



# SPECIFICATION

## Optical Fiber Cable (GYFY)

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## **1. Product description**

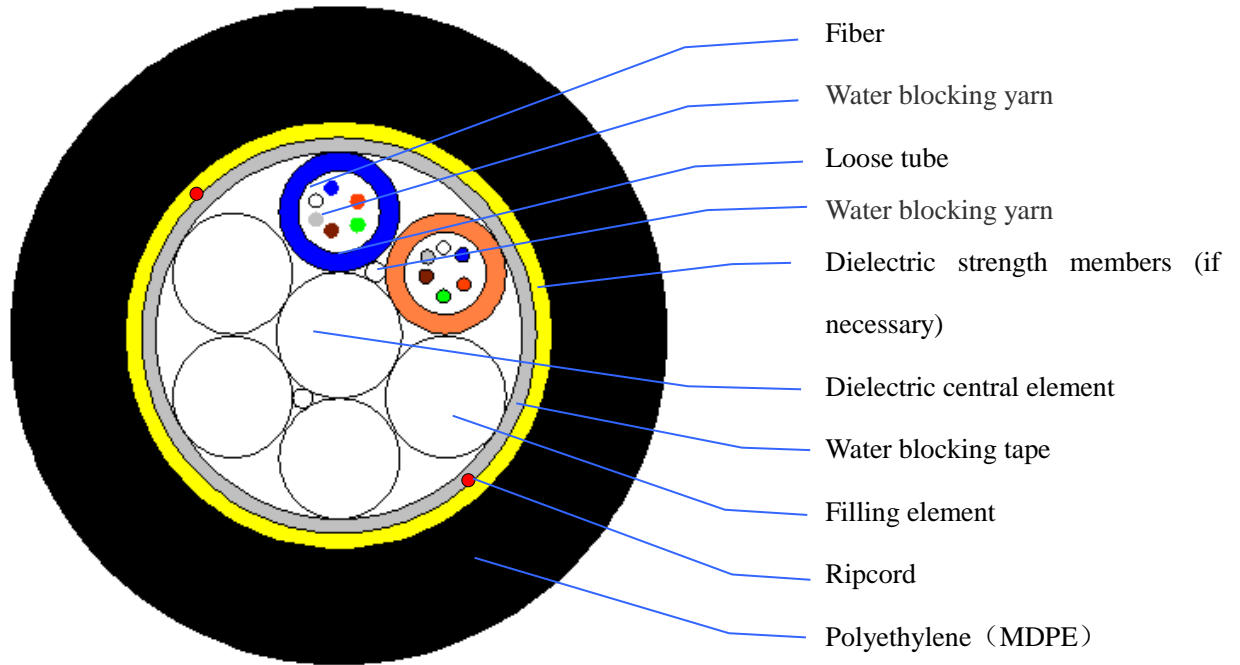
GYFY is all dielectric, gel-free cable for aerial and duct. GYFY is from 2-count to 288-count suitable for a variety of system configurations. The loose tube is made of PBT, freeing the fiber from environmental hazards to ensure a high transmission reliability and quality. Gel-free indicates there are water-blocking yarns in the loose tubes and water-blocking tape under the armored layer, meaning no mess or cleanup. In addition, all dielectric cable contains no metal; therefore, no grounding is required. The jacket is rugged and durable medium density polyethylene.

## **2. Features and Benefits**

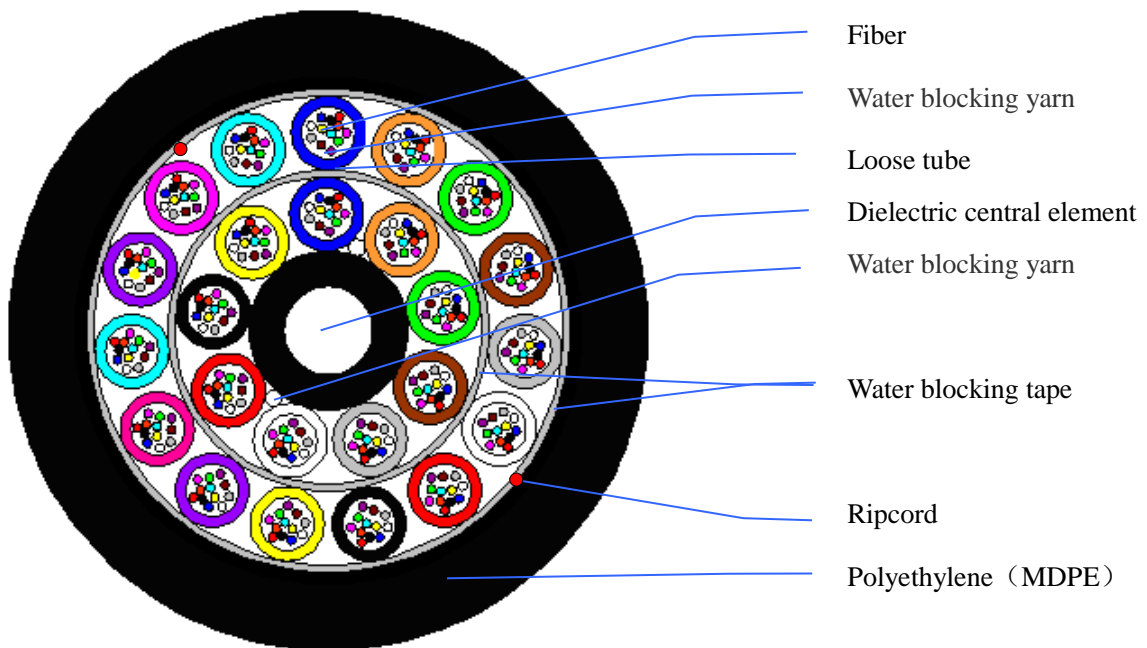
- 2.1 High transmission reliability and quality
- 2.2 Gel-free: no mess or cleanup
- 2.3 All dielectric: grounding is not required
- 2.4 Medium density polyethylene jacket: rugged and durable

### 3 Optical Fiber Cable

#### 3.1 Cross section

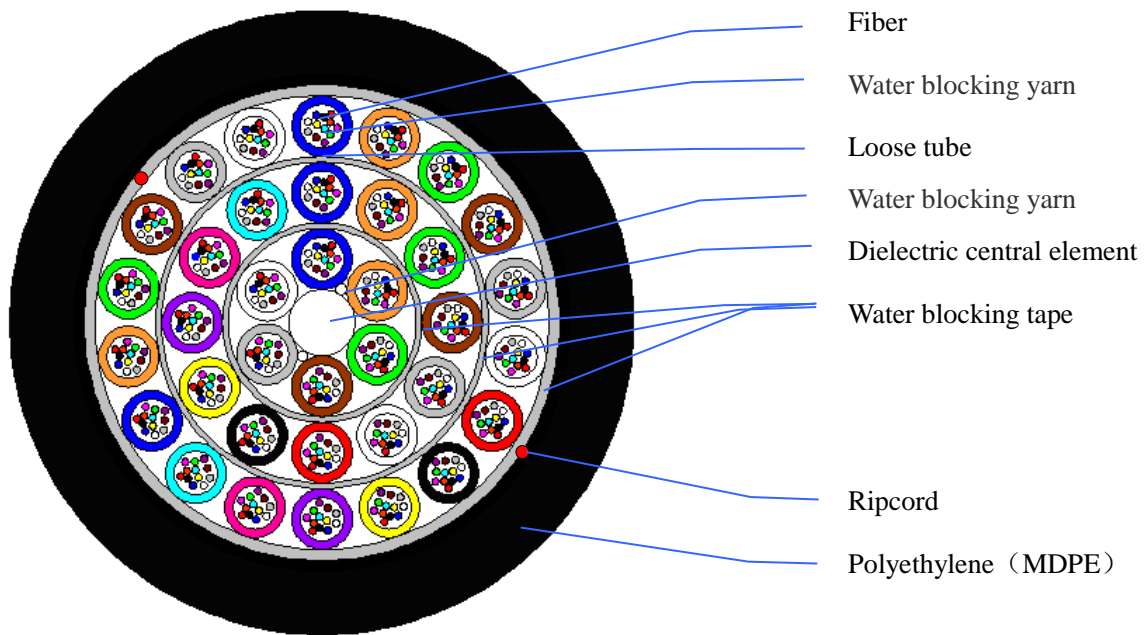


( 12core )



( 288core )

SPEC.No: 2016081922



( 432core )

### 3.2 Dimension of the cable

Amount of fiber	Max. numb. of the fiber per tube	Number of Tube Positions	Number of Active Tubes	Diameter (Appr.)	Weight (Appr.)
				mm	Kg/km
2-36	12	6	1-6	10.3	88
38-72	12	6	4-6	11.3	106
74-96	12	8	7-8	12.9	141
96-120	12	10	9-10	14.1	168
122-144	12	12	11-12	16.2	221
146-216	12	18	13-18	16.6	225
218-288	12	24	19-24	18.7	295
360-432	12	36	30-36	21.5	390



3.3 Performance

NO	ITEM	TEST METHOD	SPECIFICATION
1	Tensile performance IEC60794-1-21-E1	-Short-term load: 2700N - Time: 5 minute	Loss change $\leq$ 0.10 dB@1550 nm (after test) - Fiber strain $\leq$ 0.60 % - No sheath damage
		-Long-term load: 890N - Time: 5 minute	- Loss change $\leq$ 0.10 dB@1550 nm (during test) - Fiber strain $\leq$ 0.20 % - No sheath damage
2	Crush test IEC60794-1-21-E3	- Load: 1500 N /100mm - Time: 5 minute - Length: 100 mm	Loss change $\leq$ 0.10 dB@1550 nm (during test) - No sheath damage
3	Impact test IEC60794-1-21-E4	- Impact high:1m - Impact weight:300g - Points of impact: 3 - Times of per point: 2	Loss change $\leq$ 0.10 dB@1550 nm (during test) - No sheath damage
4	Repeated bending IEC60794-1-21-E6	- Bending radius.: $20 \times D$ - Load: 250N - Flexing rate: 2sec/cycle - No. of cycle: 25	- No fiber break - No sheath damage
5	Water penetration IEC60794-1-22-F5	- Height of water: 1m - Sample length: 3 m - Time: 24 hr	- No drip through the cable core assembly
6	Twist IEC60794-1-21-E7	- Length: 1 m - Load: 250N - Twist rate: $\leq$ 60sec/cycle - Twist angle: $\pm 180^\circ$ - No. of cycle: 5	Loss change $\leq$ 0.10 dB@1550 nm (during test) - No sheath damage
7	Temperature Cycling IEC60794-1-22-F1	- Temperature step: +20°C→-20°C→+70°C→+20°C (Applicable to 2core to 288core) +20°C→0°C→+70°C→+20°C (Applicable to 360 core to 432core) - Number of cycle: 2 turns - Time per each step: 12 hrs	- Loss change $\leq$ 0.15dB/km@1550 nm (during test) - Loss change $\leq$ 0.05dB/km@1550 nm (after test) - No sheath damage

D\*: Cable diameter



3.4 Minimum bend radius

	Installation	Operation
GYFY	20D	10D

D: Cable diameter

3.5 Temperature range

	Storage	Installation	Operation
GYFY(2core to 288core)	-20 ℃ to 70 ℃	-10 ℃ to 70 ℃	-20 ℃ to 70 ℃
GYFY(360core to 432core)	0 ℃ to 70 ℃	0 ℃ to 70 ℃	0 ℃ to 70 ℃

3.6 Optical Characteristics

Item		Performance	
Fiber Category		G.652D	
Attenuation	Maximum attenuation (cabled)	At 1310nm	≤0.36dB/km
		At 1550nm	≤0.25dB/km
	Typical attenuation (bare fiber)	At 1310nm	≤0.34dB/km
		At 1550nm	≤0.20dB/km

\* For more information on typical attenuation please see the optical fiber specifications

3.7 Color Coding of Loose Tubes and Fibers

Fiber color code

Position	Fiber color Color
1	Blue
2	Orange
3	Green
4	Brown
5	Grey
6	White
7	Red
8	Black
9	Yellow
10	Violet
11	Pink
12	Aqua



Color codes for Loose Tube

2-144core	1	2	3	4	5	6	7	8	9	10	11	12
Layer 1	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

146-216core	1	2	3	4	5	6	7	8	9	10	11	12
Layer 1	Blue	Orange	Green	Brown	Gray	White						
Layer 2	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

218-288core	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Layer 1	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow						
Layer 2	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua	Blue	Orange	Green

432core	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Layer 1	Blue	Orange	Green	Brown	Gray	White												
Layer 2	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua						
Layer 3	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua	Blue	Orange	Green	Brown	Gray	White

3.8 Sheath marking

