

# FIBER OPTIC CABLE

ADSS FIBER OPTIC SINGLE JACKET



## PRODUCT DESCRIPTION

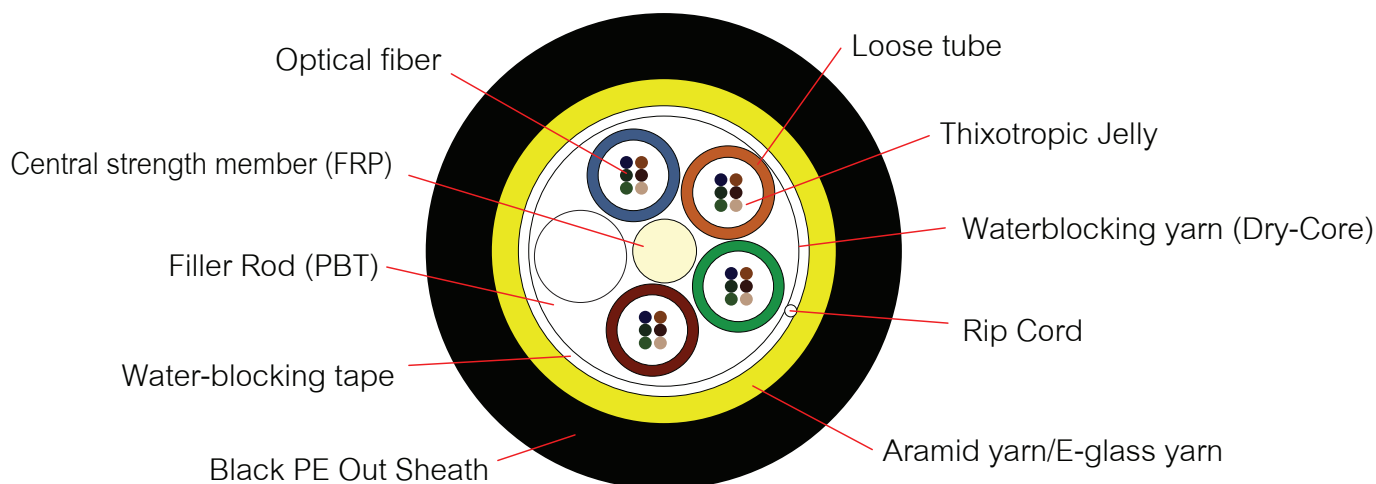
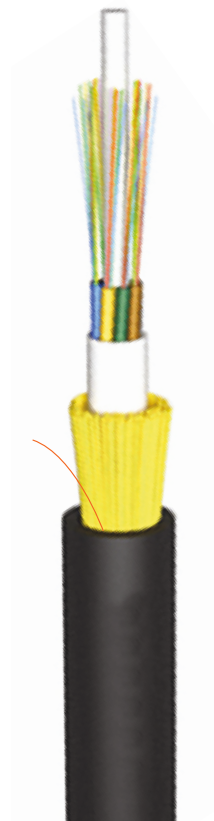
- The cable shall be used for aerial or duct installed.
- Provide additional mechanical protection.
- low friction installation.
- Excellent protection from environmental hazards.
- Single Mode (9/125 um).
- Color code fiber and Loose tube in standard.

## APPLICATION

- Outdoor environment with high electric field strength in the Power communication system and the area where frequent thunder happens suitable for both aerial or duct installation.
- 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-568
- ANSI/TIA/EIA-568-B.3, ANSI/TIA-568-C.3, ANSI/TIA-568.3-D, ANSI/ICEA 640
- Telcordia (Bellcore) GR-20CORE, GR-409-CORE
- ANSI/ICEA 596, ICEA696, IEC61034-2, IEC60754-2, IEC60793, IEC60794-1-2
- ITU-T 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
- TIS 2166-2548
- Made in Thailand : MIT



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## CONSTRUCTION CABLE

|                         |            |   |
|-------------------------|------------|---|
| Cable type              |            | ADSS  |
| Element                 | -          | 5   |
| Central strength member | Material   | FRP 1.5mm   |
| Loose tube              | Material   | PBT   |
|                         | Diameter   | 2.0 ± 0.2 mm  |
|                         | -          | 6 fiber per tube, Thixotropic Jelly compound.               |
| water blocking element  | Material   | Water -blocking tape and Water Swallable yarn               |
| Strength member         | Material   | Aramid yarns  |
|                         | Thickness  | 0.5 mm  |
| Outer Sheath            | Material   | UV-Proof Black HDPE (non Rodent Repellent/Rodent Repellent) |
|                         | Thickness  | 1.8±0.2mm   |
| Tensile Load            | Short term | 4000N   |
|                         | Long term  | 1800N   |
|                         | Pressure   | 2200N/10CM  |
| Overall diameter        | Diameter   | 9.5 mm  |
| Weight                  | -          | Approx. 43±10 kg/km   |
| Span Length             |            | 40-80m  |
| Temperature Range       | Operation  | -40 + 70°C  |
|                         | Storage    | -40 + 75°C  |
|                         | Installing | -40 + 70°C  |
| Relative humidity       |            | Up to 90%, no frost   |
| Pole mount              | -          | 80 m and wind force 128 Km/hr                               |
| Bending                 | Installing | 20  |
|                         | Using      | 10  |
| Rip Cord                | Material   | Polyester cords or Aramid yarn                              |
|                         | Number     | One   |

## BUFFER TUBE STRANDING

| Fiber count | Fiber number per tube | Number of tube / filler | Nom. Diameter(mm) | Nom. Weight(kg/km) |
|-------------|-----------------------|-------------------------|-------------------|--------------------|
| 12          | 6                     | 2/3                     | 11.4 - 12         | 100                |
| 24          | 6                     | 4/1                     | 11.4 - 12         | 100                |
| 48          | 12                    | 4/1                     | 11.8 - 12.5       | 105                |
| 60          | 12                    | 5/0                     | 11.8 - 12.5       | 105                |

## OPTICAL FIBER CHARACTERISTICS

| CATEGORY                                   | DESCRIPTION        | SPECIFICATIONS  |
|--|--------------------|---|
| <b>Optical Specifications</b>              |                    | ITU-T G.652D(SinglemodeOS2)<br>9/125 μm (OS2)<br>ITU-T G651(Multimode)<br>62.5/125 μm , 50/125 μm |
| Attenuation                                | @1310nm            | ≤0.35/≤0.33dB/km  |
|  | @1383nm            | ≤0.35/≤0.31 dB/km   |
|  | @1490nm            | ≤0.24db/km  |
|  | @1550nm            | ≤0.21/≤0.19dB/km  |
|  | @1625nm            | ≤0.23/≤0.20dB/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 <sup>2</sup> .km)   |
| Dispersion                                 | @1310nm            | ≤3.5 ps/nm.km   |
|  | @1550nm            | ≤18 ps/nm.km  |
| Polarization mode dispersion(PMD)          |                    | ≤0.1 ps/km <sup>1</sup> / <sub>2</sub>  |
| Cable cutoff wavelength (λ <sub>cc</sub> ) |                    | ≤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 μm  |
|  | @1550nm            | 10.4 ± 0.8 μm   |
| Cladding diameter                          |                    | 125 ± 1 μm  |
| Cladding non-circularity                   |                    | ≤1.0 %  |
| Coating Material                           | Material           | UV curable acrylate   |
|  | Diameter           | 250 ± 5μm   |
| Coating/Cladding concentricity error       |                    | ≤12 μm  |
| Core/Cladding concentricity error          |                    | ≤0.5μm  |
| Color Fiber Diameter                       |                    | 250 μm ± 15 μm (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            |              | 80 m and wind force 126 Km/hr |
| Max. Tensile load                | Installation | 4000 N. for 6-96 Cores        |
|                                  | Operation    | 1800 N. for 6-96 Cores        |
| Maximum Crush resistance         |              | 2200 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: 3000 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               | - Impact energy: 450 g  | - No splits or cracks in the outer jacket                |
| IEC 60794-1-2-E4          | - Height: 1 meter   | -Attenuation increase $\leq$ 0.10 dB (after the test)    |
| TIA/EIA-455-25C           | - Impact points: min.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 $\leq$ 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 $^\circ$ 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 ) $\leq$ 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 $^\circ$ C                                 |  |

## ORDER INFORMATION

