimal operation bending radius	10 x OD

Color code scheme:

Fiber color: blue

4. Test Requirements

Approved by various professional optical and communication product institution, ZTT 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). ZTT 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.

Routine tests of optical fiber

Mode field diameter	IEC 60793-1-45
Mode field Core/clad concentricity	IEC 60793-1-20
Cladding diameter	IEC 60793-1-20
Cladding non-circularity	IEC 60793-1-20
Attenuation coefficient	IEC 60793-1-40
Chromatic dispersion	IEC 60793-1-42
Cable cut-off wavelength	IEC 60793-1-44

Test List

4.1Tension Loading Test

Test Standard	IEC 60794-1-2 E1
Sample length	No less than 50 meters
Load	Max. tension load
Duration time	1 minute
Test results	Additional attenuation:≤0.4dB
	No damage to outer jacket and inner elements

4.2 Crush/Compression Test

Test Standard	IEC 60794-1-2 E3
Load	Max. crush load
Duration time	1minute
Test number	3
Test results	Additional attenuation:≤0.4dB
	No damage to outer jacket and inner elements

4.3 Impact Resistance Test

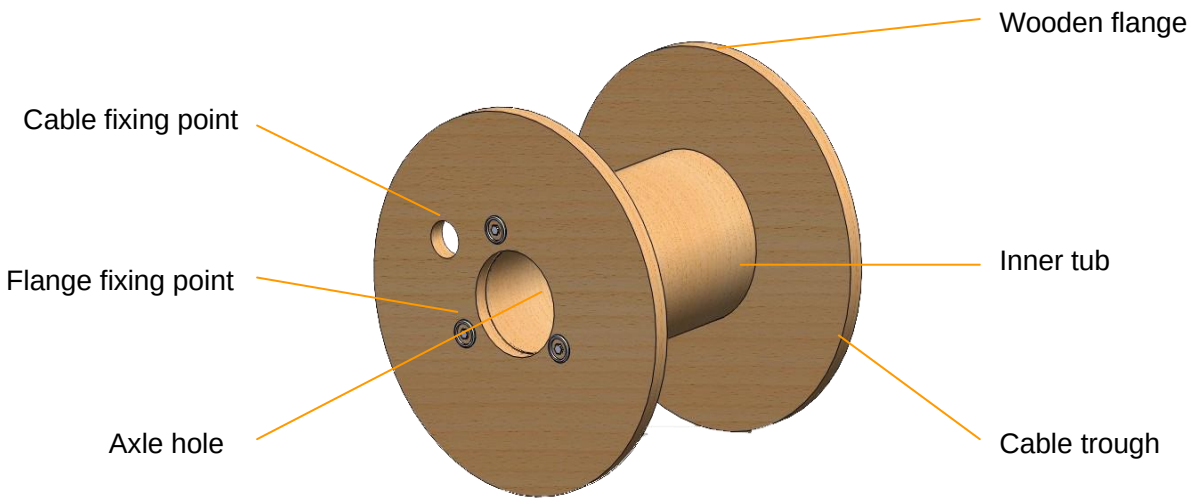
Test Standard	IEC 60794-1-2 E4
Impact energy	1J
Radius	12.5mm
Impact points	3
Impact number	1
Test result	Additional attenuation:≤0.4dB
	No damage to outer jacket and inner elements

4.4Repeated Bending Test

Test Standard	IEC 60794-1-2 E6
Bending radius	20 X diameter of cable
Cycles	30 cycles
Test result	Additional attenuation: ≤0.4dB
	No damage to outer jacket and inner elements

5. Packing and Drum

5.1 ZTT cables are packed in carton, coiled on Bakelite & wooden drum. During transportation, right tools should be used to avoid damaging the package and to handle with ease. Cables should be protected from moisture; kept away from high temperature and fire sparks; protected from over bending and crushing; protected from mechanical stress and damage.



The Bakelite Drum

5.2The color of cable marking is white. (The printing shall be carried out at interval of 1 meter on the outer sheath of cable) The inner end of cable is then sealed with heat shrinkable end cap to prevent ingress of water and is made available for testing. The outer end of cable is equipped with heat shrinkable end cap .Outer sheath marking legend can be changed according to user's requests.

5.3 Indoor cable packing

Bakelite & wooden drum

Strong wooden batten protection