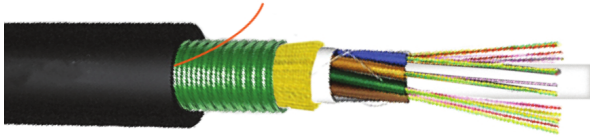
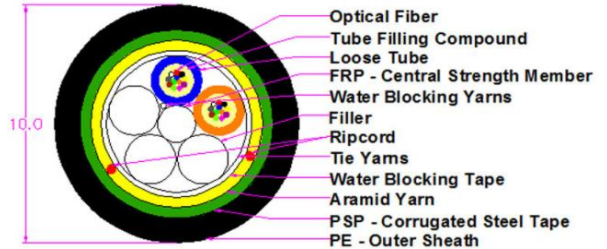


ARSS Fiber Optic Cable

Anti-Rodent Self-Supporting



Cable Structure



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. This 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.

Shogun ARSS, 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 sticky cable filling gel used in traditional loose tube cable designs. Aramid yarns, which provide additional tensile strength, are applied over the cable core. Corrugated steel tape provides for anti-rodent. The cable sheath is high density polyethylene jacket. Contain 6 to 312 cores.

Standard

TIA/EIA-598-C (Rev. TIA/EIA-598-A), EIA-359-A, ANSI/TIA-568.3-D, ANSI/TIA-568-C.3, ANSI/ICEA 640, Telcordia (Bellcore) GR-20-CORE, ITU-T G.652D (Singlemode), ITU-T G.651 (Multimode), ITU-TG 657A2, ISO/IEC 11801:2011 (Ed.2.2), ISO/IEC 11801:2017, IEC 60811-410, IEC 60811-607, IEC 60793, IEC 60794-1-2, EN 50173-1, TIS 2166-2548, RoHS Compliant

Physical Specification

Number of fibers		4-8	12-24	36-60	72-96
Loose Tube	Material	PBT (Polybutylene Terephthalate) with color coding			
	Filling Compound	Thixotropic Jelly Compound			
	Fiber per Tube	4	12		
	Number	1-2	1-2	3-5	8
Filler Rod	Material	Plastic rod, natural color			
	Number	4-1	2-0	0	0
	Diameter	2.2 ± 0.1 mm.			
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 (non Rodent Repellent/Rodent Repellent)			
	Thickness(Approx.)	1.6 mm.			
Cable Diameter (Approx.)		11.4 ± 1 mm.	11.9 ± 1 mm.	12.1 ± 1 mm.	12.4 ± 1 mm.
Cable Weight (Approx.)		67 ± 10kg./km.	70 ± 10kg./km.	110 ± 10kg./km.	135 ± 10kg./km.

ARSS Fiber Optic Cable

Anti-Rodent Self-Supporting

Physical Specification

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 ± 0.7 μm
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		≤ 0.20 ps/√km
(PMD) Fiber Curl		≥ 4M
Numerical Aperture		0.130 ± 0.010
Group refractive index @1310nm		1.4676
	@1510nm	1.4682

Note : 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)

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	3,600 N. for 6-96 Cores
	Operation	2,500 N. for 6-96 Cores
Maximum Crush resistance		3,400 N./10 cm.
Minimum bending Radius	Installation	20 x Diameter of Cable
	Operation	10 x Diameter of Cable

ARSS Fiber Optic Cable

Anti-Rodent Self-Supporting

Mechanical 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)

Optical Specification

Fiber Type		50/125 μm (OM2)	50/125 μm (OM3)	50/125 μm (OM4)	50/125 μm (OM5)
Max./ Typ. Attenuation (dB/km)	850 nm	≤ 2.7 / ≤ 2.5	≤ 2.7 / ≤ 2.3	≤ 2.7 / ≤ 2.3	≤ 2.7 / ≤ 2.3
	1300 nm	≤ 0.8 / ≤ 0.7	≤ 0.8 / ≤ 0.6	≤ 0.8 / ≤ 0.6	≤ 0.8 / ≤ 0.6
	953 nm	N.A	N.A	N.A	≤ 2.3 / ≤ 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 (μm)		50.0 ± 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		1295~1315nm	1295~1315nm	1295~1315nm	1295~1315nm
Zero-Dispersion Slope (ps/(nm2.km))		≤ 0.101	≤ 0.101	≤ 0.101	≤ 0.101
Numerical Aperture		0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015
Group refractive index	850nm	1.482	1.482	1.482	1.482
	1300nm	1.477	1.477	1.477	1.477

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)

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

Temperature Range

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