

FIBER OPTIC CABLE PRODUCT

ADSS Double Jacket Fiber Optic Cable



PRODUCT DESCRIPTION

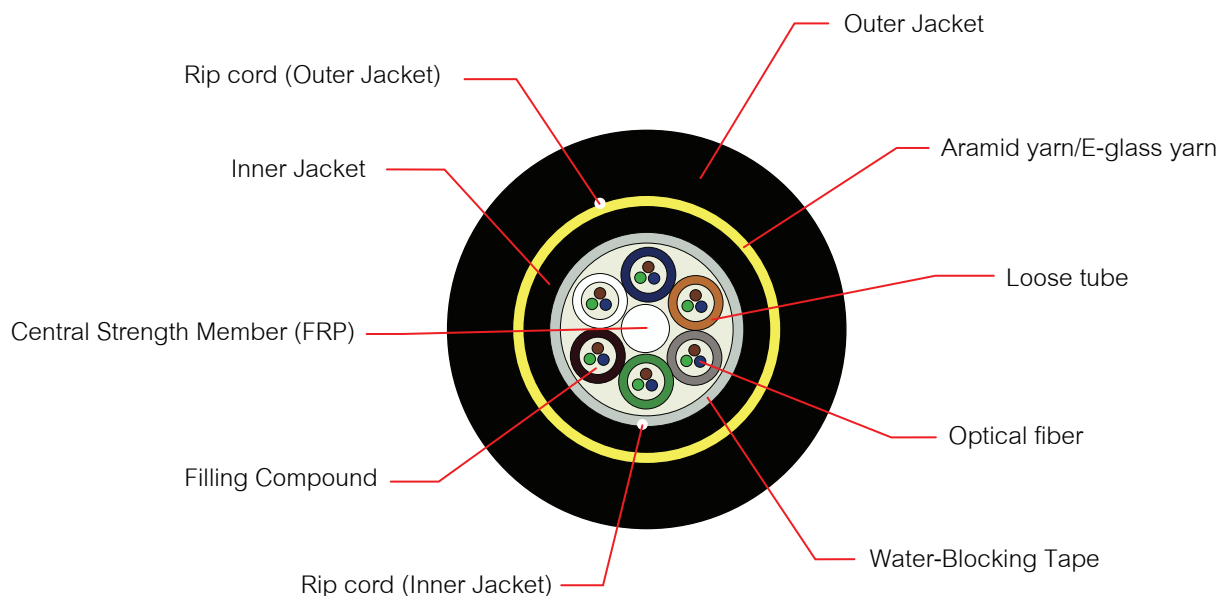
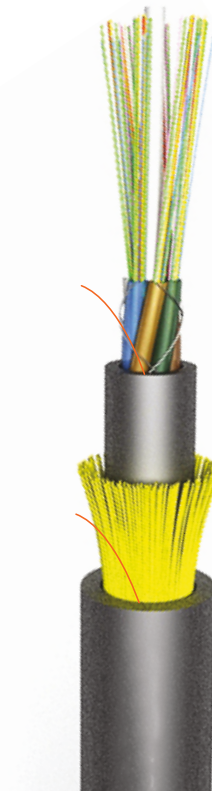
- The cable shall be used for aerial or duct installed.
- Provide additional mechanical protection.
- Low-friction installation.
- Excellent protection against UV, moisture, and mechanical impact.
- Single-mode fiber.
- Color-coded fibers and loose tubes are compliant with international standards.

APPLICATION

- Environment with high electric field strength in the power transmission communication systems and the area where areas prone to frequent lightning strikes.
- Ethernet LAN Network, CCTV, Network Camera, PLC.

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-20-CORE, GR-409-CORE
- ANSI/ICEA 596, ICEA S-696, IEC 61034-2, IEC 60754-2, IEC 60793, IEC 60794-1-2
- ITU-T G.652.D, ITU-T G.657.A2
- TIA/EIA-598-C (Rev. TIA/EIA-598-A), EIA-359-A
- IEEE 802.3z, IEEE 802.3ae, IEEE 802.3: LAN, Fast Ethernet, Gigabit Ethernet, and 10 Gigabit Ethernet (40-100 Gbps)
- RoHS compliant
- TIS 2166
- Made in Thailand (MIT)



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CONSTRUCTION CABLE

Cable type		ADSS
Core count		6
Central strength	Material	FRP (1.8 mm)
member Loose tube	Material	PBT
	Diameter	2.0 mm
		Each tube contains 6 fibers filled with thixotropic jelly compound.
Protective tape	Material	Water-blocking tape & Water Swellable yarn
Strength member	Material	Aramid yarns / E-glass yarn
Outer Sheath	Material	UV-Proof Black HDPE (non Rodent Repellent / Rodent Repellent(LS2))
	Thickness	1.8 ± 0.2 mm
Inner Sheath	Material	Black Polyethylene (PE)
	Material	Water blocking tape
Overall diameter	Diameter	13.4 mm - 16.4 mm
Weight		Approx. 180 kg/km
Tensile Load	Short term	5000N
	Long term	4000N
Bending radius	Short term	20H
	Long term	10H
Span		40-80m
Temperature Range	Operation	-40 °C + 70 °C
	Installation	-40 °C + 70 °C
	Storage	-40 °C + 75 °C
Max pole mounting span		80 m under wind force of 126 km/h
Rip Cord	Material	Polyester cords or Aramid yarn
	Number	2

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		80 m and wind force 126 Km/hr
Max. Tensile load	Installation	5000 N.
	Operation	4000 N.
Maximum Crush resistance		3,400 N./10 cm.
Minimum bending Radius	Installation	20 x Diameter of Cable
	Operation	10 x Diameter of Cable

OPTICAL FIBER CHARACTERISTICS

CATEGORY	DESCRIPTION	SPECIFICATIONS
Optical Specifications		ITU-T G.652D (Singlemode OS2) 9/125 μm (OS2) ITU-T G651(Multimode) 62.5/125 μm , 50/125 μm
Attenuation	@ 1310 nm	≤ 0.35 / $\leq 0.33\text{dB/km}$
	@ 1383 nm	≤ 0.35 / $\leq 0.31\text{dB/km}$
	@ 1490 nm	≤ 0.24 dB/km
	@ 1550 nm	≤ 0.21 / ≤ 0.19 dB/km
	@ 1625 nm	≤ 0.23 / ≤ 0.20 dB/km
Attenuation Discontinuity		≤ 0.05 dB
Attenuation vs. Wavelength	1285–1330 @ 1310 nm	≤ 0.05 dB/km
	1525–1575 @ 1550 nm	≤ 0.05 dB/km
Zero Dispersion Wavelength		1300-1324 nm
Zero Dispersion Slope		≤ 0.092 ps/(nm ² ·km)
Dispersion	@ 1310 nm	≤ 3.5 ps / (nm·km)
	@ 1550 nm	≤ 18 ps / (nm·km)
Polarization Mode Dispersion (PMD)		≤ 0.1 ps/ $\sqrt{\text{km}}$
Cable Cutoff Wavelength (λ_{cc})		≤ 1260 nm
Effective Group Refractive Index	@ 1310 nm	1.4676
	@ 1550 nm	1.4681
Geometrical Characteristics		
Mode Field Diameter	@ 1310 nm	9.2 ± 0.6 μm
	@ 1550 nm	10.4 ± 0.8 μm
Cladding Diameter		125 ± 1 μm
Cladding Non-Circularity		≤ 1.0 %
Coating Material	Material Diameter	UV curable acrylate 250 ± 5 μm
Coating/Cladding Concentricity Error		≤ 12 μm
Core–Cladding Concentricity Error		≤ 0.5 μm
Colored Fiber Diameter		$250 \mu\text{m} \pm 15 \mu\text{m}$ (Colored)
Fiber proof-tested		0.69 GPa (1.0%, 100 kpsi), tested per IEC 60793-1-30

Color Code Identification for Optical Fibers and Loose Tubes

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

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 wound on a non-returnable wooden drum with a standard packing length of 4000 meters per reel.

Both ends of the cable are securely fastened and sealed with heat-shrinkable end caps to prevent moisture ingress.

The following information shall be printed on the outer sheath of the cable at intervals of approximately 1 meter:

- Cable type and number of optical fibers
- Manufacturer's name
- Month and year of manufacture
- Cable length
- Company logo and Thai language marking

The sequential length marking shall be printed on the cable sheath at 1-meter intervals $\pm 1\%$.

TEST REQUIREMENTS

Item	Method	Acceptance criteria
Tensile test	- Max. tensile strength: 3000 N	- Maximum allowable fiber strain
IEC 60794-1-2-E1A	- Cable sample length: 100 m	- Maximum load: 0.33%
TIA/EIA-455-33A	- Times: 1 hour	- Attenuation increase ≤ 0.1 dB
Crush or Compression test	- Load: 2200 N	- No visible 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	- Impact energy: 450 g	- No splits or cracks in the outer jacket
IEC 60794-1-2-E4	- Height: 1 meter	- Attenuation increase ≤ 0.10 dB (after the test)
TIA/EIA-455-25C	- Minimum impact points: 1	
	- Number of impacts: 5	
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: $+20^\circ\text{C} \rightarrow -40^\circ\text{C} \rightarrow +70^\circ\text{C}$	- Attenuation variation for reference value
IEC 60794-1-2-F1	$\rightarrow +20^\circ\text{C}$	(the attenuation to be measured before test at $+20 \pm 3$)
TIA/EIA-455-3A	- Time per each step: 16 hrs.	$\leq 0.10\text{dB/km}$
	- Number of cycles: 2 cycles	
Water penetration test	- Water height: 1 m	- No water leakage at the end of the sample
IEC 60794-1-2-F5	- Sample length: 3 m	
TIA/EIA-455-82B	- Duration of test: 24 hrs	
Drip test	- Five 0.3m samples suspended vertically in a climate chamber, raised to $+70^\circ\text{C}$ in a climate chamber	- No filling compound shall drip from tubes after 24 hrs.
IEC 60794-1-2-E14		

ORDER INFORMATION

