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SINGLE MODE
OPTICAL FIBER CABLE SPECIFICATION
(GYFTZY53)

No. FLX-S23090

Version: A

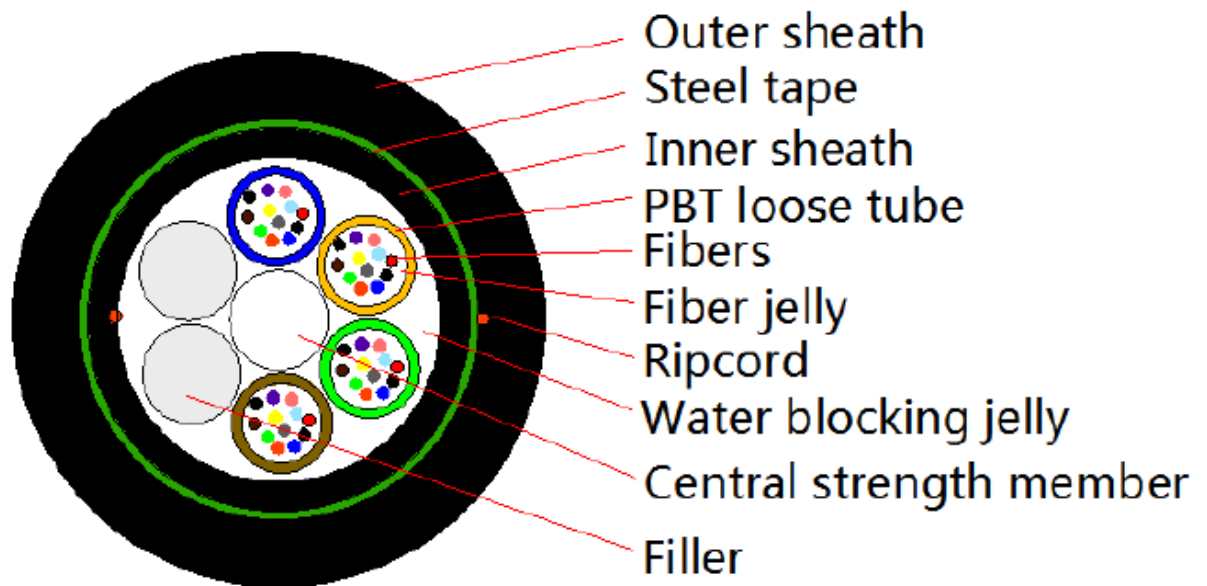
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(ITU-T Rec. G.652.D)

1. General

- 1.1 The specification covers the construction and properties of single mode optical fiber cable.
- 1.2 The cable shall be used for duct or direct burial installation.
- 1.3 The cable generally meets any latest relevant IEC, ITU-T and EIA Recommendation or better.
- 1.4 The fiber shall operate in 1310nm and 1550nm.
- 1.5 The cable could serve for more than 30 years without any significant deterioration.

2. Cross Section of Cable



(GYFTZY53- 4,8,16,144 G.652.D)

3. Optical Fiber in the Cable

3.1 Construction

Fiber	Type	Single mode type ITU-T G.652.D
	Material	Ge doped fused silica
Mode field diameter	1310 nm	9.2±0.4 μm
Core / Cladding concentricity error		≤0.5μm
Cladding diameter		125±1μm
Cladding non-circularity		≤1.0%
Coating	Material	UV curable acrylate
	diameter	245±5μm(Uncolored) 250±15μm (Colored)
Fiber proof-tested		0.69 GPa (1.0%, 100kpsi) in accordance with the optical fiber proof test by IEC 60793-1-30

3.2 Optical characteristics

Attenuation (according to IEC 60793-2-50)	@1310 nm	≤ 0.35 dB/km
	@1550 nm	≤ 0.21 dB/km
	@1625nm	≤ 0.23 dB/km
Attenuation coefficient @ 1285~1330nm		≤ Attenuation at 1310nm + 0.03 dB/km
Attenuation coefficient @ 1525~1575nm		≤ Attenuation at 1550nm + 0.02 dB/km
Chromatic dispersion coefficient	@1310 nm	≤ 3.5 ps/(nm·km)
	@1550 nm	≤ 18.0 ps/(nm·km)
	@1625 nm	≤ 22.0 ps/(nm·km)
Zero-dispersion Wavelength		1300~1324 nm
Zero-dispersion slope		≤0.092ps/(nm ² /km)
Cable Cut-off Wavelength (λ _{cc})		≤ 1260nm in accordance with EIA/TIA-455-170
Polarization Mode Dispersion(PMD)& PMD _Q		≤0.2 ps/√km
Macrobend Attenuation (100turns, Radius:30mm)	@1550 nm	≤0.1 dB

4. Optical Cable

4.1 Construction

Cable Type		GYFTZY53
Number of Fibers		4, 8, 16, 144
Fiber	Construction	Consult 3.1
Central Strength Member	Material	FRP
Tube	Material	PBT
	Filling Compound Material	Fiber jelly
Water Blocking Member	Material	Water blocking jelly
Inner Sheath	Material	LSOH Flame-retardant, non-corrosive/low-smoke, zero-halogen (FRNC/LSZH) material-IEC60332
	Thickness	Nom. 0.8mm
Armour	Material	Steel Tape coated polymer on both sides (Rodent resistance)
Outer Sheath	Material	LSOH Flame-retardant, non-corrosive/low-smoke, zero-halogen (FRNC/LSZH) material-IEC60332
	Thickness	Nom. 1.6mm

4.1.1 Buffer Tube Stranding

Fiber count	Fiber number per tube	Number of tube / filler	Nom. Diameter (mm)
4	4	1/4	11.2±0.5
8	4	2/3	11.2±0.5
16	4	4/1	11.2±0.5
144	12	12/0	13.1±0.5

4.2 Identification

Color Code for Fiber and Tube

No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Slate	White
No.	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Rose	Aqua

5. Optical Fiber Cable Characteristics

Item	Test Condition	Specification at 1550nm
Tensile Loading	IEC 60794-1-2-E1 Load : 3,000 N Hold time : 5 munite	Attenuation change <0.1 dB No fiber break and no sheath damage
Impact	IEC 60794-1-2-E4 Impact energy :2.94N.m Radius of hammer head:12.5±0.1mm No. of impacts : 20 cycles Impact rate: ≤ 2 sec/cycle	Attenuation change <0.1 dB No fiber break and no cable damage
Crush	IEC 60794-1-2-E3 Load : 2,200N/100mm Loading time: 10 minute (one point and one time)	Attenuation change <0.1 dB No fiber break and no cable damage
Repeat Bending	IEC 60794-1-2-E6 Bending angle : ±90° No. of cycles : 25 Mandrel diameter:20×Dia. of cable. Load : 49.03N	Attenuation change <0.1 dB No fiber break and no cable damage
Water Penetration	IEC 60794-1-2-F5 Head of water : 1 m Test time : 24 hour Sample length: 3 m	No water leakage at end of cable
Twist	IEC 60794-1-2-E7 Length : 1 m Twist angle : ±180° No. of cycles : 10 cycles Load : 49.03N	Attenuation change <0.1 dB No fiber break and no cable damage
Cable Bending	IEC 60794-1-2-E11B Mandrel Dia. : 20×cable Dia. No. of turn : 1 No. of cycle : 1	Attenuation change <0.1 dB No fiber break and no cable damage
Drip test	IEC-794-1-2-E14 Sample length: 30 cm Temp: 65 ±5°C Time: 24 h	No filling compound drip
Temperature Cycling	IEC 60794-1-2-F1 No. of cycles : 2 Temperature: -10 to +70°C Soak time (4km/drum): 14hours	Attenuation change <0.1 dB/km No fiber break and no cable damage
trackside cables.	IEC 60229-2007 Sample length: 30 cm Friction length: 5mm Friction times: 50	#Acceptance Criteria -the outer jacket not broken
Electric field Resistance	IEC 60229-2007 Put 2 point of field resistance inside and outside jacket Set the electric: follow the specification technical -Time under the Voltage: 5 min	#Acceptance Criteria -the outer jacket not broken

6. Cable sheath Marking

The cable sheath marking shall be as follows:

- Marking Color: White
- Interval: 1m+1.0%。
- Contents(For example.)

FLX GYFTZY53 **F G652D 20 ****M**

Explain:

FLX: The name of manufacturer.

GYFTZY53: The name of cable.

****F:** Fiber counts

G652D: The type of fiber

20:** The year of manufacture

******M:** Length marking ,starting number is 0000M

※The sheath marking can be changed with customer’s requirement

7.Packing and shipping

7.1 Cable Drum: Fumigation wooded drum

Standard reel length: 3000m/reel (customer’s requirement.)

7.2 Labeling

The direction of rotation of the color scheme is shown by making the colokwise and anti-clockwise ends with red and green adhesive tape respectively

The markings are on both sides of the flanges as follows(for example):

The contents as follows(for example):

- FLX GROUP
- Cable type/Size
- Cable length
- Cable Weight
- Shipping mark

※ Can be changed with customer’s requirement.

-----END OF SPECIFICATION-----