

FIBRA OPTICA DOMUS

Figura 8



1. General

1.1 Scope

This Specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. WE ensures a stable quality control system for our cable products through several programs including ISO 9001.

Cable type	Application
GYFXC8Y-nB1.3	Self-supporting aerial installation

n represents the fibre counts of the cable.

1.2 Reference

The cable offered by we are designed, manufactured and tested according to the standards as follows:

ITU-T G.652	Characteristics of a single-mode optical fibre
IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General
IEC 60794-1-2	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure
IEC 60794-3	Optical fibre cables-part 3: Sectional specification-Outdoor cables
IEC 60794-3-20	Optical fiber cables-part 3-20: Outdoor cables-Family specification for optical self-supporting aerial communication cables

1.3 Life Time

Optical fibre cables supplied in compliance with this specifications is capable to withstand the typical service condition for a period of THIRTY (30) years without detriment to the operation characteristics of the cable.

1.4 Application

Item	Value
Operation temperature	-40 °C ~+70 °C
Storage temperature	-40 °C ~+70 °C
Static bending radius	10 times the cable diameter
Dynamic bending radius	20 times the cable diameter

2. Optical Fibre

2.1 Optical Fibre supplied in this specification meet the requirements of ITU-T G.652.D

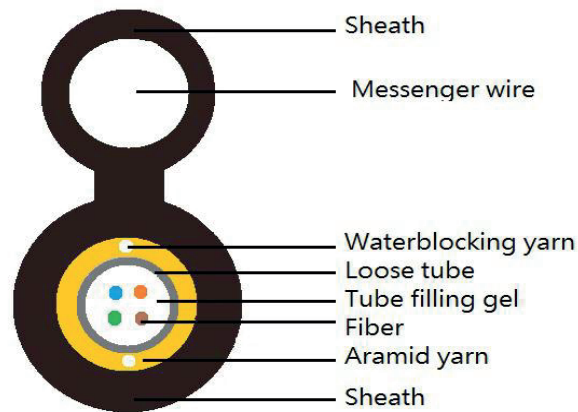
Characteristics	Conditions	Specified Values	Units
Optical characteristics			
Attenuation	1310 nm 1550 nm	<0.35 <0.22	[dB/km] [dB/km]
Chromatic Dispersion	1310 nm 1550 nm 1625 nm	≤ 3.5 ≤ 18 ≤ 22	[ps/(nm · km)] [ps/(nm · km)] [ps/(nm · km)]
Zero dispersion wavelength		1312 ± 10	[nm]
Zero dispersion slope		≤ 0.092	[ps/(nm ² · km)]
PMD Maximum Individual Fibre Link Design Value (M=20,Q=0.01%)		≤ 0.1 ≤ 0.06	[ps/km] [ps/km]
Cable cutoff wavelength λ _{cc}		≤ 1260	[nm]
Mode field diameter (MFD)	1310 nm 1550 nm	9.2 ± 0.4 10.3 ± 0.5	[μ m] [μ m]
Core-clad Concentricity		≤ 0.5	[μ m]
Cladding diameter		125 ± 0.8	[μ m]
Cladding Non-circularity		≤ 0.8	[%]
Coating diameter		245 ± 5	[μ m]
Proof test		≥ 0.69	[Gpa]

3. Optical Cable

3.1 Technical Characteristics

- The unique second coating and tube technology provide the fibers with enough space and bending endurance, which ensure good optical property of the fibers in the cable
- Accurate process control ensures good mechanical and temperature performance
- High quality raw material guarantees the long service life of cable

3.2 Cross Section of Cable



GYFXC8Y-nB1.3

Structure of other fibre counts refer to 3.4
Schematic for reference only

3.3 Fibre and Loose Tube Identification

The color code of fibers will be identification in accordance with the following color sequence, other requirement also is available.

Color Code	1	2	3	4	5	6
	Blue	Orange	Green	Brown	Grey	White
	7	8	9	10	11	12
	Red	Black	Yellow	Purple	Pink	Aqua



3.4 Dimensions and Descriptions

The optical cable structure is shown in the following table, other structure and fibre count are also available according to customer requirements.

Item	Contents	Value
Loose tube	Fiber counts	24
	Outer diameter (mm)	2.5
strength member	Material	Aramid yarn
Messenger wire	Material	1.6mm steel wire
Cable core part sheath	Material	PE
	Color	Black
	Thickness (mm)	Nominal: 1.5
Messenger part sheath	Material	PE
	Color	Black
	Thickness (mm)	Nominal: 1.0
Waterblocking yarn	Number	2
Cable diameter(mm) Approx.		5.7*11.2 ± 0.2
Cable weight(kg/km) Approx.		50

3.5 Main Mechanical and Environmental Performance

Main mechanical performance

Max allowable tension(N)	Crush(N/100mm)	
	Short term	Long term
1500	1000	300

Environmental and installation condition

Temperature
-40 °C ~ +70 °C

4. Mechanical, Physical and Environmental Test Characteristics

The mechanical and environmental performance of the cable are in accordance with the following table. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1550nm.

Items	Test Method	Requirements
Tension	<u>IEC 60794-1-2-E1</u> Load: According to 3.5 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation: $\leq 0.05\text{dB}$ after test No damage to outer jacket and inner elements
Crush	<u>IEC 60794-1-2-E3</u> Load: According to 3.5 Duration of load: 1min	Additional attenuation: $\leq 0.05\text{dB}$ after test No damage to outer jacket and inner elements
Impact	<u>IEC 60794-1-2-E4</u> Radius: 300 mm Impact energy: 10 J Impact number: 1 Impact points: 3	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
Repeated bending	<u>IEC 60794-1-2-E6</u> Bending radius: $20 \cdot D$ Cycles: 25 Load: 150N	Additional attenuation: $\leq 0.05\text{dB}$ No damage to outer jacket and inner elements
Torsion	<u>IEC 60794-1-2-E7</u> Cycles:10 Length under test: 1m Turns: $\pm 180^\circ$ Load: 150N	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
Water Penetration	<u>IEC 60794-1-2-F5B</u> Time : 24 hours Sample length : 3m Water height : 1m	No water leakage, except the part of stranded wire
Temperature cycling	<u>IEC 60794-1-2-F1</u> Sample length: at least 1000m Temperature range: $-40\text{ }^\circ\text{C} \sim +70\text{ }^\circ\text{C}$ Cycles: 2 Temperature cycling test dwell time: 12 hours	The change in attenuation coefficient shall be less than 0.05 dB/km .
Other parameters	According to <u>IEC 60794-1</u>	