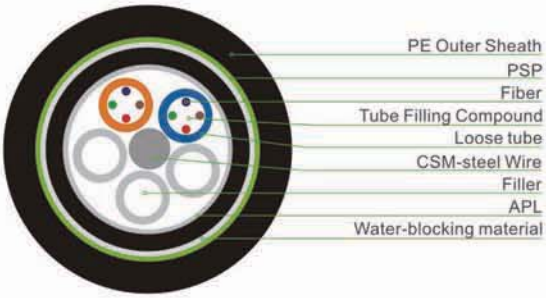
STRUCTURE CABLING
OPTICAL FIBER

Layer--stranded Reinforced Armored and Double Sheathed Optical Cable(GYTA53)

D176S/D178S

Introduction

The fibers are placed in a loose tube made of PBT. The tubes are filled with a water-resistant filling compound. A steel wire sometimes sheathed with PE for cable with high fiber count, locates in the center of core as a metallic strength member. Tubes (and fillers) are stranded around the strength member into a compact and circular cable core. An Aluminum Polyethylene Laminate is applied around the cable core, which is filled with the filling compound to protect it from water ingress. Then the cable core is covered with a thin PE inner sheath. After the PSP is longitudinally applied over the inner sheath, the cable is completed with a PE out sheath.



Fiber color code

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Gray	White	—	—	—	—	—	—

Fiber color in each tube starts from No. 1 Blue.

Color codes for loose tube & filler rod

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	—	—	—	—	—	—	—	—	—	—

Tube color in each layer starts from No. 1 Blue. If there are fillers, the color is nature.

Cable structure and parameter

SN	Item	Unit	Value
1	No. of fibers	count	8
2	No. of fibers per tube(max)	count	4
3	No. of elements	count	2
4	Tube diameter	mm	1.7
5	Outer sheath wall thickness	mm	1.8
6	Cable diameter	mm	12.4
7	Cable weight	kg/km	210
8	Short term tension	N	3000
9	Short term crush	N/100mm	3000

Note: Mechanical sizes are nominal values.

G652D fiber information

- Mode field diameter (1310nm):9.2μm±0.4μm.
- Mode field diameter (1550nm):10.4μm±0.8μm.
- Cladding diameter:125μm±1.0μm.
- Coating diameter:245μm±7μm.
- Cut off wavelength of cabled fiber (λcc):≤1260μm.
- Attenuation at 1310nm:≤0.35dB/km.
- Attenuation at 1550nm:≤0.21dB/km.
- Bending loss at 1550nm (100 turns, 30mm radius):≤0.05dB.
- Dispersion in the range 1288 to 1339nm:≤3.5ps/(nm·km).
- Dispersion at 1550nm:≤18ps/(nm·km).
- Dispersion slope at zero dispersion wavelength:≤0.092ps/(nm2·km).

Characteristic of Optical Cable

Mechanical characteristic and test method		
Tensile strength	conform to IEC 794-1-E1	
Crush	conform to IEC 794-1-E3	
Impact	conform to IEC 794-1-E4	
Repeated bending	conform to IEC 794-1-E6	
Torsion	conform to IEC 794-1-E7	
Flexing	conform to IEC 794-1-E8	
Cable bend	conform to IEC 794-1-E11	
Water penetration	conform to IEC 794-1-F5B	
Temperature requirement	Operation	-40°C~+60°C
	Installation	-10°C~+60°C
	Storage/transportation	-40°C~+60°C
Temperature cycling test	conform to IEC 794-1-F1	
Bending Radius	Unloaded	10 times of outer diameter
	loaded	20 times of outer diameter

Order Information

Item	Specification	Description
D176S	2-144 cores	Single Mode
D178S	2-144 cores	Multimode