

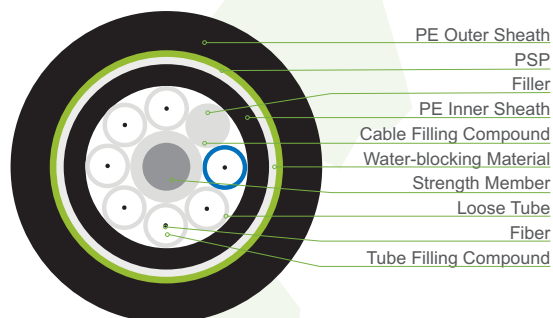
PRODUCT DATA SHEET

Stranded Loose Tube Cable with Steel Tape (Double Sheaths) (GYTY53)



Introduction

In the Nitrotel GYTY53 cable, single-mode/multimode fibers are positioned in the loose tubes, which are made of high modulus plastic materials, while the loose tubes strand together around metallic central strength member into a compact and circular cable core. For certain high fibre count cables, the strength member would be covered with polyethylene (PE). The water-blocking materials are distributed into interstices of the cable core. The cable core is covered with a PE inner sheath, and the PSP is longitudinally applied around the cable core before a HDPE outer sheath is extruded over it.



Fiber color code

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

Fiber color in each tube starts from No. 1 Blue.

Color codes for loose tube & filler rod

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

Tube color in each layer starts from No. 1 Blue. If there are fillers, the color is nature.

Order Information and Characteristics of Optical Cables

Cable Type (increased by 2 fibers)	Fiber Count	Tube & Fillers	Max. No. of Fibers in each Tube	Cable Diameter mm	Cable Weight kg/km	Tensile Strength Long/ShortTerm N	Crush Resistance Long/ShortTerm N/100 mm
NT-GYTY53-2~36Xn	2~36	6	6	12.6	184	1000/3000	1000/3000
NT-GYTY53-38~72Xn	38~72	6	12	14.0	216	1000/3000	1000/3000
NT-GYTY53-74~96Xn	74~96	8	12	15.7	260	1000/3000	1000/3000
NT-GYTY53-98~120Xn	98~120	10	12	17.4	301	1000/3000	1000/3000
NT-GYTY53-122~144Xn	122~144	12	12	19.0	354	1000/3000	1000/3000
NT-GYTY53-146~216Xn	146~216	18	12	19.0	350	1000/3000	1000/3000

Note:

1. Suffix Xn denotes fiber type and see details in Nitrotel cable coding illustration.
2. The color arrangement of fiber and tube is specified in color identification table.
3. The normal PE sheath thickness is 1.0mm, and PE outer sheath thickness is 2.0mm.



Characteristic

- Excellent mechanical and temperature performance guaranteed by the accurate excess fiber length
- Critical protection to fibers, based on the excellent hydrolysis resistance and strength performance of tube material and special filling compound filled in the tube
- Excellent crush resistance and flexibility
- The following measures are taken to ensure the water blocking performance of the cable:
 - Single steel wire used as the central strength member
 - Special water-blocking filling compound in the loose tube
 - 100% cable core filling
 - PSP moisture barrier
 - Water-blocking material
- Application: Duct/Aeria

Temperature requirement	Operation	-40 ~+70
	Installation	-10 ~+70
	Storage/transportation	-40 ~+70
Temperature cycling test	conform to IEC 794-1-F1	
Bending Radius	Static	10 times of outer diameter
	Dynamic	20 times of outer diameter

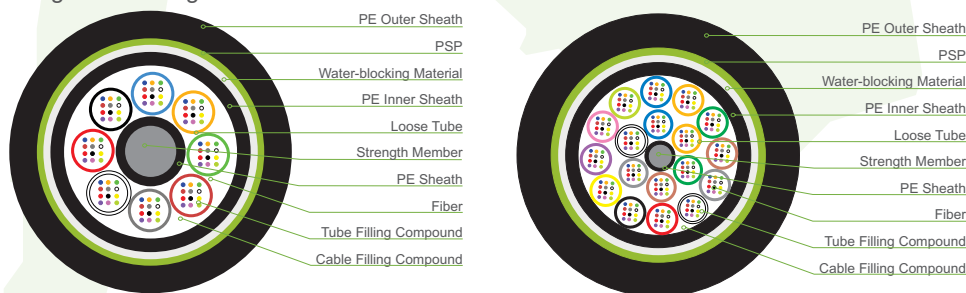
Span (m)	RTS (kN)	MAT	EDS
100~150	3~5	40% RTS	25% RTS
200~300	8~12	40% RTS	25% RTS
500	15	40% RTS	20% RTS

Order Information (Part Number)

NT-GYTY53-XXS

Fiber Count
06
12
24
36
48
72
96
144

Fig 2 and 3: High Fiber Count Cable



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Nitrotel FullBand® Low Water Peak Singlemode G.652D fiber

Characteristics	Conditions	Specified Values	Units
Optical Characteristics			
Attenuation	1310 nm	≤ 0.34	[dB/km]
	1383 nm	≤ 0.34	[dB/km]
	1550 nm	≤ 0.20	[dB/km]
	1625 nm	≤ 0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference	1285-1330 nm	≤ 0.03	[dB/km]
	1525-1575 nm	≤ 0.02	[dB/km]
Dispersion coefficient	1285 - 1340 nm	$\geq -3.4 \leq 3.4$	[ps/(nm·km)]
	1550 nm	≤ 18	[ps/(nm·km)]
	1625 nm	≤ 22	[ps/(nm·km)]
Zero dispersion wavelength		1312± 12	[nm]
Zero dispersion slope		≤ 0.091	[ps/(nm ² ·km)]
Typical value		0.086	[ps/(nm ² ·km)]
PMD			
Maximum Individual Fibre		≤ 0.1	[ps $\sqrt{\text{km}}$]
Link Design Value (M=20,Q=0.01%)		≤ 0.06	[ps $\sqrt{\text{km}}$]
Typical value		0.04	[ps $\sqrt{\text{km}}$]
Cable cutoff wavelength λ_{cc}		≤ 1260	[nm]
Mode field diameter (MFD)	1310 nm	8.7 9.5	[μm]
	1550 nm	9.9 10.9	[μm]
Effective group index of refraction (N_{eff})	1310 nm	1.466	
	1550 nm	1.467	
Point discontinuities	1310 nm	≤ 0.05	[dB]
	1550 nm	≤ 0.05	[dB]
Geometrical Characteristics			
Cladding diameter		125.0± 1.0	[μm]
Cladding non-circularity		≤ 1.0	[]
Coating diameter		245± 7	[μm]
Coating-cladding concentricity error		≤ 12.0	[μm]
Coating non-circularity		≤ 6.0	[]
Core-cladding concentricity error		≤ 0.6	[μm]
Curl (radius)		≥ 4	[m]
Delivery length		2.1 to 50.4	[km/reel]
Environmental Characteristics			
(1310nm, 1550nm & 1625nm)			
Temperature dependence			
Induced attenuation at	-60 to +85	≤ 0.05	[dB/km]
Temperature-humidity cycling			
Induced attenuation at	-10 to +85 , 98% RH	≤ 0.05	[dB/km]
Watersoak dependence			
Induced attenuation at	23 , for 30 days	≤ 0.05	[dB/km]
Damp heat dependence			
Induced attenuation at	85 and 85% RH, for 30 days	≤ 0.05	[dB/km]
Dry heat aging at	85	≤ 0.05	[dB/km]
Mechanical Specification			
Proof test	off line	≥ 9.0	[N]
		≥ 1.0	[%]
		≥ 100	[kpsi]
Macro-bend induced attenuation 1 turn around a mandrel of 32mm diameter 100 turns around a mandrel of 50mm diameter 100 turns around a mandrel of 60mm diameter	1550 nm	≤ 0.05	[dB]
	1310 nm & 1550 nm	≤ 0.05	[dB]
	1625 nm	≤ 0.05	[dB]
Coating strip force	typical average force	1.7	[N]
	peak force	$\geq 1.3 \leq 8.9$	[N]
Dynamic stress corrosion susceptibility parameter nd		≥ 20	



LAPOSH[®] Single Mode Fiber G655

Characteristics	Conditions	Specified Values	Units
Optical Characteristics			
Attenuation	1550 nm 1625 nm	≤0.22 ≤0.24	[dB/km] [dB/km]
Attenuation vs. Wavelength Max. α difference	1525~1575 nm	≤0.02	[dB/km]
Dispersion coefficient	1530~1565 nm 1565~ 1625 nm	≥2.0 ≤6.0 ≥4.5 ≤11.2	[ps/(nm · km)] [ps/(nm · km)]
Zero dispersion wavelength		≤1520	[nm]
Dispersion slope at 1550 nm Typical dispersion slope at 1550 nm		≤0.084 0.075	[ps/(nm ² · km)] [ps/(nm ² · km)]
PMD Maximum Individual Fibre Link Design Value (M=20,Q=0.01%) Typical value		≤0.2 ≤0.08 0.04	[ps √km] [ps √km] [ps √km]
Cable cutoff wavelength λ _{cc}		≤1450	[nm]
Mode field diameter (MFD)	1550 nm	9.1~10.1	[μm]
Effective group index of refraction (N _{eff})	1550 nm 1625 nm	1.469 1.469	
Point discontinuities	1550 nm	≤0.05	[dB]
Geometrical Characteristics			
Cladding diameter		125.0±0.7	[μm]
Cladding non-circularity		≤1.0	[]
Coating diameter		245±7	[μm]
Coating-cladding concentricity error		≤12.0	[μm]
Coating non-circularity		≤6.0	[%]
Core-cladding concentricity error		≤0.6	[μm]
Curl (radius)		≥4	[m]
Delivery length		2.1 to 25.2	[km/reel]
Environmental Characteristics (1550 nm & 1625 nm)			
Temperature dependence Induced attenuation at	-60°C to +85°C	≤0.05	[dB/km]
Temperature-humidity cycling Induced attenuation at	-10°C to +85°C 98% RH	≤0.05	[dB/km]
Watersoak dependence Induced attenuation at	23°C for 30 days	≤0.05	[dB/km]
Damp heat dependence Induced attenuation at	85°C and 85% RH, for 30 days	≤0.05	[dB/km]
Dry heat aging at	85°C	≤0.05	[dB/km]
Mechanical Specification			
Proof test	off line	≥9.0 ≥1.0 ≥100	[N] [%] [kpsi]
Macro-bend induced attenuation 1 turn around a mandrel of 32 mm diameter 100 turns around a mandrel of 50 mm diameter 100 turns around a mandrel of 60 mm diameter	1550 nm 1310 nm & 1550 nm 1625 nm	≤0.05 ≤0.05 ≤0.05	[dB] [dB] [dB]
Coating strip force	typical average force peak force	1.5 ≥1.3 ≤8.9	[N] [N]
Dynamic stress corrosion susceptibility parameter nd		≥27	

