

Specifications of  
Optical Fiber Cable  
(GCYFTY)

## 1. General

1.1 This specification covers the requirements for the supply of jelly-filled core, single-mode optical fiber cables.

1.2 The single mode optical fiber cable comply with the requirements of this specification and generally meet any latest relevant ITU-T Recommendation G.652.

## 2. Fiber characteristics

### 2.1 G.652

#### 2.1.1 Geometric characteristics

Item		Construction
Mode field diameter	At 1310nm	9.2±0.4μm
Cladding diameter		125±1μm
Core concentricity error		≤0.5μm
Cladding non-circularity		≤1.0%
Cut-off wavelength ( $\lambda_{cc}$ ) (for cable)		≤1260nm
Cut-off wavelength ( $\lambda_c$ ) (for fiber)		1180nm~1330nm
Primary coating diameter	(Not included color layer)	245±10μm
	(Included color layer)	245±15μm
Coating-cladding concentricity error		≤12.5μm
Fiber curl radius		≥4m

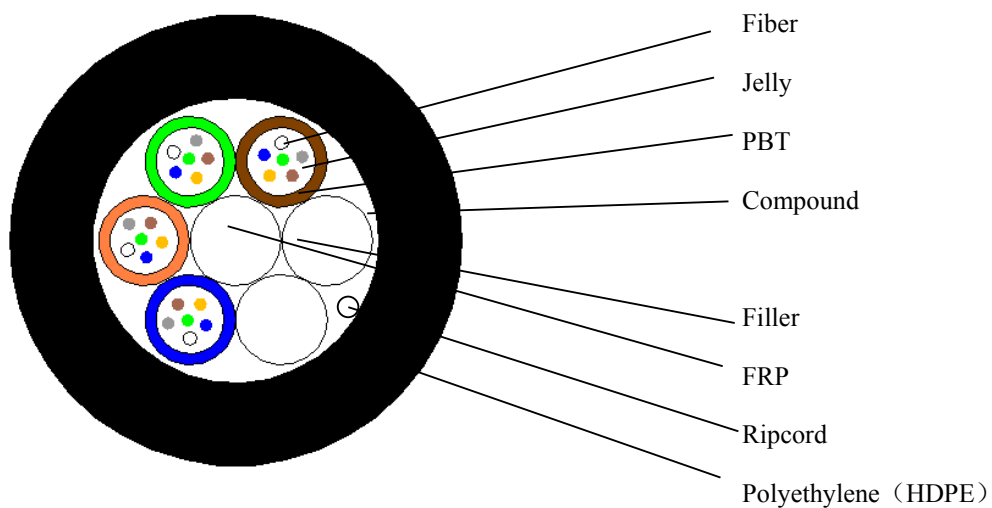
#### 2.1.2 Transmission characteristics

Item		Performance
Attenuation	At 1310nm	≤0.36dB/km(max.)
		≤0.34dB/km(aver.)
	At 1550nm	≤0.22dB/km(max.)
		≤0.21dB/km(aver.)
Macro bending loss	Φ =60mm, 100turns at 1550nm	≤0.1dB
Chromatic dispersion	Within 1288~1339nm	≤3.5ps/nm·km
	At 1550nm	≤18ps/nm·km
Zero dispersion wavelength		1300~1324nm
Zero dispersion slope		≤0.090ps/nm <sup>2</sup> ·km

### 3 Optical Fiber Cable

#### 3.1 GCYFTY

##### 3.1.1 Cross section



### 3.1.2 Dimension of the cable

Amount of fiber	Max. numb. of the fiber per tube	*Nom. thickness of sheath	Diameter (Appr.)	Weight (Appr.)
		mm	mm	Kg/km
72	12	0.6	5.8	33
96	12	0.6	6.8	45

\*Note: The minimum thickness of the sheath is 0.3mm.

### 3.2 Performance

NO	ITEM	TEST METHOD	SPECIFICATION
1	Tensile performance IEC749-1-E1	- Load: 72B1.3-300 N 96B1.3-900 N - Time: 1 minute	- Fiber strain $\leq$ 0.33 % - No fiber break - No sheath damage
2	Crush test IEC749-1-E3	- Load: 300 N /100mm - Time: 1 minute - Length: 100 mm	- No fiber break - No sheath damage
3	Impact test IEC794-1-E4	- Impact hight: 1m - Impact weight: 450g - Number of impacts: 5 - Impact rate: 3 sec/cycle	- No fiber break - No sheath damage
4	Repeated bending IEC794-1-E6	- Bending dia.: $25 \times D$ - Load: 250N	- No fiber break - No sheath damage

		- Flexing rate: 3sec/cycle - No. of cycle: $\geq 30$	
5	Water penetration IEC794-1-E5B	- Height of water: 1m - Sample length: 3 m - Time: 24 hr	- No drip through the cable core assembly
6	Twist / Torsion IEC794-1-E7	- Length: 1 m - Load: 250N - Twist rate: 6sec/cycle - Twist angle: $\pm 180^\circ$ - No. of cycle: 10	- No fiber break - No sheath damage
7	Temperature Cycling IEC794-1-E1	- Temperature step: +20°C → -40°C → +60°C → +20°C - Number of cycle: 2 - Time per each step: 12 hrs	- Loss change $\leq 0.05\text{dB/km}$ @1550 nm - No fiber break - No sheath damage

D\*: Cable diameter

#### 4. Sheath marking

