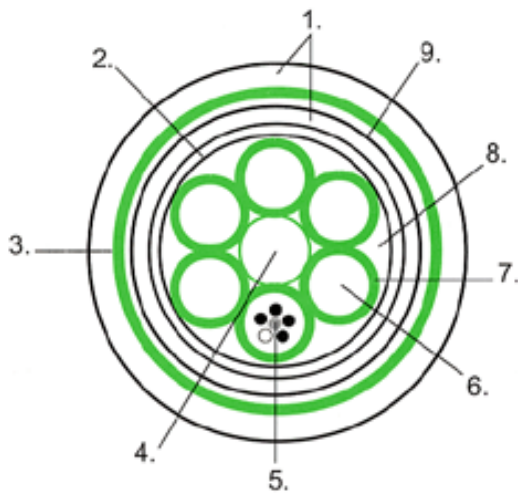


## DIRECT BURIED OPTICAL FIBER CABEL SIGNLE MODE AND MULTIMODE

### 1.Applications:

- This type of cable is generally buried underneath the ground
- Used for long haul communication system.
- Local area network system.
- If required, provides protection from rodent hazard.

### 2. CABLE CROSS SECTION



1. PE sheath
2. Binding Tape
3. Corrugated Steel tape
4. Fiber reinforced Plastic
5. Optical Fiber
6. Jelly Filling
7. PBTP Loose Tube
8. Jelly Filling
9. Water Blocking Tape

### 3. CABLE MATERIAL SPECIFICATION AND CONSTRUCATION

CABLE MATERIAL SPECIFICATION AND CONSTRUCATION	
Central Strength Member	Fiber Reinforced Plastic Rod.
Loose tubes	Polybutylene Therephthalate and Masterbatch The loose tubes are filled with Thixotropic gel together with between 1-12 fibers per tube.
Filler Rods	Polyethylene
Stranding	The SZ stranding method is used to strand the required number of fiber filled loose tubes, filler rods and central strength member that are then binder together.
Flooding Gel	The cable core interstices are flooded with petroleum Jelly
Core Wrap	Polyethylene Coated NON-Woven Lint Free Cloth and Polyester Thread.
Inner Sheath	Black Polyethylene.
Water Blocking Tape	Top Swell Non-Conductive Tape applied Longitudinally to prevent water migration within inner sheath and corrugated steel tape.

**CONTINUED**

Armoring	Electrolytic Chromed Coated Steel Tape corrugated over cable core to provide rodent and corrosion protection.
Rip Cord	Polyaramid ripcord is placed before the Sheath.
Outer Sheath	Black Polyethylene will be applied over the corrugated steel tape.

**4. IDENTIFICATION OF OPTICAL FIBER AND LOOSE TUBE**

Number	Fiber	Tube
1	Blue	Blue
2	Yellow	Yellow
3	Green	Green
4	Red	Red
5	Violet	Violet
6	Brown	Brown
7	Natural / White	White
8	Orange	Orange
9	Pink	-
10	Black	-
11	Grey	-
12	Aqua	-

**5. OPTICAL FIBER CHARACTERISTICS IN CABLE**

PARAMETER	VALUE	
-	9/125 $\mu\text{m}$	50 or 62.5/125 $\mu\text{m}$
Type of Fiber	Non-Dispersion Shifted Single Mode Optical Fiber-Step Index	Non-Dispersion Shifted Multi mode Optical Fiber-Graded Index
Fiber Core	$\text{GeCl}_4 + \text{SiCl}_4$	$\text{GeCl}_4 + \text{SiCl}_4$
Fiber Cladding	$\text{SiCl}_4$	$\text{SiCl}_4$
Core Diameter	$8 \pm 1.0 \mu\text{m}$	$50 \pm 3.0 \mu\text{m}$ $62.5 \pm 3.0 \mu\text{m}$
Cladding Diameter	$125 \pm 1 \mu\text{m}$	$125 \pm 2 \mu\text{m}$
Numerical Aperture	$0.12 \pm 0.01$	$0.269 \pm 0.15$
Bandwidth	Not Application	50/125 $\mu\text{m}$ 850 nm: $\geq 400 \text{ MHz/KM}$ 1300 nm: 800 MHz/KM 62.5/125 $\mu\text{m}$ 850 nm: $\geq 200 \text{ MHz/KM}$ 1300 nm: $\geq 600 \text{ MHz/KM}$
Average Attenuation	1310 nm: $\leq 0.35 \text{ dB/KM}$ 1550 nm: $\leq 0.25 \text{ dB/KM}$	850 nm : $\leq 3.0 \text{ dB/KM}$ 1300 nm: $\leq 1.0 \text{ dB/KM}$

Maximum Attenuation	1310 nm: $\leq$ 0.40 dB/KM 1550 nm: $\leq$ 0.30 dB/KM	850 nm : $\leq$ 3.5 dB/KM 1300 nm: $\leq$ 1.2 db/KM
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## 6. MECHANICAL CHARACTERISTICS OF CABLE

ITEMS	STANDARDS	PARAMETER	SPECIFICATION
TENSILE STRENGTH	IEC 794-E1	Load	2500-3000N
		Sample length	150 meters
		Loops	3
CRUSH RESISTANCE	IEC 794-E3	Load	3000N
		Sample length	1 meter
		Plate diameter	100 mm
TORSION ANGLE	IEC 791-E7	Turing angle	$\pm$ 180°/2 meters
		No.of cycles	10
		Weight	10 kgs
REPEATED BENDING	IEC 794-E6	Bending radius	100 mm
		Bending angle/Load	$\pm$ 90°/10 kg
		No. of turns	5 ( 0.2 cycle/sec)
WATER PENETRATION	IEC794-1-F1	Water pressure	1 meter column
		Sample length/Exposed	3 meters/25 mm
		Test period/Environment	24 hours/20°C
IMPACT STRENGTH	IEC 794-E4	Impact height	540 mm
		No. of impacts	3
		Radius of impact	20 mm
		Load	3.75 kgs

## 7. ENVIRONMENTAL CONDITIONS OF CABLE

### Temperature Range:

Operating	-20°C~+70°C
Installation	-20°C~+70°C
Storage	-20°C~+80°C

### Humidity Range:

Operating	0-100% non-condensing
Installation	0-100% non-condensing

## 8. CABLE IDENTIFICATION

- Length Marking:  
Length marking will be hot foiled printed onto the cable surface of intervals of 1 meter and printing will either be white or yellow referring to specifications provided.
- Marking:  
Outer sheath will be marked "HOLD KEY", XXC SM, Year of manufacture. The marking can be changed subject to customer's requirements.

## 9. PACKING

The cable will be wound onto a chemically treated wooden drum. Both ends of the cable will be shrink-capped.