CFOA-SM-AS200-TS XX FIBRAS

Description

CFOA-SM-ASY-TS XXFIBRAS, rated cable that consists of loose tubes stranded around the non-metal central strength member (FRP). The cable core wrapped with water blocking tape or water blocking yarns for water blocking, and then Kevlar yarns are applied over the cable core. Polyethylene (PE) is extruded as outer sheath. The loose tube sheathing is made of high modulus plastics (PBT). The individual fibers are secondary coated into the loose tube with suitable excess.

Characteristics

- All dielectric structure, light weight, easy installation, good electromagnetic resistance, suitable for operating in the electrical system on towers and poles of high voltage power line to meet the demands of the power sector.
- The cable is ideal for installation in distribution as well as transmission environments; including live-line installations.
- Kevlar, as the main tensile strength member, has the advantages of high Young's modulus, light, minor long-term extension. Its minor negative heat-expansion coefficient improves cable temperature property.
- The amount of Kevlar applied to the cable can be adjusted to obtain the mechanical properties required by the environment (span, sag, ice load, wind speed, etc.).
- No support or messenger wire is required. Installation is achieved in a single pass.
- Precision design and optimum control of excess length of the fibers in the tube to ensure suited strain on the fibers, individually or collectively.
- Strict craft and raw material control enable lifespan over 30 years.

Cable Cross-Section:

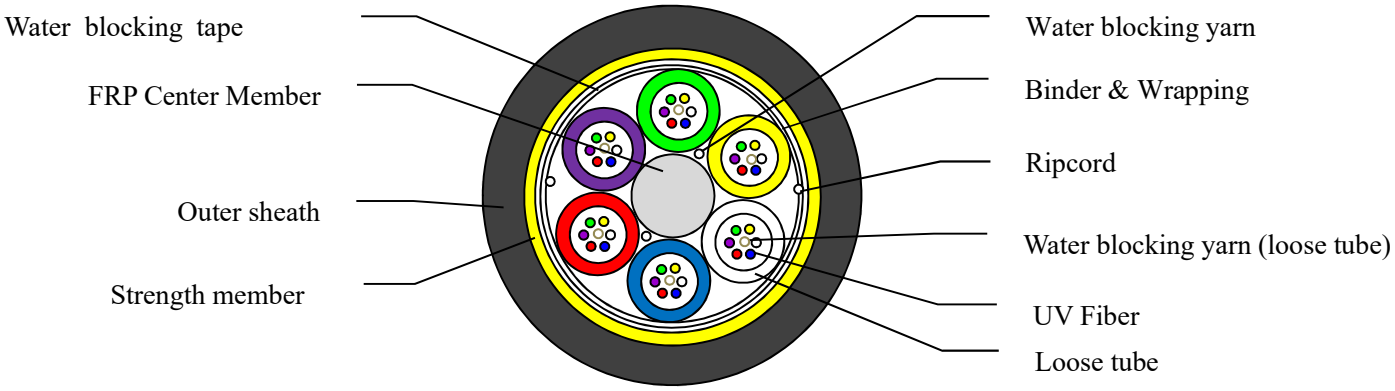


Figure. Cable Cross-Section (A-end)

Item	Material	Description
Outer sheath	PE	PE
Strength member	Aramid yarn	Additional strength member
Binder & Wrapping	Polyester Yarn	Cable core binding
Water blocking tape	Water blocking tape	Water blocking & moisture proof
Loose tube	PBTP	Colors of tubes: green, yellow, white, blue, red, violet, brown, pink, black, gray, orange, aqua
Water blocking yarn (loose tube)	Water blocking yarn	Water blocking & moisture proof
Fiber	Silicon-based fiber(G.652D)	UV colored fiber with: green, yellow, white, blue, red, violet, brown, pink, black, gray, orange, aqua
Water blocking yarn	Water blocking yarn	Water blocking & moisture proof
Center Member	FRP	FRP

Y=200m (span) XX= 6-144 (cable cores)

Cable Cores	Unit	6	12	18	24	36
No. of Tubes		3	6	3	4	6
No. of Fillers		3	0	3	2	0
Fiber Counts in Tube		2	2	6	6	6
Cable Diameter	Mm	9.6±0.5		9.9±0.5		
Cable Weight	Kg/km	70±10		74±10		
Cable Cores	**Unit**	**48**	**60**	**72**	**144**	
No. of Tubes		4	5	6	12	
No. of Fillers		2	1	0	0	
Fiber Counts in Tube		12	12	12	12	
Cable Diameter	Mm	10.9±0.5			15.7±0.5	
Cable Weight	Kg/km	88±10			180±10	
Allowable tensile strength (N)					Y=200, 3×P	
Allowable crush resistance (N)					1×P，minimum 1000N	
Operation temperature					-20 °C +65 °C	
Min bending radius during installation/ after installation					20D/ 10D D is the diameter of cable	

P is the weight/km

1. General

1.1 This specification covers the requirements for the supply of dry core, single-mode optical fiber cables.

1.2 This single mode optical fiber cable shall comply with the requirements of this specification and ITU-T G.652D.

2. Fiber characteristics

The optical, geometrical, mechanical and environmental performance of the optical fiber shall be in accordance with tables 2.1.

The manufacture is FiberHome.

Table 2.1 G.652D fiber characteristics

G.652D fiber characteristics		
Optics specifications		
Attenuation	@1310nm	Max value＜0.36dB/km
	@1550nm	Max value＜0.22dB/km
Dispersion	@1285nm～1330nm	-3.0ps/(nm·km)～3.0ps/(nm·km)
	@1550nm	≤18ps/(nm·km)
	@1625nm	≤22ps/(nm·km)
Zero-Dispersion wavelength		1300nm～1324nm
Zero-Dispersion slope		≤0.092ps/(nm^2·km)
Mode field diameter (MFD) at 1310nm		9.3±0.5μm
Mode field diameter (MFD) at 1550nm		10.4±0.8μm
PMD	Max. for fiber on the reel	0.20ps/km$^{1/2}$
	Max. for link designed value	0.10ps/km$^{1/2}$

Cable cutoff wavelengthλ_{cc}(nm)		≤1270nm
Effective group index（N_{eff}）@1310nm		1.4675
Effective group index（N_{eff}）@1550nm		1.4680
Back scatter characteristics(at 1310nm&1550nm)		
Point discontinuity		≤0.05dB
Attenuation uniformity		＜0.08dB/km
Attenuation coefficient difference for bi-directional measurement		≤0.05dB/km
Geometrical characteristics		
Cladding diameter		125±1.0μm
Cladding non-circularity		≤1%
Core/cladding concentricity error		≤0.6μm
Fiber diameter with coating (uncolored)		245±10μm
Cladding/coating concentricity error		≤12.0μm
Curl		≥4m
Mechanical characteristics		
Proof stress		≥0.69GPa(100kpsi)
Coating strip force(typical value)		1.4N
Dynamic stress corrosion susceptibility parameter(typical value)		≥20
Macrobend loss at 1550nm	Φ60mm,100 turns	≤0.05dB
	Φ32mm,1turn	≤0.1dB
Environmental characteristics (at 1310nm & 1550nm)		
Temperature induced attenuation(-60~+85℃)		≤0.05dB/km
Dry heat induced attenuation (85℃±2℃,30 days)		≤0.05dB/km
Water immersion induced attenuation(23℃±2℃, 30 days)		≤0.05dB/km
Damp heat induced attenuation(85℃±2℃,RH85%,30 days)		≤0.05dB/km

3. PHYSICAL, MECHANICAL, ENVIRONMENTAL, PERFORMANCE AND TESTS

3.1 Mechanical and Environmental Performance of the Cable

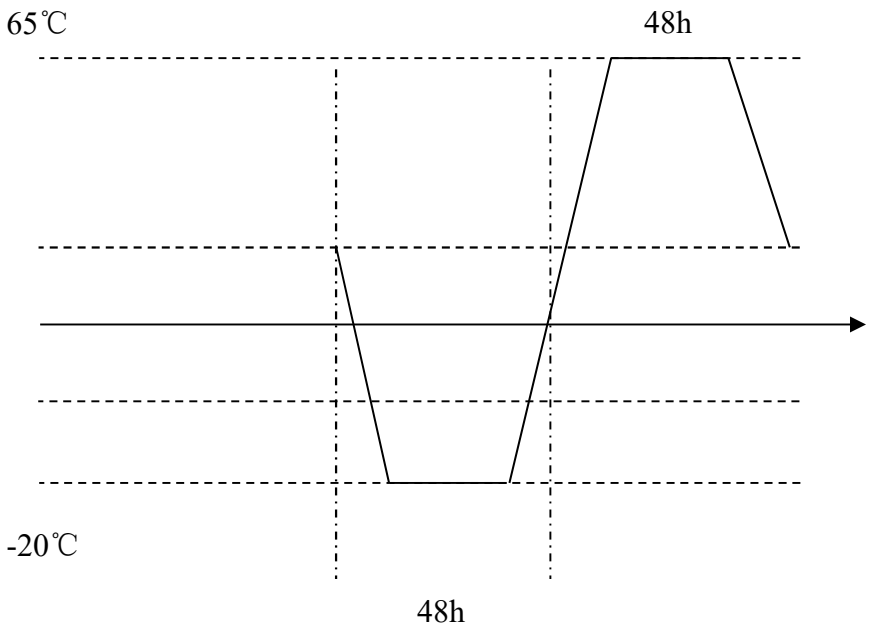
The mechanical and environmental performance of the cable shall be in accordance with Table 3.1 below. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1550nm for single mode fiber.

Table3.1: The Mechanical and Environmental Performance of the Cable

Item	Test Method	Test Conditions	Acceptance Criteria
Tensile Strength	NBR13512	L ≥ 50 m Load: depend on cable weight and span	Additional attenuation≤0.1 dB No visible damage to the surface of outer sheath
Crush Resistance	NBR 13507	Load： depend on cable weight Length: 100 mm	Additional attenuation≤0.1 dB No visible damage to the surface of outer sheath

Item	Test Method	Test Conditions	Acceptance Criteria
Impact Resistance	NBR 13509	The impact of weight: depend on cable diameter Height: 150mm 3 point , 25 times per point	No crack to fiber No visible damage to the surface of outer sheath
Repeated bending	NBR 13507	Radius:6D Tests = 30 cycles	Additional attenuation≤0.1 dB No visible damage to the surface of outer sheath
Torsion	NBR 13513	The test length =0.2m, ±90degree, 10 cycles,	Additional attenuation≤0.1dB No visible damage to the surface of outer sheath

Item	Test Method	Test Conditions	Acceptance Criteria
Temperature cycling	NBR 13510	Operating Temperature: -20 º C to +65 º C Cycle time:48h Cycle:4	Additional attenuation ≤0.05 dB/km



4 Packing and Marking

4.1 Cable Packing

Standard length of cable shall be 4,000m per reel with a tolerance of ±1%. Other cable lengths are also available if requested by customer.

Each length of the cable shall be wound on a separate wooden reel.

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

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

The inner end of the cable is housed into a slot on the side of the reel without extra cable length for testing.

Wood-fiber board shall be secured with steel bands to protect the cable during normal handling and shipping.

4.2 Cable Reel

4.4.1 Details given below shall be distinctly marked with a weather-proof material on both outer sides of the reel flange:

1).Purchaser's name
2).Reel number
3).Name of the manufacturer
4).Year of manufacture
5).Arrow showing the direction the drum shall be rolled

6).An identification label according to drawing AMI03- 428

4.2.2 Other shipping mark is also available if requested by customer.

4.2.3 The cable shall be shipped on reels designed to prevent damage to the cable during shipment and installation.

4.2.4 The arbor holes provided in the reels shall be approximately 85 mm with a wood or steel hub in the arbor hole (in lieu of fiberboard).