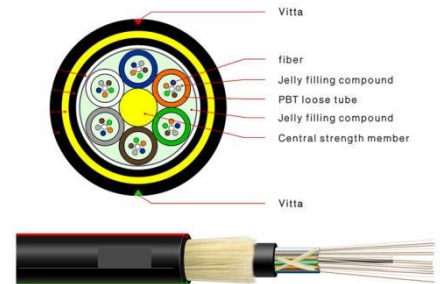




OUTDOOR, MULTI-TUBE, ARMORED, SINGLE JACKET, FIBER OPTIC CABLE 12 Core

APPLICATION

This specification covers the construction and properties of ARSS (Anti-Rodent Self-Support), Outdoor/Multi-tube, Armored, Single Jacket, fiber optic cable for aerial, direct buried and duct installation. 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, Outdoor / Multi-tube, Single Jacket, fiber optic cable. Single mode 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



LINK fiber optic cable in accordance with

ANSI/TIA-568.3-D	ISO/IEC 11801:2011
ANSI/TIA-568-C.3	ISO/IEC 11801:2017
ANSI/ICEA 640	IEC 60793, IEC 60794-1-2
Telcordia (Bell core) GR-20-CORE	EN 50173-1
ITU-T G.652D (Single mode)	TIS 2166-2548
ITU-T G.651 (Multimode)	RoHS Compliant

OPTICAL FIBER

Items		Specifications
Fiber Type		9/125 μm (OS2)
Max. / Typ. Attenuation	1310 nm	$\leq 0.35 / \leq 0.33$ dB/km
	1383 nm	$\leq 0.35 / \leq 0.31$ dB/km
	1550 nm	$\leq 0.21 / \leq 0.19$ dB/km
	1625 nm	$\leq 0.23 / \leq 0.20$ dB/km
Core	Mode Field Diameter	9.2 \pm 0.4 μm @ 1310 nm 10.4 \pm 0.5 μm @ 1550 nm
Cladding Diameter		125 \pm 0.7 μm
Coating Diameter, Primary		242 \pm 5 μm
Coating Diameter, Secondary		250 \pm 5 μm
Attenuation (Homogeneity)		Max 0.1 dB/km
Zero Dispersion Wavelength		1300 ~ 1324 nm
Zero Dispersion Slope		≤ 0.092 ps/(nm ² .km)
Cut-off Wavelength	A _o (Fiber)	1150 ~ 1330 nm
	A _∞ (Cable)	≤ 1260 nm
Proof Test Stress		100 Kpsi
Chromatic Dispersion	A ; 1285~1340 nm	≤ 3.5 ps/nm.km
	A = 1550 nm	≤ 18 ps/nm.km
	A = 1625 nm	≤ 22 ps/nm.km
Fiber Curl		≥ 4 M
Numerical Aperture		0.130 \pm 0.010
Group refractive index	1310 nm	1.4676
	1550 nm	1.4682



The Optical, Geometrical Performance of the Single mode 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		50/125 μ m	50/125 μ m	50/125 μ m	50/125 μ m
		(OM2)	(OM3)	(OM4)	(OM5)
Max./ Typ. Attenuation (dB/km)	850 nm	$\leq 2.7 / \leq 2.5$	$\leq 2.7 / \leq 2.3$	$\leq 2.7 / \leq 2.3$	$\leq 2.7 / \leq 2.3$
	1300 nm	$\leq 0.8 / \leq 0.7$	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.6$
	953 nm	N.A	N.A	N.A	$\leq 2.3 / \leq 2.0$
Bandwidth (MHz/km)	850 nm	≥ 500	≥ 1500	≥ 3500	≥ 3500
	1300 nm	≥ 500	≥ 500	≥ 500	≥ 500
	953 nm	N.A	N.A	N.A	≥ 1850
850nm Laser Bandwidth (MHz/km)		N.A	≥ 2000	≥ 4700	≥ 4700
953nm Laser Bandwidth (MHz/km)		N.A	N.A	N.A	≥ 2470
Core Diameter (μ m)		50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5
Cladding Diameter (μ m)		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 (μ m)		≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Coating Diameter, Primary (μ m)		242 ± 5	242 ± 5	242 ± 5	242 ± 5
Coating Diameter, Secondary (μ m)		250 ± 5	250 ± 5	250 ± 5	250 ± 5
Coating Non-Circularity (%)		≤ 5	≤ 5	≤ 5	≤ 5
Coating/Cladding Concentricity error (μ m)		≤ 12	≤ 12	≤ 12	≤ 12
Numerical Aperture		0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015
Group refractive index	850 nm	1.482	1.482	1.482	1.482
	1300 nm	1.477	1.477	1.477	1.477

CABLE CONSTRUCTION

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

Item	Description				
	6-24	36-60	72	96	120
Number of fibers					
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	8	10
Filler Rod	Material	Plastic rod, natural color			
	Number	4-1	2-0	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	2			
Additional Strength Member	Material	Water blocking E-glass yarn (aramid yarn is available on request)			
Armored	Material	Corrugated chrome steel tape coated with polymer			
	Thickness	Steel & Polymer coating: 0.25 mm.			
Outer Sheath	Material	UV-Proof, Black HDPE (with color strip is available on request)			
	Thickness (Approx.)	1.6 mm.			

Construction of ARSS, Outdoor/Multi-tube, Armored, Single Jacket, Fiber optic cable.



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

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.
	Operation	1,000 N.
Maximum Crush resistance		3,400 N./10 cm.
Minimum bending Radius	Installation	20 x Diameter of Cable
	Operation	10 x Diameter of Cable

Mechanical Specification of the cable.

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