ES-23-F8CFFDLZ-Rev.0

ISSUED : June 29, 2023
PAGE : 1 OF 6
REV. : 0

Specification

F-8 Flat Drop Optic Cable

Compact and Easy-to-Locate Fiber Optic Cable for the Last Link in Your FTTx Network
(Span 60m, NESC Light)

1. SCOPE

1.1 Application

This specification covers the general requirements for Optical Fiber Drop Cable for FTTx networks.

1.2 Cable Description

Optical fiber, Messenger wire, Dielectric strength member and LSZH (Low Smoke Zero Halogen)

2. OPTICAL FIBER

The optical, geometrical and mechanical performance of the optical fiber shall be in accordance with Table

2.1 The properties of single mode fiber (ITU-T G.657 A2)

Parameter	Specification
Optical Characteristics	
Attenuation coefficient @ 1310 nm @ 1550 nm @ 1625 nm	 ≤ 0.36 dB/km ≤ 0.23dB/km ≤ 0.25dB/km
Attenuation vs. Wavelength Max. α difference	≤ 0.03dB/km at 1285 ~ 1330 nm ≤ 0.02dB/km at 1525 ~ 1575 nm
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	≤ 0.092 ps/(nm^2.km)
PMD Maximum Individual Fiber	 ≤ 0.2 ps/km$^{1/2}$
Cable cut-off wavelength	≤ 1260 nm
Mode field diameter @ 1310 nm	8.8 ± 0.4 um
Geometrical Characteristics	
Cladding diameter	125.0 ± 0.7 um
Cladding non-circularity	≤ 0.7 %
Coating diameter	245 ± 5 um
Coating-Cladding concentricity error	≤ 12.0 um
Coating Non-circularity error	≤ 6.0 %
Core-Clad concentricity error	≤ 0.5 um
Curl (Radius)	≥4m
Micro-bend induced attenuation 10turnsaroundamandrelof30mmdiameter 1turnaroundamandrelof20mmdiameter 1turnaroundamandrelof15mmdiameter	 ≤0.03dBat1550nm,≤0.1dBat1625nm ≤0.1dBat1550nm,≤0.2dBat1625nm ≤0.2dBat1550nm,≤0.5dBat1625nm

3. CABLE CONSTRUCTION

The construction of the cable shall be in accordance with Table.

Table 1. Construction of the Cable

ITEMS	DESCRIPTION
Number of Fibers	1 or 2
Dielectric Strength Member	FRP (0.5mm x 2ea)
Suspension Wire	Zinc coated Steel Wires - Diameter : 1.2mm
Outer Jacket	LSZH (Low Smoke Zero Halogen)
Cable Outer diameter	Dimension : 2.0mm x 5.0mm ± 0.2mm
Weight	Nom. 20.5 kg/km

4. IDENTIFICATION

4.1 The Color Code of the individual fibers

Table 2. The Color Code of the fiber

No	1	2
Colors	Blue	Orange

4.2 Outer jacket color : Black or other colors

5. PHYSICAL / MECHANICAL / ENVIRONMENTAL PERFORMANCE AND TESTS

5.1 Temperature Range

For the cables covered by this specification, the following temperature ranges apply:

- Storage/Shipping temperature range : -30 to 60℃
- Operation temperature: -20 to 60℃
- Installation temperature: -30 to 60℃

5.2 Mechanical and Environmental Performance of the Cable

The mechanical and environmental performance of the cable shall be in accordance with Table below.

Table 3. The Mechanical and Environmental Performance of the Cable

ITEMS	TEST METHOD AND ACCEPTANCE CRITERIA
Tensile Performance	# Test method: IEC 60794-1-2 Method E1 - Mandrel diameter: 30D (D = cable diameter) - Length under tension: ≥ 50 m - Applied tensile load: Installation : 1000 N, Static : 400N -. Duration: 5 minutes # Acceptance Criteria -. Attenuation increment: ≤ 0.10 dB -. No jacket cracking and fiber breakage
Crush	# Test method: IEC 60794-1-2 Method E3 -. Applied load: 1000N/50mm -. Duration of loading: 5 minutes # Acceptance Criteria -. Attenuation increment: ≤0.10 dB
Impact	# Test method: IEC 60794-1-2 Method E4 -. Height of impact: 1000mm -. Drop hammer mass: 1kg -. No. of impact : 10 point # Acceptance Criteria -. Attenuation increment: ≤0.10 dB
Repeated Bending	# Test method: IEC 60794-1-2 Method E6 -. Sheave diameter: 20D (D = cable diameter) -. No. of flexing cycles: 25 cycles -. Flexing speed: 2 seconds/cycle # Acceptance Criteria -. Attenuation Increment: ≤0.10 dB
Temperature Cycling	# Test method: IEC 60794-1-2 Method F1 -. Temperature cycling schedule 25℃→-30℃→60℃→-30℃→60℃→25℃ -. Soak time at each temperature: 8hours # Acceptance Criteria -.Attenuation Increment:≤0.20dB/km

6. PACKING AND MARKING

6.1 Cable Marking

6.1.1 Standard length of cable shall be 2,000m. Other cable length is also available if requested by customer.

6.1.2 Each length of the cable shall be wound on a separate MDF reels.

6.1.3 Both ends of the cable shall be sealed with suitable plastic caps to prevent the entry of moisture during shipping, handling and storage.

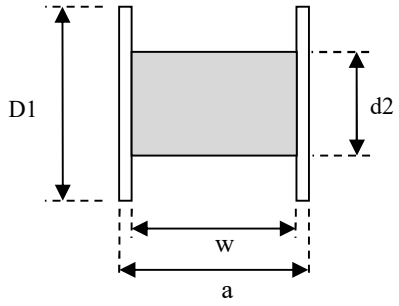
6.1.4 The cable ends shall be securely fastened to the reel to prevent the cable from becoming loose in transit or during placing operations.

6.1.5 Each reels shall be well packed in individual carton box.

6.2 Packing Detail

6.2.1 Reel dimension

Cable Type	Dimension				Cable Length	Weight (kg / EA)
	D1	d2	W	a		
1C	320mm	150mm	265mm	295mm	1.0km	0.7kg



6.2.2 Carton Box

Material	Size (mm)	Weight (kg / EA)
Kraft liner brown	335(W) x 350(L) x 370(H)	1.0

6.2.3 Pallet packing

Material	Size (mm)	Weight (kg / EA)	Box Quantity (EA)
Wooden	1100(W) x1100(L) x 130(H)	12.0	36

7. QUALITY CONTROL

7.1 Incoming Inspection

All the raw materials that are used for optical fiber cable shall be inspected by the raw material testing methods that are specified by the manufacturer and that are based on 'Korea Standard' or 'ASTM'.
In some cases, suppliers' test report shall substitute for the raw material manufacturer's test. Any materials that do not meet the manufacturer's raw material specification shall be rejected or scrapped, and the passed materials only shall be used in the process. Some raw material specifications and subsequent raw material test method may be changed without notice, if and only if the new specification and the new test method do not affect the quality of optical fiber cable.

7.2 In-Process Inspection

Semi-final goods shall be inspected in accordance with specified manufacturer's testing method. The testing method may be changed without notice, if it does not affect quality of optical fiber cable.

7.3 Final Cable Inspection

Following quality properties of finished cable shall be tested to assure the field performances.

- √ Construction / Material
- √ Mechanical characteristics
- √ Optical characteristics

7.4 Quality System

International Industrial Certification (IIC) applied ISO 9001 and ISO 14001 to assure the conformance to specified requirements during our production.

8. SAFETY

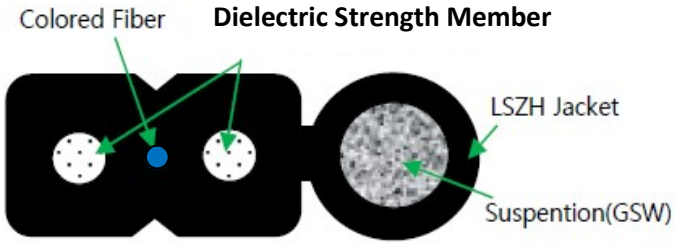
8.1 ROHS Directive

All cables and any associated packing and labeling materials shall meet RoHS (Restriction of the Use of certain Hazardous Substances) regulations as appropriate.

8.2 ISPM 15 Directive

All wooden packing materials shall meet ISPM (International Standards for Phytosanitary Measures) regulations as appropriate

Cross-Sectional Drawing



- End of Specification -