



## 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 GL premium designed cable with optical, mechanical and geometrical characteristics

Cable Type	Application
Metallica type duct (HDD)	Duct/Aerial installation for heavy power current

### 1.2 Cable Description

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

GL ensures a continuing level of quality in our cable products through several quality control programs including ISO 9001.

### 1.4 Reliability

Both initial and periodic qualification testing are performed to assure the cable's performance and durability in the field environments. .

1.5 The cable are designed, manufactured and tested according to international standards as follow

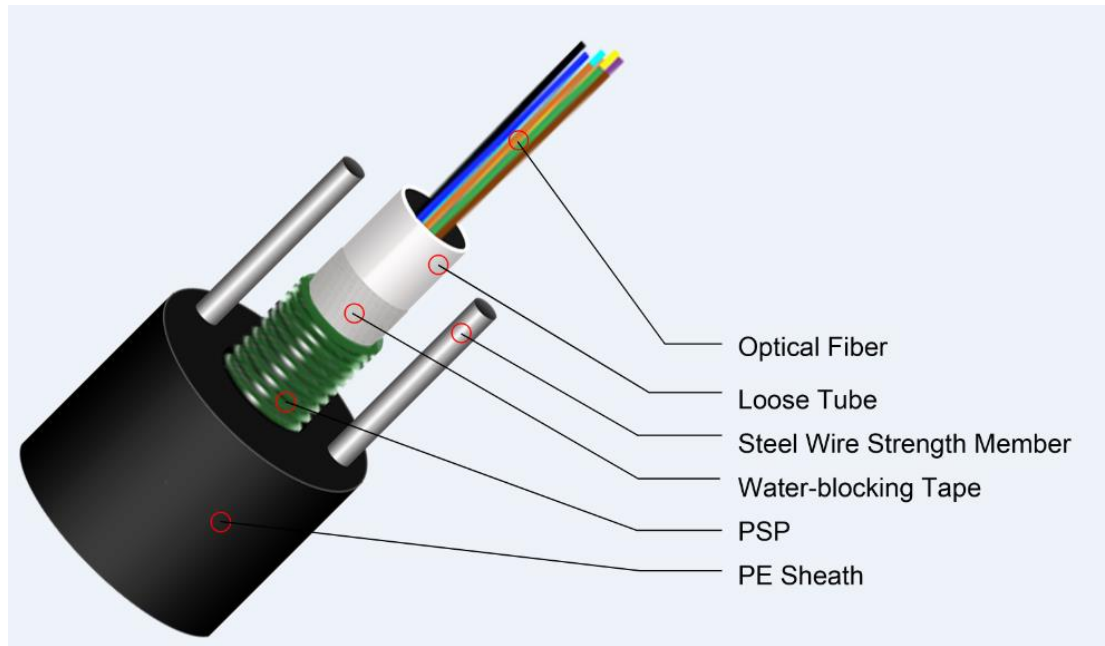


### B1.3(G652D) single mode fiber

Optics Specifications		
Attenuation(dB/km)	@1310nm	≤0.34db/km
	@1383nm (after hydrogen aging)	≤0.32db/km
	@1550nm	≤0.20db/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 <sup>2</sup> *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		1.4680
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
Geometrical characteristics		
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
Mechanical characteristic		
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°C)		≤0.5dB/km
Dry heat induced attenuation(85±2°C,30days)		≤0.5dB/km
Water immersion induced attenuation(23±2°C,30days)		≤0.5dB/km
Damp heat induced attenuation(85±2°C,RH85%,30days)		≤0.5dB/km

## 2. Cable structure

### 2.1 Cable Type: OFC-metal HDPE





Fiber count	2~12	24
Fiber No. per tube	2~12	24
Loose tube diameter/Material	2.0+0.2mm/PBT	2.6+0.2mm/PBT
Outer sheath thickness &Material	2.3mm HDPE	
Water blocking	Water-blocking tape	
Strength member	Steel tape +Two steel wire (1.0mm*2)	
Cable overall diameter	8.0±0.2mm	8.6±0.2mm
Cable weight	Approx 65 kg/km	Approx 75 kg/km
Operation temperature range	-40 °C to + 70 °C	
Installation temperature range	-40 °C to + 70 °C	
Transport and storage temperature range	- 40 °C to + 70 °C	
Allowable Tensile Load(N)	2000N	
Crush resistance	Short term :2200N/100MM Long term: 1100N/100MM	
Minimal installation bending radius	20 x OD	
Minimal operation bending radius	10 x OD	

The fibres shall be marked by a coloured coating with 12 different colours according to EIA/TIA 598:

Fibre #1: Blue

Fibre #2: Orange

Fibre #3: Green

Fibre #4: Brown

Fibre #5: Slate (Grey)

Fibre #6: White

Fibre #7: Red

Fibre #8: Black (natural with being marked)

Fibre #9: Yellow

Fibre #10: Violet

Fibre #11: Rose (Pink)

Fibre #12: Aqua (Light Blue)



<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>

\*Remarks: The 24 cores are separated by blue orange yarn to distinguish.

### 3.1 PACKING AND DRUM

Each single length of cable shall be reeled on Fumigated Wooden Drum

Covered by plastic buffer sheet





Sealed by strong wooden battens

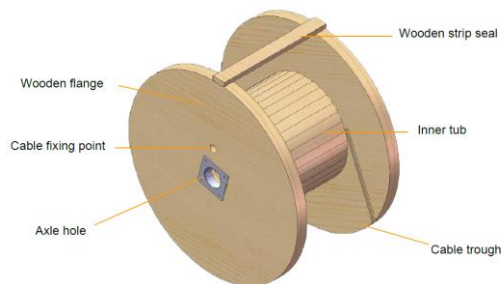
At least 1 m of inside end of cable will be reserved for testing.

Drum length: Standard drum length is 4, 000m ±2%;

Cable marking: PSTel 12H GYXTW G.652D HDPE +Drum No.+produce time+XXXXmeter

### 3.2 Drum (can according to the requirement in the technical specification)

Test report		Company/Manufacturer Logo on drum	
Marks		Reel handing instruction	



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