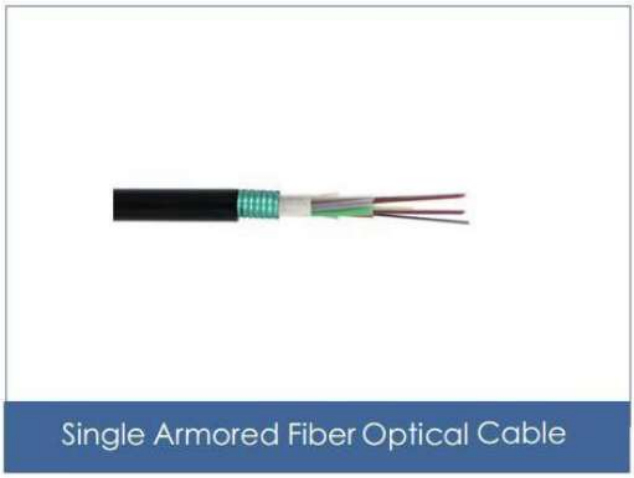
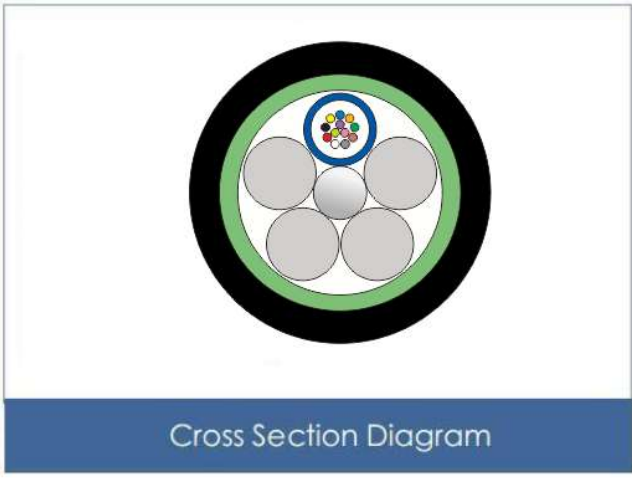
Single Jacket - Single-Armor Fiber cables

1. Introduction

This type of fiber optic cable in stranded loose tube fiber optic cable with compact structure, and the cable jacket is made of strong Polyethylene. High strength loose tube has hydrolysis resistant. This cable can be used for LAN and WAN backbones, telecom access lines, fiber to business and fiber to the building drop connections, as well as fiber to the home drop and access connections.



Single Armored Fiber Optical Cable



Cross Section Diagram

Features

- Good mechanical and temperature performance
- Special design to prevent loose tube shrinking
- Crush resistance, water blocking and flexibility
- Good mechanical and temperature performance
- PE sheath protects cable from ultraviolet radiation
- High strength loose tube that is hydrolysis resistant

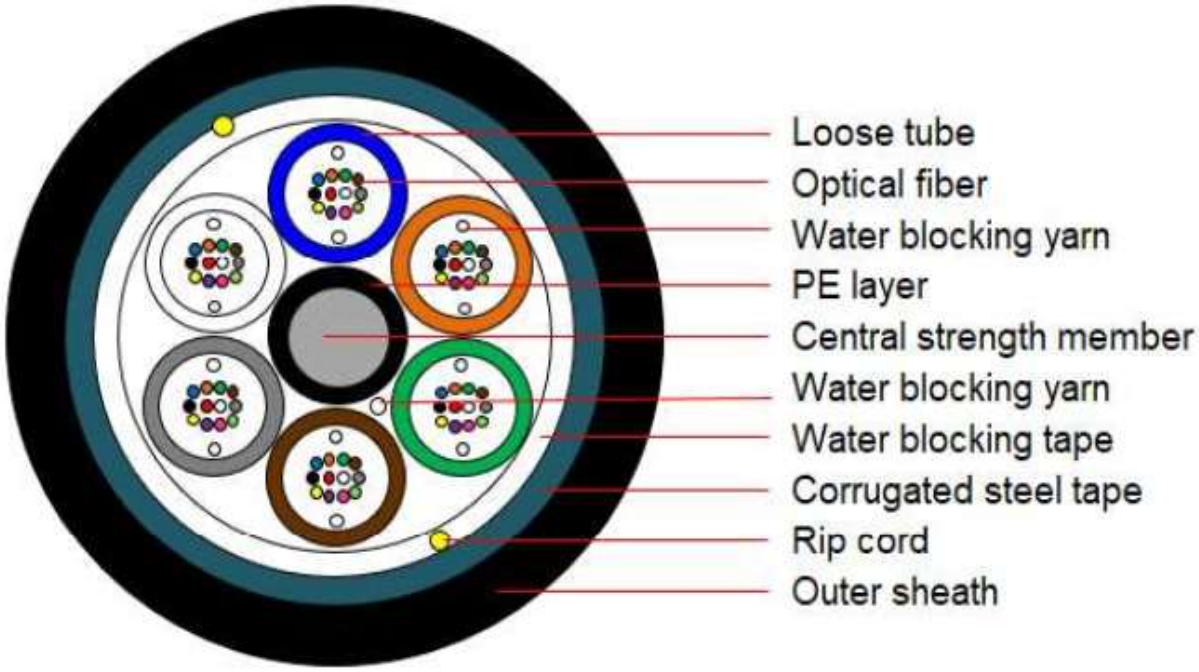
Application

- CATV
- Local trunk line
- Rural communication
- Computer networks system
- Aerial & conduit/duct application

2. Fiber details

Optics Specifications for G652D single mode fiber		
Attenuation(dB/km)	@1310nm	≤0.34db/km
	@1383nm (after hydrogen aging)	≤0.32db/km
	@1550nm	≤0.22db/km
	@1625nm	≤0.24db/km
Dispersion	@1285nm~1340nm	-3.0~3.0ps/(nm*km)
	@1550nm	≤18ps/(nm*km)
	@1625nm	≤22ps/(nm*km)
Zero-Dispersion wavelength		1300~1324nm
Zero-Dispersion slope		≤0.092ps/(nm^2*km)
Mode field diameter @ 1310nm		9.2±0.4μm
Mode field diameter @ 1550nm		10.4±0.8μm
PMD	Max. value for fiber on the reel	0.2ps/km 1/2
	Max. Designed value for link	0.08ps/km 1/2
Cable cutoff wavelength, λ cc		≤1260nm
Effective group index (Neff)@1310nm		1.4675
Effective group index (Neff)@1550nm		1.468
Macro-bend loss (Φ60mm,100 turns) @1550nm		≤0.05db
Back scatter characteristic(@1310nm&1550nm)		
Point discontinuity		≤0.05db
Attenuation uniformity		≤0.05db/km
Attenuation coefficient difference for bi-directional measurement		≤0.05db/km
Cladding diameter		125±1μm
Cladding non-circularity		≤1%
Core/cladding concentricity error		≤0.4μm
Fiber diameter with coating(uncolored)		245±5μm
Cladding/coating concentricity error		≤12.0μm
Curl		≥4m
Proof test		0.69GPa
Coating strip force (typical value)		1.4N
Dynamic stress corrosion susceptibility parameter (typical value)		≥20
Environmental characteristics(@1310nm&1550nm)		
Temperature induced attenuation (-60~+85℃)		≤0.5dB/km
Dry heat induced attenuation(85±2℃,30days)		≤0.5dB/km
Damp heat induced attenuation (85±2℃, RH85%,30days)		≤0.5dB/km

3. Cable Structure



Technical Parameters:									
Cable Count	Out sheath Diameter (MM)	Weight (KG)	Minimum allowable Tensile Strength (N)		minimum allowable Crush Load (N/100mm)		Minimum Bending Radius (MM)		Storage temperature (℃)
			short term	long term	short term	long term	short term	long term	
24 F	12.3+/-0.5	100	2700	800	4400	800	20D	10D	-40+60

COLOR IDENTIFICATION OF FIBER

The fibers shall be marked by a colored coating with 12 different colors according to EIA/TIA 598:

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Slate	Natural	Red	Block	Yellow	Violet	Pink	Aqua

4. Test Requirement

The cable is in accordance with applicable standards.
Routine tests for 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 for outdoor cable

4.1 Tension Loading Test

Test Standard	IEC 60794-1-2 E1
Sample length	No less than 50 meters
Load	Max. installation load
Duration time	1 hour
Test results	Additional attenuation: ≤0.05dB No damage to outer jacket and inner elements

4.2 Crush/Compression Test

Test Standard	IEC 60794-1-2 E3
Load	Crush load
Plate size	100mm length
Duration time	1 minute
Test number	1
Test results	Additional attenuation: ≤0.05dB No damage to outer jacket and inner elements

4.3 Impact Resistance Test

Test Standard	IEC 60794-1-2 E4
Impact energy	6.5J
Radius	13.6mm
Impact points	3
Impact number	2
Test result	Additional attenuation: ≤0.05dB

4.4 Repeated Bending Test

Test Standard	IEC 60794-1-2 E6
Bending radius	20 X diameter of cable
Cycles	25 cycles
Test result	Additional attenuation: ≤ 0.05dB No damage to outer jacket and inner elements

4.5 Torsion/Twist Test

Test Standard	IEC 60794-1-2 E7
Sample length	2m
Angles	±180 degree
cycles	10
Test result	Additional attenuation: ≤0.05dB No damage to outer jacket and inner elements

4.6 Bend Test

Test Standard	IEC 60794-1-2 E11B
Mandrel diameter	20 X diameter of cable
Turn number	4
Number of cycles	3
Temperature	20℃
Test result	No damage to outer jacket and inner elements

4.7 Temperature cycling Test

Test Standard	IEC 60794-1-2 F1
Temperature step	+20℃ →-40℃ →+85℃→+20℃
Time per each step	Transition from 0℃ to -40℃:2hours; duration at -40 ℃ :8 hours; Transition from -40 ℃ to +85 ℃ :4hours; duration at +85 ℃ :8 hours; Transition from +85℃ to 0℃:2hours
Cycles	5
Test result	Attenuation variation for reference value (the attenuation to be measured before test at +20±3℃) ≤ 0.05 dB/km

4.8 Water penetration Test

Test Standard	IEC 60794-1-2 F5
Height of water column	1m
Sample length	1m
Test time	1 hour
Test result	No water leakage from the opposite of the sample

4.9 Drip Test

Test Standard	IEC 60794-1-2 E14
Sample length	0.3m
Temperature	70 ℃
Duration	24 hrs.
Test result	No filling compound shall drip from tubes

Packing and Marking

Packing

- Each single length of cable shall be reeled on Fumigated Wooden Drum
- Covered by plastic buffer sheet
- Sealed by strong wooden battens
- At least 1 m of inside end of cable will be reserved for testing.
- Drum length: Standard drum length is 3000 m ±2%;

Drum Markings

- manufacturer name;
- Manufacturing year and month
- Roll-direction arrow;
- Drum length;
- Gross/net weight;