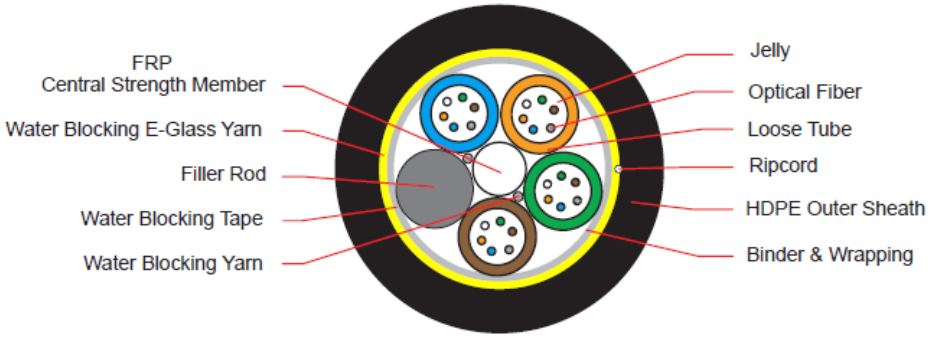

ADSS, OUTDOOR, MULTI-TUBE, SINGLE JACKET, FIBER OPTIC CABLE

1. APPLICATION

This specification covers the construction and properties of ADSS (All Dielectric Self-Support), Outdoor/Multi-tube, Single Jacket, fiber optic cable for aerial or duct installation. LINK fiber optic cable supports application such as 40/100Gbps Ethernet, IEEE802.3ae,10G Ethernet, IEEE802.3z,Gigabit Ethernet, Fast Ethernet, Ethernet, 100BASE-F, 52/155/622Mbps and 1.2Gbps ATM, FDDI, Fiber channel and others.

LINK ADSS, Outdoor/Multi-tube, Single Jacket, fiber optic cable. Singmode and Multimode color coded fibers are housed in multiple color coded plastic buffer tubes which are stranded around a dielectric central strength member. Dry water blocking tapes or yarns, wrapped around the core, provide protection against water ingress. These user friendly elements replace the sticky cable filling gel used in traditional loose tube cable designs. Water blocking E-glass yarns which provide additional tensile strength, are applied over the cable core. The cable sheath is high density polyethylene jacket.

LINK fiber optic cable in accordance with

ANSI/TIA-568-C.3	ISO/IEC 11801:2011 (Ed.2.2)
ANSI/TIA/EIA-568-B.3	ISO/IEC 11801:2002
ANSI/ICEA 640	IEC 60793, IEC 60794-1-2
Telcordia (Bellcore) GR-20-CORE	EN 50173-1
IEEE P-1222	EN 187000
ITU-T G.652D(Singlemode)	TIS 2166-2548
ITU-T G.651(Multimode)	RoHS Compliant

2. ORDER INFORMATION

ADSS, OUTDOOR/MULTI-TUBE, SINGLE JACKET, FIBER OPTIC CABLE

Descriptions	OS2, SM 9/125 µm	OM1, MM 62.5/125 µm	OM2, MM 50/125 µm	OM3, MM 50/125 µm	OM4, MM 50/125 µm
6 Core	UFC9706CM	UFC6706CM	UFC5706CM	UFC4706CM	UFC3706CM
12 Core	UFC9712CM	UFC6712CM	UFC5712CM	UFC4712CM	UFC3712CM
24 Core	UFC9724CM	UFC6724CM	UFC5724CM	UFC4724CM	UFC3724CM
36 Core	UFC9736CM	UFC6736CM	UFC5736CM	UFC4736CM	UFC3736CM
48 Core	UFC9748CM	UFC6748CM	UFC5748CM	UFC4748CM	UFC3748CM
60 Core	UFC9760CM	UFC6760CM	UFC5760CM	UFC4760CM	UFC3760CM
72 Core	UFC9772CM	UFC6772CM	UFC5772CM	UFC4772CM	UFC3772CM
96 Core	UFC9796CM	UFC6796CM	UFC5796CM	UFC4796CM	UFC3796CM
120 Core	UFC97120CM	UFC67120CM	UFC57120CM	UFC47120CM	UFC37120CM
144 Core	UFC97144CM	UFC67144CM	UFC57144CM	UFC47144CM	UFC37144CM

3. OPTICAL FIBER

Items		Specifications
Fiber Type		9/125 µm (OS2)
Max. / Typ. Attenuation	1310 nm	≤ 0.35 / ≤ 0.33 dB/km
	1383 nm	≤ 0.35 / ≤ 0.31 dB/km
	1550 nm	≤ 0.21 / ≤ 0.19 dB/km
	1625 nm	≤ 0.23 / ≤ 0.20 dB/km
Core	Mode Field Diameter	9.2 ± 0.4 µm @ 1310 nm 10.4 ± 0.5 µm @ 1550 nm
Cladding Diameter		125 ± 0.7µm
Coating Diameter, Primary		242 ± 5 µm
Coating Diameter, Secondary		250 ± 5 µm
Cladding Non-circularity		≤ 0.7 %
Core/Cladding Concentricity error		≤ 0.5 µm
Coating/Cladding Concentricity error		≤ 12 µm
Zero Dispersion Wavelength		1300 ~ 1324 nm
Zero Dispersion Slope		≤ 0.092 ps/(nm^2.km)
Cut-off Wavelength	λ o (Fiber)	1150 ~ 1330 nm
	λ ∞ (Cable)	≤1260nm
Proof Test Stress		100 Kpsi
Chromatic Dispersion	λ ; 1285~1340nm	≤ 3.5 ps/nm.km
	λ = 1550nm	≤ 18 ps/nm.km
	λ = 1625nm	≤ 22 ps/nm.km
Polarization mode dispersion (PMD)		≤ 0.20 ps/√km
Fiber Curl		≥ 4M
Numerical Aperture		0.130 ± 0.010
Group refractive index	1310nm	1.4676
	1550nm	1.4682

Table 1 The Optical, Geometrical Performance of the Singlemode Fiber (The specification conforms to the requirement of ISO/IEC11801, ANSI/TIA-568-C.3, IEC 60793-2B1.3, ITU-T G.652D)

Items		Specifications			
Fiber Type		62.5/125 µm (OM1)	50/125 µm (OM2)	50/125 µm (OM3)	50/125 µm (OM4)
Max./ Typ. Attenuation (dB/km)	850 nm	≤ 3.0 / ≤ 2.7	≤ 2.7 / ≤ 2.5	≤ 2.7 / ≤ 2.3	≤ 2.7 / ≤ 2.3
	1300 nm	≤ 0.8 / ≤ 0.6	≤ 0.8 / ≤ 0.7	≤ 0.8 / ≤ 0.6	≤ 0.8 / ≤ 0.6
Bandwidth (MHz/km)	850 nm	≥ 200	≥ 500	≥ 1500	≥ 3500
	1300 nm	≥ 600	≥ 500	≥ 500	≥ 500
850nm Laser Bandwidth (MHz/km)		N.A	N.A	≥ 2000	≥ 4700
Core Diameter (µm)		62.5 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5
Cladding Diameter (µm)		125 ± 1	125 ± 1	125 ± 1	125 ± 1
Core Non-circularity (%)		≤ 5	≤ 5	≤ 5	≤ 5
Cladding Non-circularity (%)		≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0
Core/Cladding Concentricity error (µm)		≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Coating Diameter, Primary (µm)		242 ± 5	242 ± 5	242 ± 5	242 ± 5
Coating Diameter, Secondary (µm)		250 ± 5	250 ± 5	250 ± 5	250 ± 5
Coating Non-Circularity (%)		≤ 5	≤ 5	≤ 5	≤ 5
Coating/Cladding Concentricity error (µm)		≤ 12	≤ 12	≤ 12	≤ 12
Proof Test Stress (kpsi)		100	100	100	100
Bending Loss @ 850 & 1300 nm (100 turns, D=75 mm)		≤ 0.5 dB	≤ 0.5 dB	≤ 0.5 dB	≤ 0.5 dB
Zero-Dispersion Wavelength		1332~1354	1295~1315nm	1295~1315nm	1295~1315nm
Zero-Dispersion Slope (ps/(nm^2.km))		≤ 0.097	≤ 0.101	≤ 0.101	≤ 0.101
Numerical Aperture		0.275 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015
Group refractive index	850nm	1.496	1.482	1.482	1.482
	1300nm	1.491	1.477	1.477	1.477

Table 2 The optical, Geometrical Performance of the Multimode Fiber (The specification conforms to the requirement of ISO/IEC11801, ANSI/TIA-568-C.3, IEC 60793-2A1a, IEC 60793-2A1b, ITU -T G.651)

4. CABLE CONSTRUCTION

The construction of the cable shall be in accordance with Table 3 below.

Item		Description		
Number of fibers		6-24	36-60	72
Loose Tube	Material	PBT (Polybutylene Terephthalate) with color coding		
	Filling Compound	Thixotropic Jelly Compound		
	Fiber per Tube	6	12	
	Number	1-4	3-5	6
Filler Rod	Material	Plastic rod, natural color		
	Number	4-1	2-0	0
Stranding	Method	Reverse oscillating lay (ROL) technique (SZ Direction)		
Central Strength Member	Material	FRP (Fiberglass Reinforce with Plastic)		
	Color	Natural		
Water Blocking Yarn	Material	Suitable Water Swellable Materials (Dry-Core Technology)		
Binder & Wrapping	Material	Polyester yarns		
Water Blocking Tape	Thickness	0.3 ± 0.05 mm.		
Ripcord	Material	Plastic thread		
	Number	1		
Additional Strength Member	Material	Water blocking E-glass yarn (aramid yarn is available on request)		
Outer Sheath	Material	UV-Proof, Black HDPE (with color strip is available on request)		
	Thickness(Approx.)	1.6 mm.		
Cable Diameter (Approx.)		9.2 ± 1 mm.	9.6 ± 1 mm.	9.9 ± 1 mm.
Cable Weight (Approx.)		60 ± 10 kg. /km.	70 ± 10 kg. /km.	78 ± 10 kg. /km.

Table 3 Construction of ADSS, Outdoor/Multi-tube, Single Jacket, Fiber optic cable.

5. TEMPERATURE RANGE

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

- Operation Temperature : -40°C to +70°C
- Installation Temperature : -40°C to +70°C
- Storage/Shipping Temperature : -40°C to +75°C

6. MECHANICAL SPECIFICATION

Item		Specification
Maximum Span Length	Sag 0.5%	40 m.
	Sag 1.0%	80 m.
Maximum Wind Velocity		126 km. /hr.
Max. Tensile load	Installation	1,800 N. for 6-72 Cores
	Operation	1000 N. for 6-72 Cores
Maximum Crush resistance		2,200 N. /10 cm.
Minimum bending Radius	Installation	20 x Diameter of Cable
	Operation	10 x Diameter of Cable

Table 4 Mechanical Specification of the cable.

7. FIBER AND LOOSE TUBE IDENTIFICATION

The color code of the loose tubes and the individual fibers within each loose tube shall be in accordance with Table 4 below TIA/EIA-598-C (Rev. TIA/EIA-598-A) and EIA-359-A Color Code for Fiber and Loose tube Identification.

No.	Fiber color	Loose Tube color
1	Blue	Blue
2	Orange	Orange
3	Green	Green
4	Brown	Brown
5	Slate	Slate
6	White	White
7	Red	Red
8	Black	Black
9	Yellow	Yellow
10	Violet	Violet
11	Rose	Rose
12	Aqua	Aqua

Table 4 TIA/EIA-598-C Color Code for Fiber and Loose tube Identification.

8. MECHANICAL PERFORMANCE TEST

- Tensile loading Test — TIA/EIA-455-33A and IEC 60794-1-2-E1A
- Compression Test — TIA/EIA-455-41A and IEC 60794-1-2-E3
- Repeated Bending Test — TIA/EIA-455-104A and IEC 60794-1-2-E6
- Impact Test — TIA/EIA-455-25B and IEC 60794-1-2-E4
- Cable Bending Test — IEC 60794-1-2-E11B
- Cable Twist or Torsion Test — TIA/EIA-455-85A and IEC 60794-1-2-E7
- Temperature Cycling Test — TIA/EIA-455-3A and IEC 60794-1-2-F1
- Water Penetration Test — TIA/EIA-455-82B and IEC 60794-1-2-F5

- END OF SPECIFICATION -