TECHNICAL DATASHEET for
Single Mode Optical fiber Cable

Corrugated Steel Armored
(GYTS)

(SM 12, 24, 48 Fibers)

Corrugated Steel Tape Armoured Cable GYTS

GYTS cable has a metal strength member providing excellent strain performance.

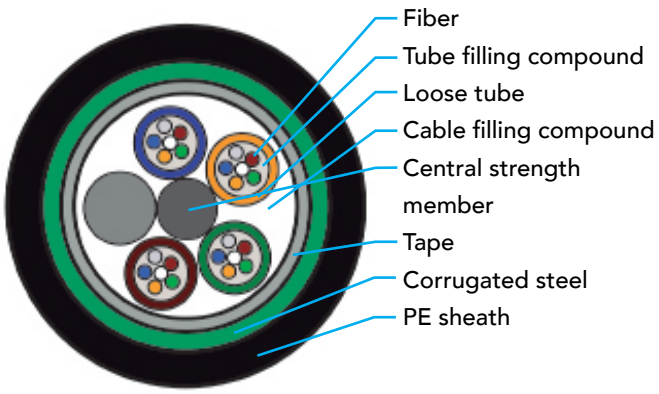
Corrugated steel tape armored and PE outer sheath provide property crush resistance. The armoring of corrugated steel tape is also responsible for making the cable have nice properties of moisture resistance.

GYTS is ideal for installation in aerial or duct environment for long haul communication, LAN, especially suitable for the situation of high requirements to lateral pressure resistance.

Long-distance communication, local trunk line, CATV & computer networks system.

1. CABLE CONSTRUCTION

1.1 Cable cross-section



2. CABLE SPECIFICATION

2.1 Sheath marking

OPL 2019 GYTS XXB1.3 (G.652D) XXXXm	
OPL	: Manufacturer's brand
2019	: Manufacture year
GYTS	: Cable type
XXB1.3 (G.652D)	: xx cores single-mode optical fiber (ITU - T Rec. G.652D)
XXXXm	: Mark of meters

* The marking is printed every 1 meter;
**"G.652D" means ITU-T REC. Low Water Peak (LWP) G.652 Single mode Optical Fiber.

2.2 The color of marking is white

2.3 An occasional uncler of length marking is permitted if both of the neighboring marking are clear;

2.4 The both cacle ends are sealed with heat shrinkable end caps to prevent water ingress.

2.5 Fiber color code

No	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Gray	White
No	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Pink	Aqua

2.6 Color codes for Loose Tube (LT) & Filler Rod (FR)

Fiber Count	Element No.					
	1	2	3	4	5	6
12	LT	LT	FR	FR	FR	FR
24	LT	LT	LT	LT	FR	FR
48	LT	LT	LT	LT	FR	FR

* "LT" means "Loose Tube";

** "FR" means "Filler Rod";

2.7 Cable structure and parameter

Fiber Count	Max. fiber count per tube	Total unit count (LT + FR)	Sheath thickness (nominal*)	Cable diameter (nominal**)	Weight (approx.)
			mm	mm	Kg/km
12	6	6 (2LT + 4 FR)	1.5 / 1.8	10.0	105
24	6	6 (2LT + 4 FR)	1.5 / 1.8	10.0	105
48	12	6 (2LT + 4 FR)	1.5 / 1.8	10.0	105

* The nominal sheath thickness may vary by ± 0.2mm.

** The nominal outer diameter and height may vary by ± 0.2mm.

3. FIBER PROPERTIES

3.1 The properties of single mode optical fiber (ITU – T Rec. G.652D)

Item	Specification
Fiber type	Single mode
Fiber material	Doped silica
Attenuation coefficient @ 1310 nm @ 1383 nm @ 1550 nm @ 1625 nm	 ≤ 0.35 dB/km ≤ 0.35 dB/km ≤ 0.21 dB/km ≤ 0.30 dB/km
Point discontinuity	≤ 0.05 dB
Cable cut-off wavelenth	≤ 1260 nm
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	≤ 0.093 ps / (nm².km)
Chromatic dispersion @ 1288 ~ 1339 nm @ 1271 ~1360 nm @ 1550 nm @ 1625 nm	 ≤ 3.5 ps/ (nm . km) ≤ 5.3 ps/ (nm . km) ≤ 18 ps/ (nm . km) ≤ 22 ps/ (nm . km)
PMD	≤ 0.2 ps/km$^{1/2}$
Mode field diameter @ 1310 nm	(8.6 ~ 9.5) ± 0.6 µm
Core / Clad concentricity error	≤ 0.6 µm
Clandding diameter	125.0 ± µm
Cladding non-cicularity	≤ 1.0%
Primary coating diameter	245 ± 10 µm
Proof test level	100 kpsi (=0.69 Gpa), 1%
Temperature dependence 0°C~ + 70°C @ 1310 & 1550nm	≤ 0.1 dB/km

* PMD_Q is a link of 20 cable selections (M) and a probability level of 0.01% (Q).

4. CHARACTERISTIC OF OPTICAL CABLE

4.1 Mechanical & environmental characteristics

4.1.1 Cable bending radius: 10 x cable diameter (during operation) 20x Cable diameter (during installation)

4.1.2 Temperature range

Operating temperature range	-40°C to + 60°C
Storage / Transport temperature range	-50°C to + 70°C
Installation temperature range	-30°C to +50°C

4.2 Main mechanical & environmental characteristics test.

NO	ITEM	TEST METHOD	ACCEPTANCE REQUIREMENTS
1	Tensile Strength IEC 794 - 1 - E1	- Load: 3,000 N - Lenght of cable under load: 50m - Load time: 5 min	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
2	Crush Test IEC 60794 - 1 - E3	- Load: 3.000 N/100 mm - Load time: ≥1min	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
3	Impact Test IEC 60794 - 1 - E4	- Points of impact: 5 - Times of per point:5 - Impact nergy: 10.0 Nm - Impact rate: 2 sec/cycle	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
4	Repeated Bending IEC 60794 - 1 - E6	- Bending Dia.: 20 x OD - Load: 250N - Flexing rate: 3sec/cycle - No. of cycle: 30	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
5	Torsion IEC 60794 - 1 - E7	- Lenght: 1m - Load: 250N - Twist rate: 1 min/cycle - Twist angle: ± 90° - No. of cycle: 10	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
6	Water penetration IEC 60794 - 1 - F5B	- Height of water: 1m - Sample lenth: 3 m - Time: 24 hour	- No water shall have leaked from the opposite end of cable
7	Temperature cycling IEC 60794 - 1 - F1	- Temperature step: +20° C → - 40° C → +40°C → +20°C - Time per each step: 24hrs - Number of cycle: 2	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage
8	Compound Flow IEC 60794 - 1 - E14	- Sample length: 30 cm - Temp: 70° C ± 2°C - Time: 24 hours	- No compound flow
9	Sheath High voltage Test	- On line test - 9t KV (t-sheath thickness)	- No sheath breakdown

5. PACKING AND MARKING

5.1 Packing

5.1.1 Each single length os cable shall be reeed on Fumigated Wooden Drum suitable for long distance shipment.

5.1.2 Covered by plastic buffer sheet.

5.1.3 Sealed by strong wooden battens.

5.1.4 At least 1 m of inside end of cable will be reserved for testing

5.1.5 Drum length

5.1.5.1 Standard drum length is 2000 m± 3%

5.1.5.2 Single length not less than 90% of standard length per drum shall be permitted for quantity ot exceeding 10% of the total supply;

5.1.5.3 Total quantity is at least the ordered quantity;

5.2 Drum Marking

6.2.1 Cable drum

- Manufacturer brand;

- Roll -direction arrow;
- Cable outer end position indicating arrow;
- The word "OPTICAL FIBER CABLE";
- Origin, The word "MADE IN CHINA";
- Caution plate indicating the correct method for loading, unloading and convey the cable;
- Other customer information such as contract no., project no., and delivery destination. (if needed)

5.2.2 Marking plate

- Product name;
- Cable type and size;
- Drum length;
- Gross / Net weight in kilograms;
- Drum number in meters;
- Manufacturer's name;
- Manufacturing year and month;
- Project number, contract number or purchasing order number (if needed).

5.3 Cable identification documents

- test report.