

FIBER OPTIC CABLE PRODUCT

ARSS FIBER OPTIC SINGLE JACKET CABLE.



PRODUCT DESCRIPTION

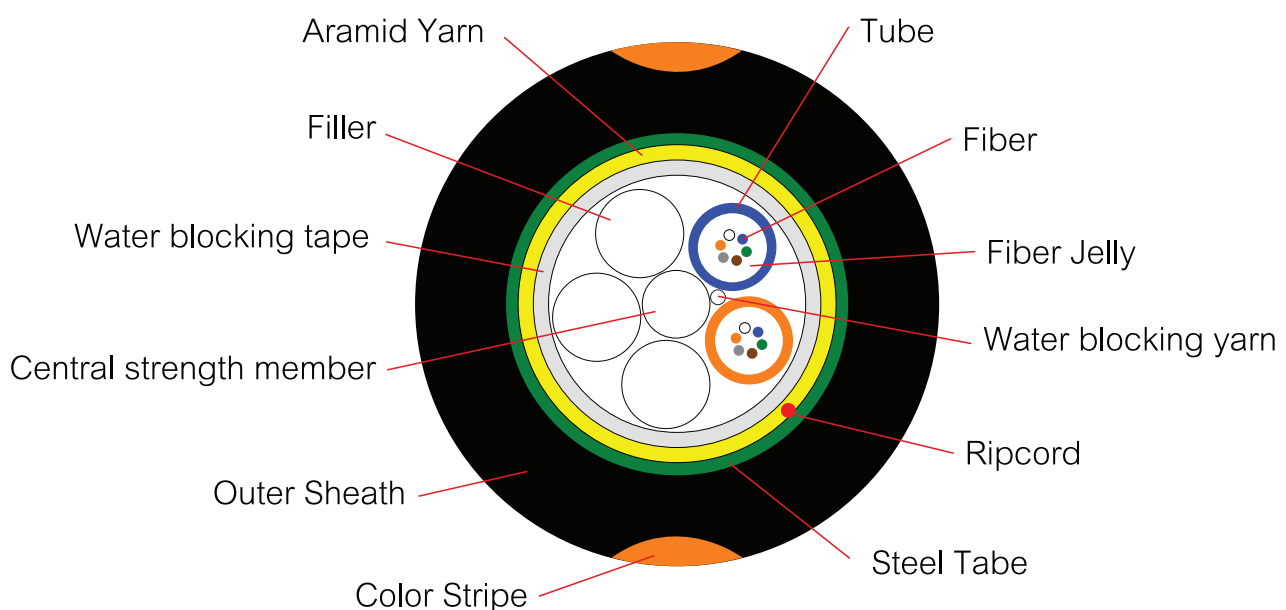
- Provide additional mechanical protection
- low friction installation
- Excellent protection from environmental hazards
- Code colour fiber and loose tube
- The cable shall be used for duct or aerial installed

APPLICATION

Environment with high electric field strength in the Power communication system and the area where frequent thunder happens.

STANDARD

- TIA/EIA-598-A ,TIA/EIA-598-C, ANSI/TIA/EIA-568-B.3, ANSI/ TIA-568-C.3, ANSI/TIA/EIA-568-D.3, ANSI/ICEA640
- IEEE802.3 (LAN, Ethernet Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet) , 10 GEthernet, ATM, FDDI, FTTX,Fiber Channel,CATV, Communication
- ISO/IEC 11801:2011(Ed.2.2)
- Telcordia (Bellcore) GR-20CORE
- IEC 60793-2B1.3, IEC 60794-1-2, ICEA696, IEC61034-2, IEC60754-2, IEC 60793, IEC 596
- IEC60794-1-2E4 . TIA-455-25C
- TIS 2166-2548,
- ITU-T G.652D, ITU-TG 657A2
- RoHS compliant
- Made in Thailand : MIT



CONSTRUCTION

Number of fibers		6-24	36-60	72	96
Loose Tube	Material	PBT (Polybutylene Terephthalate) with color coding			
	Filling Compound	Thixotropic Jelly Compound			
	Fiber per Tube	6	12	12	12
	Number	1-4	3-5	6	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(LS2))			
	Thickness(Approx.)	1.6 ± 0.2 mm.			
Cable Diameter (Approx.)		10.3 ± 1 mm.	10.7 ± 1 mm.	11.2 ± 1 mm.	12.4 ± 1 mm.
Cable Weight (Approx.)		90 ± 10kg./km.	100 ± 10kg./km.	110 ± 10kg./km.	135 ± 10kg./km.
Temperature Range	Operation Temperature	-40°C to +70°C			
	Installation Temperature	-40°C to +70°C			
	Storage/Shipping Temperature	-40°C to +75°C			

OPTICAL FIBER CHARACTERISTICS

CATEGORY	DESCRIPTION	SPECIFICATIONS
Optical Specifications		ITU-T G.652D(Singlemode OS2)
Attenuation	@1310nm	$\leq 0.35/\leq 0.33$ dB/km
	@1383nm	$\leq 0.35/\leq 0.31$ dB/km
	@1490nm	≤ 0.24 dB/km
	@1550nm	$\leq 0.21/\leq 0.19$ dB/km
	@1625nm	$\leq 0.23/\leq 0.20$ dB/km
Attenuation discontinuity		≤ 0.05 dB
Attenuation vs. Wavelength	1285 -1330 @1310nm	≤ 0.05 dB/km
	1525 -1575@1550nm	≤ 0.05 dB/km
Zero dispersion wavelength		1300 -1324 nm
Zero dispersion slope		≤ 0.092 ps/(nm ² .km)
Dispersion	@1310nm	≤ 3.5 ps/nm.km
	@1550nm	≤ 18 ps/nm.km
Polarization mode dispersion(PMD)		≤ 0.2 ps/km ^{1/2}
Cable cutoff wavelength (λ_{cc})		≤ 1260 nm
Effective group index of reaction	@1310nm	1.4675
	@1550nm	1.4681
Geometric Specifications		
Mode field diameter	@1310nm	9.2 ± 0.6 μ m
	@1550nm	10.4 ± 0.8 μ m
Cladding diameter		125 ± 1 μ m
Cladding non -circularity		≤ 1.0 %
Coating Material	Material	UV curable acrylate
	Diameter	250 ± 5 μ m
Coating/Cladding concentricity error		≤ 12 μ m
Core/Cladding concentricity error		≤ 0.5 μ m
Color Fiber Diameter		250 μ m ± 15 μ m (Colored)
Fiber proof-tested		0.69 GPa (1.0%, 100kpsi) in accordance with the optical fiber proof test by IEC 60793-1-30

OPTICAL FIBER CHARACTERISTICS

CATEGORY	DESCRIPTION	SPECIFICATIONS
Mechanical Specifications		
Proof test level		≥1.0 %
Fiber curl radius		≥4.0 m
Peak coating strip force		1.3 - 8.9N
Relative humidity		Up to 90%, no frost
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

IDENTIFICATION COLOR CODE OF FIBER AND LOOSE TUBE

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

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

PACKING AND DRUM

The cable is rounded on a non-returnable wooden drum. Cable Packing 4000m/reel. Both ends of cable are securely fastened to drum and sealed with a shrinkable cap to prevent ingress of moisture. The following information shall be marked on the outer sheath of the cable at an interval of about 1 meter.

- Cable type and number of optical fiber
- Manufacturer name
- Month and Year of Manufacture
- Cable length
- Logo and Thai word

The sequential number of the cable length shall be marked on the outer sheath of the cable at an interval of 1meter ± 1%

TEST REQUIREMENTS

Item	Method	Acceptance criteria
Tensile test	- Max. tensile strength: 2500 N	-Fiber strain at maximum
IEC 60794-1-2-E1A	- Sample length: 100 meters	-Load max. 0.33 %
TIA/EIA-455-33A	- Times: 1 hour	-Attenuation increase ≤ 0.1 dB
Crush or Compression test	- Load: 2200 N	-No splits or cracks in the outer jacket
IEC 60794-1-2-E3	- Time: 10 minutes	-Attenuation increase ≤ 0.10 dB
TIA/EIA-455-41A	- Length: 100 mm	
Impact test	- Height: 1 meter	- No splits or cracks in the outer jacket
IEC 60794-1-2-E4	- Impact energy :5N.m	-Attenuation increase ≤ 0.10 dB (after the test)
TIA/EIA-455-25C	- Radius of hammer head:12.5 $\pm$ 0.1mm	
	- Point of impact : 3	
	- No. of impact: 1 time each point	
Torsion or Twist test	- 1 m cable length with 150 N weight	- No splits or cracks in the outer jacket
IEC 60794-1-2-E7	- $\pm 180^\circ$,10 cycles	-Attenuation increase ≤ 0.10 dB (after the test)
TIA/EIA-455-85A		
Repeated bending	- Radius = 20 $\times$ cable outer diameter	- No splits or cracks in the outer jacket
Cable bending Test	- 1m cable length with 150 N weight, 30 cycles	-Attenuation increase ≤ 0.10 dB (after the test)
IEC 60794-1-2-E6,		
TIA/EIA-455-104A		
IEC 60794-1-2-E11B		
Temperature cycling test	- Temperature step: +20 $^\circ$ C -40 $^\circ$ C+70 $^\circ$ C-40 $^\circ$ C	-Attenuation variation for reference
IEC 60794-1-2-F1	+70 $^\circ$ C+20 $^\circ$ C	value(the attenuation to be measured before
TIA/EIA-455-3A	- Time per each step: 16 hrs.	test at +20 $\pm$ 3) ≤ 0.10 dB/km
	- Number of cycles: 2 cycles	
Water penetration test	- Water height: 1m	-No water leakage at the end of the sample
IEC 60794-1-2-F5	- Sample length:3m	
TIA/EIA-455-82B	- Duration of test: 24hrs	
Drip test	- Five 0.3m samples suspended vertically in a climate	-No filling compound shall drip from tubes after 24 hrs.
IEC 60794-1-2-E14	chamber, raised temperature to +70 $^\circ$ C	

ORDER INFORMATION F-ML-ARSS-9-MP-SJ-24

