

No.	REVISION	DATE
1	V0	20/05/2024
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# Specification

FOR  
Non-Metallic Fiber Optic  
Duct Cables  
[GYFTY]

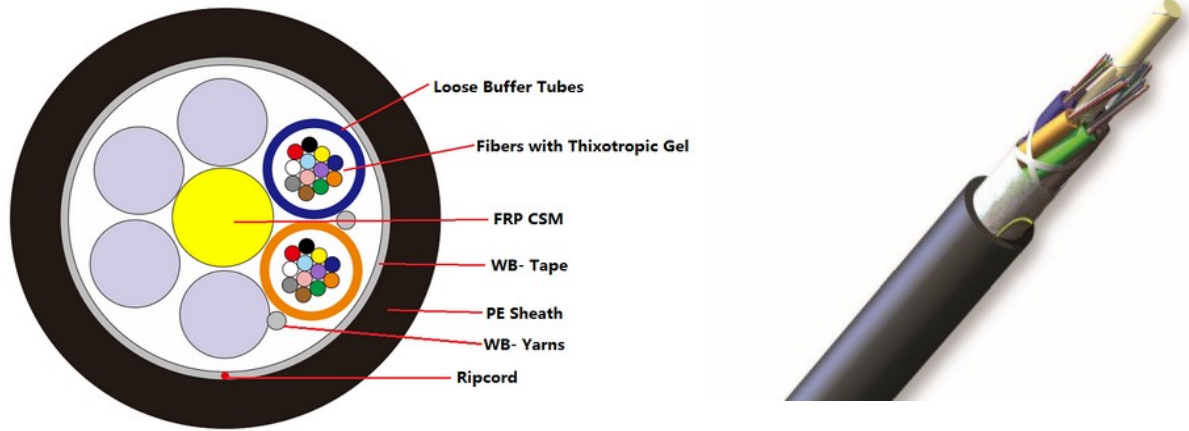
Canal autorizado:

**Unicor s.a.**

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## 1. CABLE CONSTRUCTION

### 1.1 CROSS SECTIONAL DIAGRAM



### 1.2 TECHNICAL SPECIFICATION

<b>Fiber count</b>		<b>2~30</b>	<b>32~36</b>	<b>38~60</b>	<b>62~72</b>	<b>74~84</b>
Loose Tube	OD(mm)	1.8 <sup>±0.1</sup>	1.8 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>
	Material	PBT				
Max fiber count/tube		6	6	12	12	12
Core unit		6	6	6	6	7
FRP/Coating(mm)		1.8	1.8	2.0	2.0	2.0/2.7
Water Blocking Material		water-blocking tape/water-blocking yarn				
Sheath	Thickness	Non. 1.5mm				
	Material	HDPE				
OD of cable (mm)		8.8 <sup>±0.2</sup>	8.8 <sup>±0.2</sup>	9.4 <sup>±0.2</sup>	9.4 <sup>±0.2</sup>	10.1 <sup>±0.2</sup>
Net weight (kg/km)		64	63	65	69	79
<b>Fiber count</b>		<b>86~96</b>	<b>98~108</b>	<b>110~120</b>	<b>144</b>	<b>288</b>
Loose Tube	OD(mm)	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>	2.0 <sup>±0.1</sup>
	Material	PBT				
Max fiber count/tube		12	12	12	12	12
Core unit		8	9	10	12	24
FRP/Coating(mm)		2.5/3.4	2.5/3.4	3.0/4.7	3.0/5.8	3.0/4.0
Water Blocking Material		water-blocking tape/water-blocking yarn				
Sheath	Thickness	Non. 1.5mm				
	Material	HDPE				

OD of cable (mm)	10.8±0.2	11.4±0.2	12.1±0.2	13.4±0.2 2	15.3±0.2
Net weight (kg/km)	92	102	116	128	162

## 2. FIBER AND LOOSE BUFFER TUBE IDENTIFICATION

NO.	1	2	3	4	5	6	7	8	9	10	11	12
Tube Color	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Pink	Aqua
NO.	1	2	3	4	5	6	7	8	9	10	11	12
Fiber Color	Blue	Orange	Green	Brown	Slate	White/ natural	Red	Black	Yellow	Violet	Pink	Aqua

eg: 1: For the tubes more than 12 colors will be same color code but with strip on the tube;

2: For the fibers more than 12 colors in one tube will be same color code but with dots on fiber ;

## 3.OPTICAL FIBER

### 3.1 Single Mode Fiber

LTEMS	UNITS	SPECIFICATION
Fiber type		G652D
Attenuation	dB/km	1310nm ≤ 0.33 1383nm ≤ 0.30 1490nm ≤ 0.23 1550nm ≤ 0.20 1625nm ≤ 0.21
Chromatic Dispersion	ps/nm.km	1310nm ≤ 3.5 1550nm ≤ 18 1625nm ≤ 22
Zero Dispersion Slope	ps/nm <sup>2</sup> .km	≤ 0.092
Zero Dispersion Wavelength	nm	1300 ~ 1324
Cut-off Wavelength (λ <sub>cc</sub> )	nm	≤ 1260
Attenuation vs. Bending	dB	( 30mm radius,100ring ) ≤ 0.1 @ 1625nm
Mode Field Diameter	μm	9.2 ± 0.4 at 1310nm
Core-Clad Concentricity	μm	≤ 0.5
Cladding Diameter	μm	125±1
Cladding Non-circularity	%	≤ 0.8
Coating Diameter	μm	245±5

Proof Test	Gpa	≥ 0.69
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#### 4.Mechanical and Environmental Performance of the Cable

NO.	ITEMS	TEST METHOD	ACCEPTANCE CRITERIA
1	Tensile Loading Test	#Test method:IEC 60794-1-E1 -. Long-tensile load: 1000N -. Short-tensile load: 2700N -. Cable length: ≥50m	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage -. Fiber Strain ≤0.33%
2	Crush Resistance Test	#Test method: IEC 60794-1-E3 -.Long load: 300N/100mm -.Short load: 2000N/100mm Load time:1 minutes	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage
3	Impact Resistance Test	#Test method:IEC 60794-1-E4 -.Impact height: 1m -.Impact weigh: 450g -.Impact point: ≥5 -.Impact frequency: ≥3/point	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage
4	Repeated Bending	#Test method:IEC 60794-1-E6 -.Mandrel diameter: 20D (D = cable diameter) -.Subject weight: 15kg -.Bending frequency: 30 times -.Bending speed: 2s/time	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage
5	Torsion Test	#Test method:IEC 60794-1-E7 -.Length: 1m -.Subject weight: 25kg -.Angle: ±180 degree -.Frequency: ≥10/point	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage
6	Water Penetration Test	#Test method: IEC 60794-1-F5B -.Height of pressure head: 1m -.Length of specimen: 3m -.Test time: 24 hours	-. No leakage through the open cable end
7	Temperature Cycling Test	#Test method:IEC 60794-1-F1 -.Temperature steps: +20°C、—40°C、+70°C、+20°C -.Testing Time: 24 hours/step -.Cycle index: 2	-. Attenuation increment@1550nm:≤0.1dB -. No jacket cracking and fiber breakage
8	Drop Performance	#Test method:IEC 60794-1-E14 -.Testing length: 30cm -.Temperature range: 70±2°C -.Testing Time: 24 hours	-. No filling compound drop out

9	Temperature	Operating: -40°C~+60°C Store/Transport : -50°C~+70°C Installation -20°C~+60°C
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## 5. FIBER OPTIC CABLE BENDING RADIUS

Static bending:  $\geq 10$  times than cable out diameter

Dynamic bending:  $\geq 20$  times than cable out diameter.

## 6. PACKAGE AND MARK

### 6.1 PACKAGE

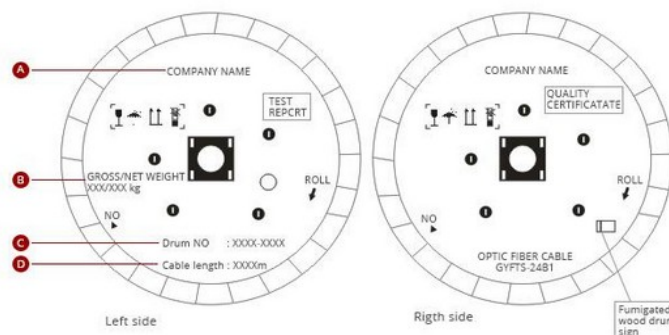
Not allowed two length units of cable in one drum, two ends should be sealed,. Two ends should be packed inside drum, reserve length of cable not less than 3 meters.

### 6.2 MARK

Cable Mark: length, brand

Drum Mark: Manufacturer, cable category, No. of drum, length, GW. direction of rotation, manufacturing date.

Mark



Usually we only attach Test Report on the out package of the cable, but we could also mark as your requirements, such as:

1. Company Name
2. Cross / Net weight
3. Drum No: XX
4. Cable Length : XX

## 7. TEST REPORT

Test report and certification supplied.

-The end of Specification-