

# FIBER OPTIC CABLE

ARSS FIBER OPTIC DOUBLE JACKET



## PRODUCT DESCRIPTION

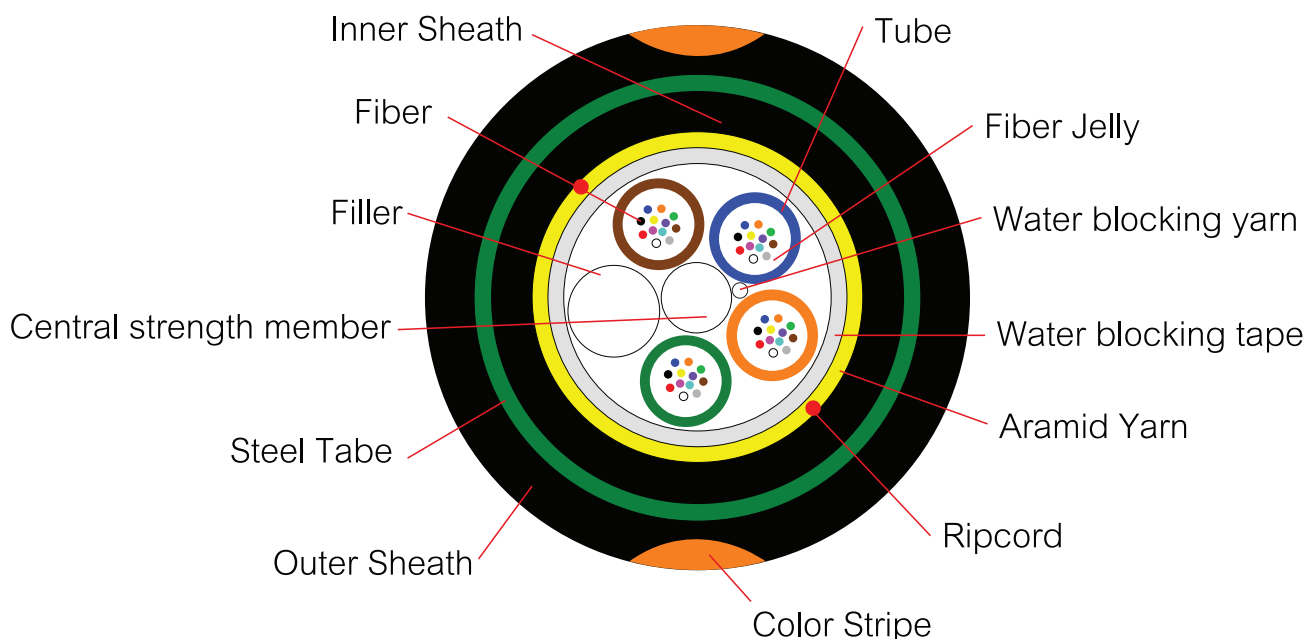
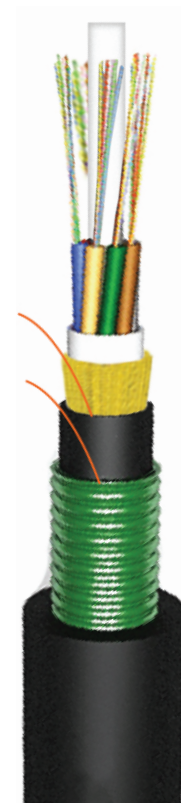
- Provide additional mechanical protection
- low friction installation
- Excellent protection from environmental hazards
- Code colour fiber and loose tube
- The cable shall be used for duct or aerial installed

## APPLICATION

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

## STANDARD

- ATM, FDDI, FTTX, Fiber Channel, CATV, Communication
- ISO/IEC 11801:2007, ISO/IEC 11801:2011(Ed.2.2)
- ANSI/TIA/EIA-568-B.3, ANSI/ TIA-568-C.3, ANSI/TIA-568.3-D, ANSI/ICEA 640
- Telcordia (Bellcore)GR-20CORE
- ANSI/ICEA 596, ICEA696, IEC61034-2, IEC60754-2, IEC60793, IEC60794-1-2
- ITU G.652D, ITU-TG 657A2
- TIA/EIA-598-C (Rev.TIA/EIA-598-A), EIA-359-A.
- IEEE802.3z, IEEE802.3ae, IEEE802.3 (LAN, Ethernet Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet 40-100 Gbps)
- RoHS compliant
- TISI-2166
- Made in Thailand : MIT



## CONSTRUCTION

Cable Type	ARSS DJ	
Number of Fibers	4,24,48	
Fiber	Construction	Consult 3.1
Central Strength Member	Material	FRP
Water Blocking	Material	Water Blocking Tape Water Blocking Yarn and
Member	Material	PBT
Tube	Filling Compound	Fiber Jelly
Filler	Material	PP
Additional Strength Member	Material	Aramid yarn or equivalent material
Rip Cord 1	No.	1
	Material	Polyester
Armor	Material	Corrugated steel tape coated with polymer on both sides
Inner Sheath	Material	PE (Black) , MDPE (Black)
	Thickness	Min. 1.0 mm
Rip Cord 2	No.	1
	Material	Polyester
Outer Sheath	Material	HDPE (Black) (With UV radiation protection)(no n Rodent Repellent/Rodent Repellent)
	Thickness	Min. 1.5 mm
Color Stripe	No	2 orange stripes
Span Length	40-100m	
Width	≥ 126 km/hr	
Temperature Range	Operation	-40°C to +70 °C
	Storage	-40°C to +75°C

## BUFFER TUBE STRANDING, CABLE SIZE AND WEIGHT

Fiber count	Fiber number per tube	Number of tube / filler	Diameter (±0.5 mm)
4	4	1/4	12.3
24	6	4/1	12.3
48	12	4/1	13.0

## OPTICAL FIBER CHARACTERISTICS

CATEGORY	DESCRIPTION	SPECIFICATIONS
<b>Optical Specifications</b>		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	$\leq 0.24$ dB/km
	@1550nm	$\leq 0.21/\leq 0.19$ dB/km
	@1625nm	$\leq 0.23/\leq 0.20$ dB/km
Attenuation discontinuity		$\leq 0.05$ dB
Attenuation vs. Wavelength	1285 -1330 @1310nm	$\leq 0.05$ dB/km
	1525 -1575@1550nm	$\leq 0.05$ dB/km
Zero dispersion wavelength		1300 -1324 nm
Zero dispersion slope		$\leq 0.092$ ps/(nm <sup>2</sup> .km)
Dispersion	@1310nm	$\leq 3.5$ ps/nm.km
	@1550nm	$\leq 18$ ps/nm.km
Polarization mode dispersion(PMD)		$\leq 0.2$ ps/km <sup>1/2</sup>
Cable cutoff wavelength ( $\lambda_{cc}$ )		$\leq 1260$ nm
Effective group index of reaction	@1310nm	1.4675
	@1550nm	1.4681
<b>Geometric Specifications</b>		
Mode field diameter	@1310nm	9.2 ± 0.6 $\mu$ m
	@1550nm	10.4 ± 0.8 $\mu$ m
Cladding diameter		125 ± 1 $\mu$ m
Cladding non -circularity		$\leq 1.0$ %
Coating Material	Material	UV curable acrylate
	Diameter	250 ± 5 $\mu$ m
Coating/Cladding concentricity error		$\leq 12$ $\mu$ m
Core/Cladding concentricity error		$\leq 0.5$ $\mu$ m
Color Fiber Diameter		250 $\mu$ m ± 15 $\mu$ 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
<b>Mechanical Specifications</b>		
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 $\leq$ 0.1dB
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 $\leq$ 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 $\leq$ 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° ,10 cycles	-Attenuation increase $\leq$ 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 $\leq$ 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 °C -40 °C+70 °C-40 °C	-Attenuation variation for reference
IEC 60794-1-2-F1	+70 °C+20 °C	value(the attenuation to be measured before
TIA/EIA-455-3A	- Time per each step: 16 hrs.	test at +20 $\pm$ 3 ) $\leq$ 0.10dB/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°C	

## ORDER INFORMATION

