

Xoptic Optical FLAT Drop cable, 12-fiber, 1T12F, G.657A1, 1550N

Code: [54XOP0004](#)

1. Scope

This Specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. Stable quality control system for our cable products through several programs including ISO 9001, ISO 14001 and OHS.

Cable type Application: Self-supporting aerial installation

1.1 Cable Description

Optical fibres are housed in loose tubes that are made of high-modulus plastic and filled with waterproof compounds.

FRP is applied as strength member.

Water blocking yarns are used in and over the cable core to prevent it from water ingress.

Polyethylene sheath are applied as outer sheath.

1.2 Reference

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

ITU-T G.657	Characteristics of a single-mode optical fibre
IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General
IEC 60794-1-21	Optical fiber cables- part1-2-Generic specification-Basic optical cable test procedure-Mechanical test methods
IEC 60794-1-22	Optical fiber cables- part1-2-Generic specification-Basic optical cable test procedure-Environmental test methods
IEC 60794-3	Optical fibre cables-part 3: Sectional specification-Outdoor cables
IEC 60794-3-20	Optical fiber cables-part3-20: 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 twenty-five (25) years without detriment to the operation characteristics of the cable.

2. Optical Fibre

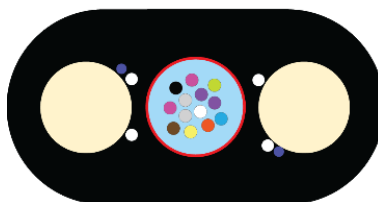
Optical Fibres supplied in this specification meet the requirements of ITU-T G.657.A1

3 Optical Cable

3.1 Technical Characteristics

- The unique second coating and stranding technology provide the fibres with enough space and bending endurance, which ensure good optical property of the fibres 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



Xoptic Flat Drop 12f

Structure of other fibre counts referred to 3.4

3.3 Fibre and Loose Tube Identification

The color code of fibres will be identification in accordance with the TIA-598-D color sequence, other sequence also is available.

TUBE (OR FIBER) NUMBER	COLOR
1	Blue
2	Orange
3	Green
4	Brown
5	Slate
6	White
7	Red
8	Black
9	Yellow
10	Violet
11	Pink (Rose)
12	Aqua

3.4 Dimensions and Descriptions

The standard structure of Flat Drop cable is shown in the following table.

Item	Contents	Value
		12
Loose tube	Number	1
	Outer diameter(mm)	2,5
	Water blocking	Filling gel
Strength member	Material	FRP
	Number	1
	Diameter (mm)	1.8
Water Blocking Material	Material	Water Blocking Yarn
Sheath	Material	HDPE (UV resistant)
	Color	Black
	Thickness (mm)	Nominal: 0.8
Ripcord	Number	1
	Color	Red
Cable diameter(mm) Approx.		8.1*4.1
Cable weight(kg/km) Approx.		40

3.5 Main Mechanical and Environmental Performance

Item	Value
	12
Tensile performance (N)	1550
Max. operational tension (N)	500
Crush(N/100mm)	2000
Operation temperature:	-40°C ~+70°C
Installation temperature	-15°C ~+55°C
Storage 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	IEC 60794-1-21-E1 Load: According to 3.5 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation: ≤ 0.1 dB after test No damage to outer jacket and inner elements
Crush	IEC 60794-1-21-E3A Load: According to 3.5 Duration of load: 1min	Additional attenuation: ≤ 0.1 dB after test No damage to outer jacket and inner elements
Impact	IEC 60794-1-21-E4 Radius: 300 mm Impact energy: 10J Impact number: 1 Impact points: 3	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Bend	IEC 60794-1-21-E11A Mandrel radius: $10 \times D$ Turns: 4 Cycles: 3	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Repeated bending	IEC 60794-1-21-E6 Bending radius: $20 \times D$ Cycles: 25 Load: 150N	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Torsion	IEC 60794-1-21-E7 Cycles: 10 Length under test: 1m Turns: $\pm 180^\circ$ Load: 150N	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Water Penetration	IEC 60794-1-22-F5 Time : 24 hours Sample length : 3m Water height : 1m	No water leakage.
Temperature cycling	IEC 60794-1-22-F1 Sample length: at least 1000m Temperature range: $-40^\circ\text{C} \sim +70^\circ\text{C}$ Cycles: 2 Temperature cycling test dwell time: 12 hours	The change in attenuation coefficient shall be less than 0.05dB/km.
Other parameters	According to IEC 60794-1	

5 Packaging and Drum

5.1 Cable Sheath Marking

Unless otherwise specified, the cable sheath marking shall be as follows:

Color: white

Contents: Xoptic, the year of manufacture, the type of cable, cable number, length marking

Interval: 1 m

Outer sheath marking legend can be changed according to user's requests.

5.2 Reel Length

Standard reel length: 2/3 km/reel, other length is also available.

5.3 Cable Drum

The cables are packed in fumigated wooden drums.

5.4 Cable Packing

Both ends of the cable will be sealed with suitable plastic caps to prevent the entry of moisture during shipping, handling and storage. The inner end is available for testing.