



**TECHNICAL DATA SHEET**  
**SECTION 1**  
**CABLE CONSTRUCTION**  
**GYFTSXX-MM**

**MULTI LOOSE TUBE, SINGLE SHEATH, STEEL METALLIC ARMORED**

- Underground Cable type with Corrugated Steel Tape as armouring
- Direct Buried installation into ground
- Installation by ploughing or laying into ditch
- Also suitable for pulling into ducts.
- Special High Density Black PE provides excellent resistance during installation and protection against external effects.
- Generally preferred as underground backbone cable for Wide Area Telecom Networks

<b>Characteristics</b>	
Fibre optic type	MM: ITU-T G.651(OM1/62.5/125)
Central strength member - Material - Diameter	- Reinforced Glass Fibre - 2.2 mm
Loose tubes - Material - Outer Diameter - Type of filling compound	- Polybuteneterepheteleta (PBT) - 2.05 mm nominal - Thixotropic jelly
Tube assembly - Tube layout - Stranding type	- Tubes stranded around central strength member symmetrically - Tubes stranded with SZ stranding method
Flooding compound - Material	- Petroleum Jelly
Core wrapping	- Polyester Tape
Dielectric Tensile Strength Member	- Glass Yarn
Armoring - Material - Thickness	- Copolymer Coated Corrugated Steel Tape - 0.155±0.015 mm
Rip Cords	Rip cords applied longitudinally to open cable easily
Outer Sheath - Material - Thickness	- Black HDPE UV resistant - 1.5 mm nominal
Cable Marking	Black hot stamping
Drum Length	2000/4000 meters ± 5 %
Identification	<Length meter>< Name of the Manufacturer>< Type of cable>< Number of optical fibers>

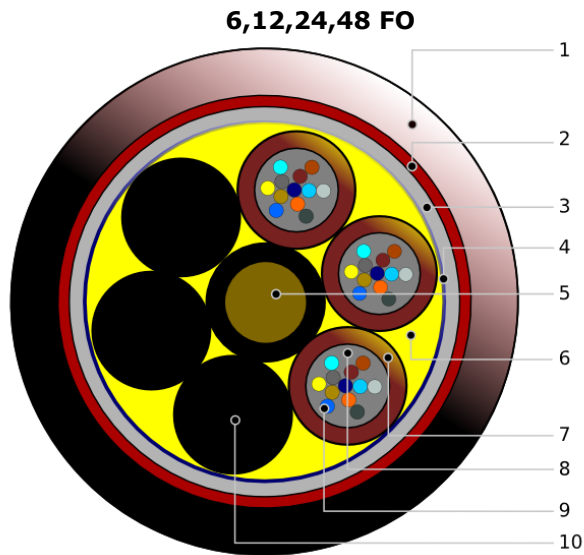
<b>Mechanical Characteristics</b>			
<b>Test</b>	<b>Reference Standard</b>	<b>Specified Value</b>	<b>Acceptance Criteria</b>
Tensile Strength -Installation	IEC 60794-1-2-E1(A-B)	≥1500 N	$\Delta\alpha \leq 0.05$ dB/km
Bending Under Tension	IEC 60794-1-2-E18	3000N; 10 cycles	$\Delta\alpha \leq 0.05$ dB/km
Repeated Bending	IEC 60794-1-2-E6	200mm; 100N; 35 cycles; 2s	$\Delta\alpha \leq 0.05$ dB, no damage
Crush	IEC 60794-1-2-E3	2200 N /100 mm (15min.)	$\Delta\alpha \leq 0.05$ dB, no damage
Impact	IEC 60794-1-2-E4	D=300 mm, 3 impacts, R= 50 mm, 30 Joule hammer impact energy	No sheath damage; No permanent change in attenuation.
Torsion	IEC 60794-1-2-E7	100N, +/- 1, 1000mm, 5 cycles	$\Delta\alpha \leq 0.10$ dB, no damage
Kink	IEC 60794-1-2-E10	300 mm loop, T=20°C	No kink shall occur
Cable Bend	IEC 60794-1-2-E11 (A)	R=600 mm, 5 turns, 3 cycles, T=-15°C	$\Delta\alpha \leq 0.05$ dB, no damage
Temperature Cycling	IEC 60794-1-2-F1	-40°C to +70°C	Max.0.10 dB/km
Ageing	IEC 60794-1-2-E5	Accelerated aging test	Stripping force stability
Water Penetration	IEC 60794-1-2-F5B	Sample=3m, Water column=1m	No water leakage in 24h

<b>Fiber Count</b>	<b>Buffer Count</b>	<b>Filler Count</b>	<b>Cable Diameter nominal (mm)</b>	<b>Cable Weight (kg/km)</b>
6,12,24,48			11.2	100

**TECHNICAL DATA SHEET  
SECTION 2  
OPTICAL CABLE CHARACTERISTIC**

<b>Property</b>	<b>Value</b>
Attenuation @ 850 nm maximum	3.2 dB/Km
Attenuation @ 1300 nm maximum	1.0 dB/Km

**TECHNICAL DATA SHEET  
SECTION 3  
TECHNICAL DRAWING**



1. Outer Sheath
2. Corrugated Steel Tape
3. Glass Yarn
4. Core Wrapping
5. Central Strength Member
6. Petroleum Jelly
7. Buffer Material (PBT)
8. Thixotropic Jelly
9. 6,12,24,48 Fibers per Cable
10. PE Fillers

## OPTICAL FIBER and TUBE COLORS

Tube Color Scheme	
Tube No.	Color
1	Red
2	Yellow
3	Green

Fiber Color Scheme	
Fiber No.	Color
1	Red
2	Yellow

*Notes:*

- 1) Different color coding available on request.*
- 2) Number of tubes per cable and number of fibers per tube depend on cable design.*

**TECHNICAL DATA SHEET**  
**SECTION 4**  
**OPTICAL FIBER CORE SPECIFICATIONS**  
**62.5/125/242 μm Multimode Fiber**  
**Standard ITU-T G.651 (OM1)**  
(Uncoloured Fibre)

<b>Geometrical Characteristics</b>		
Core diameter	62.5±2 μm	
Core non-circularity	≤5%	
Core/Cladding concentricity error	≤ 1 μm	
Cladding diameter	125.0 ± 1.0 μm	
Cladding non-circularity	≤ 0.7 %	
Coating/Cladding concentricity error	≤5 μm	
Primary coating material - Diameter	UV curable acrylate 242 ± 5 μm (Uncoloured)	
<b>Optical Characteristics</b>		
Attenuation	at 850 nm	≤ 2.8 dB/km
	at 1300 nm	≤ 0.7 dB/km
Overfilled Modal Bandwidth	at 850 nm	≥300 MHz.km
	at 1300 nm	≥1000 MHz.km
Point discontinuity at 850 and at 1300 nm	≤ 0.1 dB	
Numerical Aperture (NA)	0.275 ± 0.015	
Zero dispersion wavelength λ <sub>0</sub>	1320 nm ≤λ <sub>0</sub> ≤ 1365 nm	
Zero dispersion slope, S <sub>0</sub>	1295 nm≤λ <sub>0</sub> ≤1310 nm	≤0.11 ps/nm <sup>2</sup> x km
	1310 nm≤λ <sub>0</sub> ≤1340 nm	≤0.001ps/nm <sup>2</sup> x km
<b>Mechanical Characteristics</b>		
Proof test (off line)	>100 kpsi (0.7 GPa)	
<b>Bending Loss</b>		
• 100 turn on 75 mm diameter 850 nm	≤ 0.5 dB	
• 100 turn on 75 mm diameter 1300 nm	≤ 0.5 dB	
Coating strip force (F)	1.3 N ≤ F ≤ 8.9 N (Peak value)	
	1.0 N ≤ F ≤ 3.0 N (Average value)	
Dynamic tensile strength (0.5 meter gauge length)	>550 kpsi (3.8 GPa)	
Dynamic fatigue (n <sub>d</sub> )	Aged	
	25 (typical value)	
• -60°C ~ +85°C Temperature Cycling	≤ 0.1 dB/km	
• -10°C ~ +85°C/up to 98% RH Dump Heat Cycling	≤ 0.1 dB/km	
• +85°C ± 2°C Dry Heat	≤ 0.1 dB/km	
• +23°C ± 2°C Water Immersion	≤ 0.1 dB/km	
<b>Performance Characteristics</b>		
Group index of refraction typical	1.496@850nm	
	1.491@1300nm	

NOTE: Unless otherwise verified using measurement method according to international standard such like ITU-T G.650