



### Fire Resistant Central Loose Tube Fiber Optic Cables

#### APPLICATION

These cables are characterized by light weight and small diameter, suitable for both aerial and duct installation. They are mainly installed inside buildings, tunnels, subways or closed areas in general, specially designed to guarantee the signal transmission even in case of fire. The cable can also be used for direct burial for armoured version.

#### STANDARDS

Basic design to Telcordia GR-20 / RUS 7 CFR 1755.900 (REA PE-90) / ICEA S 87-640

#### FIRE PERFORMANCE

Circuit Integrity	IEC 60331-25
Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic Gases	NES 02-713; NF C 20-454
Oxygen Index	Min. 35%
Temperature Index	Min. 280°C

Note: Asterisk \* denotes superseded standard.

#### CABLE CONSTRUCTION

**Fibers:** Single mode fibers, with loose tube technology.

**Structure:** Central loose tube cable contains one tube with 12 core single mode fibers, which are filled with water blocking gel.

**Fire barrier:** The jelly filled tube is wrapped with a fire barrier mica glass tapes.

**Water blocking:** The jelly filled tube is waterblocked by using swellable tape and thread.

**Reinforcement:** Fiber glass is wound around the tube to provide physical protection and tensile strength, with added fire protection.

**Armouring(optional):** Corrugated steel tape armour is applied over cable core.

The 0.15mm thick steel tape is coated with a copolymer and applied with an overlap.

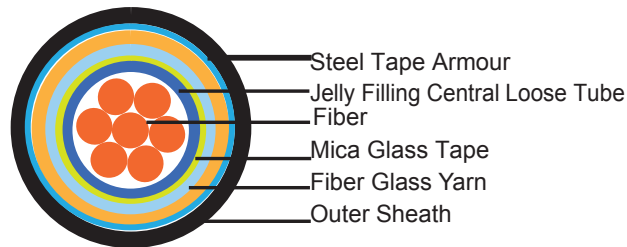
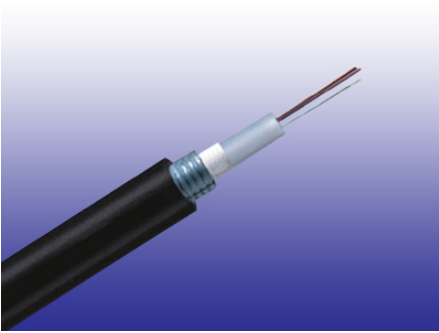
**Outer Sheath:** Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1

## FIBER COLOUR CODE

Fiber colour code	1	Red	7	Brown
	2	Green	8	Violet
	3	Blue	9	Turquoise
	4	Yellow	10	Black
	5	White	11	Orange
	6	Grey	12	Pink

## CONSTRUCTION

### Corrugated Steel Tape Armour



## CONSTRUCTION PARAMETERS

Fiber Count	Nominal Overall Diameter	Approx. Weight	Tension load	Crush
No.	mm	kg/km	N	N/100mm
12	10.5	116	500	1000

## PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +70°C

Temperature range during storage: -50°C - +70°C

Minimum bending radius: 20 x Overall Diameter

## MECHANICAL PROPERTIES

Repeated Impact:	2.0 N.m (J)
Twist (Torsion):	180×10 times, 125×OD
Cyclic Flexing:	25 cycles for armoured cables; 100 cycles for unarmoured cables.
Crush Resistance:	263N/cm (150lb/in)



### FIBER COMPLIANCE

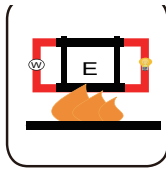
Temperature Cycling	IEC60794-1-2-F2
Tensile Strength	IEC60794-1-2-E1A
Crush	IEC60794-1-2-E3
Impact	IEC60794-1-2-E4
Repeated Bending	IEC60794-1-2-E6
Torsion	IEC60794-1-2-E7
Kink	IEC60794-1-2-E10
Cable Bend	IEC60794-1-2-E11
Cool Bend	IEC60794-1-2-E11



Standard



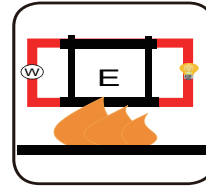
Standard



IEC 60331/BS 6387  
NF C32-070-2.3(CR1)  
Circuit Integrity



NF C32-070-2.1(C2)  
IEC60332-1-2/EN50265-2-1  
Flame Retardancy



DIN 4102-12  
Functional Integrity



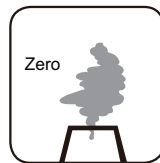
NES 02-713/NF C 20-454  
Low Toxicity



IEC60754-2  
EN50267-2-2/3  
NF C 32-074  
Low Corrosivity



IEC 61034-1&2  
EN 50268-1&2/NF C32-07  
Low Smoke Emission



Zero  
Halogen Free  
IEC60754-1  
EN50267-2-1