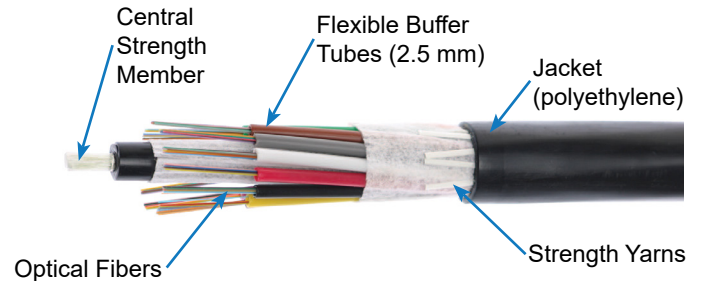
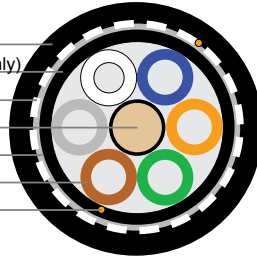


## Outdoor Cable Non-Armored

- Polyethylene Outer Jacket
- Polyethylene Inner Jacket (double jacket designs only)
- Outer Strength Members (where applicable)
- Dielectric Central Strength Member
- Water Blocking Tape
- Gel-Filled Buffer Tube Containing up to 12 Fibers
- Ripcord



## Features

### Dry Water-Blocking Technology

- Permits rapid cable preparation and termination
- Water-Blocking materials are easily removed

### Flexible Buffer Tubes

- Increased flexibility and superior kink resistance
- Facilitates route management in closures
- Eliminates need for closure transportation tubes

### Medium Density Polyethylene Jacket

- Low friction installation
- Excellent protection from environmental hazards

### Reverse Oscillated Lay Stranding Method

- Facilitates access to fibers

### All-Dielectric Construction

- No bonding or grounding required

### Performance

- Meets or exceeds the requirements of Telcordia GR-20 and ICEA 640
- Tested in accordance with the relevant EIA/TIA-455 series FOTPs for fiber optic cables
- PE-90 compliant for applications that do not require mid-span tube storage

## Specifications

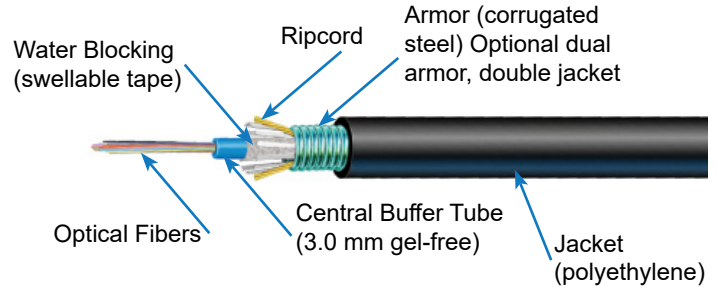
Parameter	Value
<b>Fiber Count</b>	2-24
<b>Buffer Tube OD (mm)</b>	2.65
<b>Single Jacket Cable OD (mm / in)</b>	10.8 / 0.43
<b>Single Jacket Cable Weight (kg/km / lb/kft)</b>	82 / 55
<b>Single Jacket Max Length (m / ft)</b>	12,800 / 41,984
<b>Double Jacket Cable OD (mm / in)</b>	13 / 0.51
<b>Double Jacket Cable Weight (kg/km / lb/kft)</b>	116 / 78
<b>Double Jacket Max Length (m / ft)</b>	12,800 / 41,984
<b>Dynamic Bend Radius</b>	20 x Cable OD
<b>Static Bend Radius</b>	10 x Cable OD
<b>Installation Tensile Rating (N / lbf)</b>	2700 / 600
<b>Residual Tensile Rating</b>	800 / 200
<b>Short Term / Long Term Crush Resistance (N/cm / lbf/in)</b>	220/110 / 125/63
<b>Operation Temp Rating (C)</b>	-40 to +70
<b>Storage/Shipping Temp Rating (C)</b>	-40 to +75

## Outdoor Cable

### Armored - Central Tube

Economical armored protection for lower fiber counts, ideal for multi-purpose outdoor aerial and underground use near the network edge.

Armored cable has an efficient design with a single central loose tube. A better fit and cost-effective alternative for low fiber count designs, this Central Loose Tube cable provides easy cable entry and flexible routing for multi-purpose installation of up to 12 fibers.



## Features

### Easy Cable Entry & Preparation

- Adhesive bond armor protects & improves mid-entry
- Ripcord speeds cable entry & outer jacket removal
- Proven water-blocking with dry core swellable binders

### Meets the Following Standards

- ANSI / ICEA 640, IEC 60794-3-11, RUS 7 CFR 1755 (RUS LISTED), Telcordia GR20

### Flexible Routing and Termination

- Flexible buffer tubes and strength members
- Small diameter & lightweight extends installation lengths

### Temperature Rating

- Installation: -22 to +140 °F (-30 to +60 °C)
- Operation: -40 to +158 °F (-40 to +70 °C)

## Cable Specifications

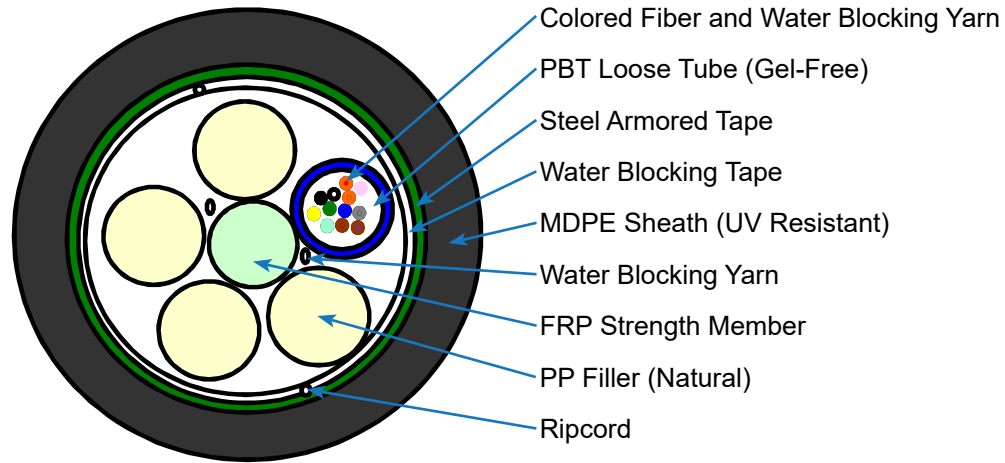
Tube Construction	Fiber Count	Diameter inches (mm)	Cable Weight lb/kft (kg/km)	Bend Radius Load inches (cm)	Bend Radius No Load inches (cm)	Maximum Installation Load
Gel-Free	2 to 12	0.38 (9.7)	63 (94)	8 (20)	6 (15)	600 lbf (2670 N)

## Fiber Information

Fiber Type	Wavelength (nm)	Attenuation (dB/km)	Bandwidth (MHz km)	1 GbE Distance (meters)	10 GbE Distance (meters)
Singlemode	1310 / 1383 / 1550	0.35 / 0.35 / 0.25	N/A	N/A	N/A
Singlemode Bend Insensitive	1310 / 1383 / 1550	0.35 / 0.35 / 0.25	N/A	N/A	N/A
Multimode (62.5µm)	850/1300	3.5/1.0	200/500	300/550	33
Multimode (50µm)	850/1300	3.0/1.0	700/500	800/550	150
Multimode OM3 (50µm)	850/1300	3.0/1.0	1500/500	1000/550	300
Multimode OM4 (50µm)	850/1300	3.0/1.0	3500/500	1100/550	550

## Outdoor Cable

### Armored - 12 Fiber Loose Tube



## Specifications

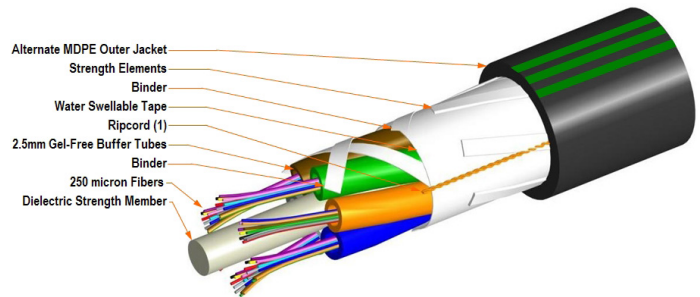
Parameter	Specification
<b>Attenuation (G657A1) @ 1310 nm</b>	≤ 0.36 dB/km
<b>Attenuation (G657A1) @ 1550 nm</b>	≤ 0.22 dB/km
<b>Long Term Tensile Strength (IEC60794-1)</b>	300 N
<b>Short Term Tensile Strength (IEC60794-1)</b>	1000 N
<b>Long Term Crush Resistance (IEC60794-1)</b>	300 N/100mm
<b>Short Term Crush Resistance (IEC60794-1)</b>	1000 N/100mm
<b>Fiber Color</b>	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Pink, Aqua
<b>PBT Tube Color</b>	Blue
<b>Ripcord Count</b>	2
<b>Operating Temperature</b>	-40C to +70C
<b>Storage Temperature</b>	-40C to +70C
<b>Static Bending Radius</b>	10×Diameter
<b>Dynamic Bending Radius</b>	20×Diameter
<b>Cable Diameter</b>	12.0 mm
<b>Cable Weight</b>	125 kg/km
<b>Sheath Thickness</b>	1.5 mm

## Outdoor Cable

### Non-Armored Alternative Jacket

Non-Armored Alternative Jacket is a patented polymer blend that utilizes non-toxic, non-harmful, and environmentally friendly food-grade additives to deter squirrels from chewing on the jacket. The material is intended to make the act of cutting their teeth back on cable an unpleasant experience through the combination of taste and sensation.

System operators have traditionally installed a protective barrier such as squirrel guard around the aerial plant or endured the expense of moving the plant underground. Both repairing the damage and the traditional methods of preventing the damage are costly and consume man hours. To reduce the cost of protection and decrease repairs utilize Non-Armored Alternative Jacket cable.



## Overview

Non-Armored Alternative Jacket cable is suitable for direct buried, aerial and conduit applications. The construction features the use of dry water blocking elements and reduced diameter buffer tubes, yielding a light weight, smaller cable. The result is a fiber optic cable that is an ideal transmission medium for the outside plant environment.

The fiber and buffer tubes are color coded for easy identification. The all dry cable construction removes the need for filling gels and flooding compounds from the cable. This significantly reduces cable preparation time and eliminates the need for solvents and other consumables during cable preparation. These cables are designed to improve the cleanliness of the work environment and provide full water blocking protection for outside plant applications.

## Features

- Robust cable design
- Complies with applicable standards
- Provides very stable low temperature performance
- Cable withstands typical installation forces with a good safety margin
- Reduces installation loads due to the reduced weight and diameter
- Provides performance equivalent to gel-filled cable designs
- Improves network deployment speed for capturing revenues and starting services sooner

## Standards/Compliance/Certifications

ANSI/ICEA S-87-640-2006  
EN 187105  
Telcordia GR-20-CORE Issue 3  
RoHS 2011/65/EU  
ISO 9001:2008

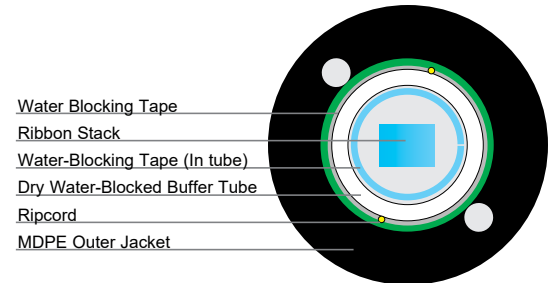
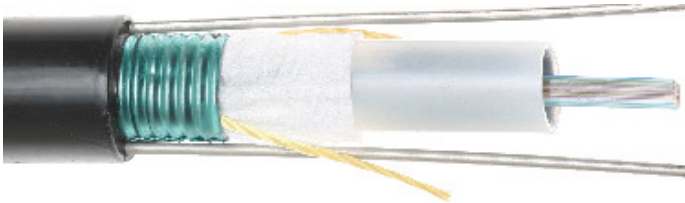


## Outdoor Cable

### Non-Armored Alternative Jacket

Parameter	Value
<b>Cable Type</b>	Stranded loose tube
<b>Construction Type</b>	Non-armored
<b>Subunit Type</b>	Gel-free
<b>Jacket</b>	Black Alternative jacket PE - UV Stabilized
<b>Buffer Tube/Subunit Diameter</b>	2.50 mm   0.10 in
<b>Cable Weight</b>	66.0 kg/km   45.0 lb/kft
<b>Diameter Over Jacket</b>	10.10 mm   0.40 in
<b>Minimum Bend Radius, loaded</b>	15.2 cm   6.0 in
<b>Minimum Bend Radius, unloaded</b>	10.1 cm   4.0 in
<b>Tensile Load, long term, maximum</b>	800 N   180 lbf
<b>Tensile Load, short term, maximum</b>	2700 N   607 lbf
<b>Tensile Load Test Method</b>	FOTP-33   IEC 60794-1-2, Section 5
<b>Vertical Rise, maximum</b>	1234.0 m   4048.0 ft
<b>Environmental Space</b>	Aerial, lashed   Buried
<b>Installation Temperature</b>	-30 °C to +70 °C (-22 °F to +158 °F)
<b>Operating Temperature</b>	-40 °C to +70 °C (-40 °F to +158 °F)
<b>Storage Temperature</b>	-40 °C to +75 °C (-40 °F to +167 °F)
<b>Compression</b>	22 N/mm   125 lb/in
<b>Compression Test Method</b>	FOTP-41   IEC 60794-1-2, Section 7
<b>Flex</b>	35 cycles
<b>Flex Test Method</b>	FOTP-24   IEC 60794-1-2, Section 10
<b>Impact</b>	2.94 N-m   2.17 ft lb
<b>Impact Test Method</b>	FOTP-25   IEC 60794-1-2, Section 8
<b>Twist</b>	10 cycles
<b>Twist Test Method</b>	FOTP-85   IEC 60794-1-2, Section 11
<b>Water Penetration</b>	24 h
<b>Water Penetration Test Method</b>	FOTP-82   IEC 60794-1-2, Section 24
<b>Cable Freeze</b>	-2 °C   28 °F
<b>Cable Freeze Test Method</b>	FOTP-98
<b>Heat Age</b>	-40 °C to +85 °C (-40 °F to +185 °F)
<b>Low High Bend</b>	-30 °C to +60 °C (-22 °F to +140 °F)
<b>Low High Bend Test Method</b>	FOTP-28   IEC 60794-1-2, Section 28
<b>Temperature Cycle</b>	-40 °C to +70 °C (-40 °F to +158 °F)
<b>Temperature Cycle Test Method</b>	FOTP-3   IEC 60794-1-2, Section 22

## Outdoor Cable Ribbon Armored Central Tube



### Features

#### Compact Design

- Efficient packaging of fiber
- Lightweight and easy to handle during installation

#### Easily Removable Ribbon Matrix

- Allows for ease of stripping and fiber breakout
- Improves mid-span strippability

#### Precision Ribbon Geometry

- Time and labor savings during fiber splicing

#### Flexible Buffer Tube

- Superior kink resistance
- Increased flexibility
- Facilitates route management in closures

#### Dry Water-Blocking Technology

- Buffer tube and core are completely dry—no gel
- Permits rapid cable preparation and termination
- Water-blocking materials are easily removed

#### Corrugated Steel Armor

- Provides additional mechanical protection
- Special coating reduces time and effort to remove jacket

#### Performance

- Meets or exceeds the requirements of Telcordia GR-20 & ICEA 640 and is tested in accordance with relevant EIA/TIA-455 series FOTPs for fiber cables

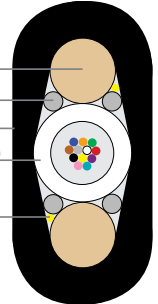
### Specifications

Parameter	Value
<b>Dynamic Bend Radius</b>	20 x Cable OD
<b>Static Bend Radius</b>	10 x Cable OD
<b>Installation Load Tensile Rating</b>	2700 N (700 lbf)
<b>Residual Load Tensile Rating</b>	800 N (180 lbf)
<b>Crush Resistance Short Term</b>	220 N/cm (125 lbf/in)
<b>Crush Resistance Long Term</b>	110 N/cm (63 lbf/in)
<b>Operating Temperature Rating</b>	-40 to +70 °C (-40 to +158 °F)
<b>Installation Temperature Rating</b>	-30 to +60 °C (-22 to +140 °F)
<b>Storage/Shipping Temperature Rating</b>	-40 to +75 °C (-40 to +167 °F)
<b>Fiber Count</b>	12-48
<b>Ribbon Count</b>	1-4
<b>Buffer Tube O.D.</b>	6.2 mm (0.24 in)
<b>Cable O.D.</b>	12.5 mm (0.50 in)
<b>Cable Weight</b>	152 kg/km (102 lbs/kft)

## Outdoor Cable Flat Drop Cable



Strength Member  
Water-Blocking Material  
MDPE Outer Jacket  
Gel-Filled Buffer Tube (up to 12 Fibers)  
Ripcord



## Features

### Easy Access Design

- Jacket can be easily opened with a knife and the included ripcords
- Buffer tube is easily separated from the jacket and strength members

### All-Dielectric Messengers

- No bonding or grounding required
- Flexible and kink resistant

### Dry Water-Blocking Technology

- Permits rapid cable preparation and termination
- Water-blocking materials are easily removed

### Versatile Design

- Small cross-section and high strength allow good aerial performance
- Can be pushed or pulled through duct
- Highly crush-resistant

### Dual Strength Member Design

- More flexible than a single, all-dielectric rod of the same strength
- Easier to handle and coil than other all-dielectric Figure-8 designs
- A great alternative where steel strength members are not permissible

### Medium Density Polyethylene Jacket

- Low friction installation
- Excellent protection from environmental hazards

### Sheath Markings

- Provides positive identification and length verification

### Performance

- RDUP listed (tested in accordance with PE-90)

## Specifications

Parameter	Value
<b>Dynamic Bend Radius</b>	150 mm (5.9")
<b>Static Bend Radius</b>	100 mm (3.9")
<b>Installation Load Tensile Rating</b>	1336 N (300 lbf)
<b>NESC Light Load District Span Rating</b>	122 mm (400")
<b>NESC Medium Load District Span Rating</b>	76 mm (250")
<b>NESC Heavy Load District Span Rating</b>	46 mm (150")
<b>Operating Temperature Rating</b>	-40 to +70 °C (-40 to +158 °F)
<b>Installation Temperature Rating</b>	-30 to +60 °C (-22 to +140 °F)
<b>Storage/Shipping Temperature Rating</b>	-40 to +75 °C (-40 to +167 °F)
<b>Buffer Tube O.D.</b>	2.8 mm (0.11 in)
<b>Cable Thickness</b>	5.0 mm (0.20 in)
<b>Cable Width</b>	8.5 mm (0.33 in)
<b>Cable Weight</b>	39 kg/km (26 lbs/kft)
<b>Max. Cable Length</b>	25,000 m (82,000 ft)