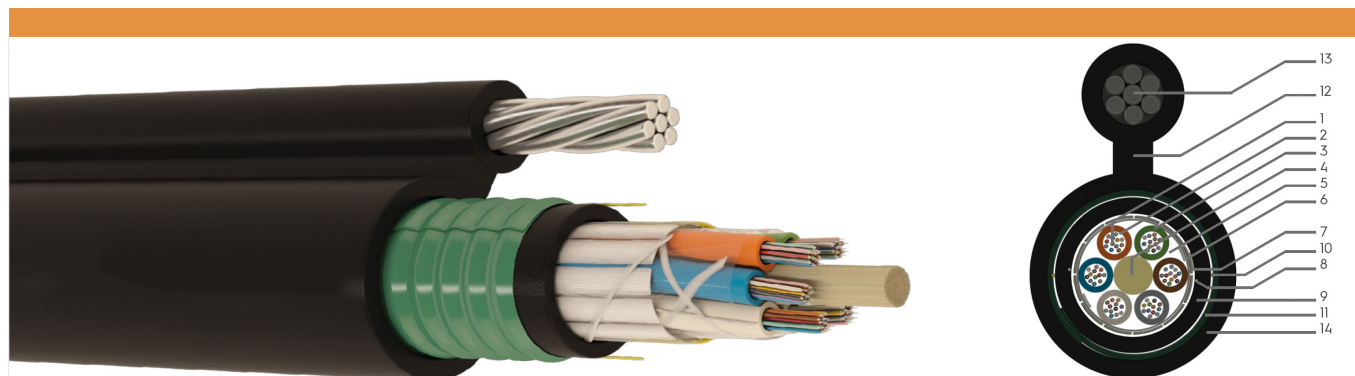


Fiber Optic Cables - Self Supporting G652D Outdoor



Application

- For aerial applications.
- In heavy duty environments.
- Suitable to be used up to 60 meters pole span.
- As a backbone cable in telecommunication lines
- Rodent protection.

Application Cable Construction

- 1 - Optical fiber core ¹
- 2 - Waterproof thixotropic jelly
- 3 - PBT Tube
- 4 - Non-metallic central strength member (FRP)
- 5 - Jelly filling
- 6 - Core Wrapping (Polyester Tape)
- 7 - Non-metallic strength member (Glass yarn)
- 8 - Ripcord
- 9 - UV resistant polyethylene (LLDPE) black inner jacket
- 10 - Ripcord
- 11 - Corrugated steel tape
- 12 - Web
- 13 - Steel messenger wire (7x1.75 mm) **Approximate total diameter 5.25 mm**
- 14 - UV resistant polyethylene (HDPE) black outer jacket

Mechanical and Environmental Characteristics

Test	Test Standard	Specified Value	Acceptance Criteria
Maximum Installation Tension	IEC 60794-1-2-E1	$3.0 \times W(N)$, min. 5000 N	Fiber strain $\leq 0.33\%$
Maximum Operation Tension	IEC 60794-1-2-E1	$1.0 \times W(N)$, min. 1500 N	$\Delta\alpha \leq 0.05$ dB, No fiber strain
Crush Strength	IEC 60794-1-2-E3	4000 N / 100 mm, max. 15 min.	$\Delta\alpha \leq 0.05$ dB, No damage
Impact	IEC 60794-1-2-E4	10 Nm, 3 impacts, R= 300 mm	$\Delta\alpha \leq 0.05$ dB after the test
Torsion	IEC 60794-1-2-E7	1 m, 100N, +/-180°, 10 cycles	No damage
Repeated Bending	IEC 60794-1-2-E6	R=20× D, 100 N, 35 cycles	No damage
Bending Radius	IEC 60794-1-2-E11	R=20× D, 4 turns, 3 cycles	$\Delta\alpha \leq 0.05$ dB, No damage
Temperature Cycling	IEC 60794-1-2-F1	-20°C to +70°C	$\Delta\alpha \leq 0.05$ dB/km
Waterproofness	IEC 60794-1-2-F5B	Sample= 3 m, water column= 1 m	No water leakage in 24 hours

Application

Condition	Minimum Bending Radius	Condition	Temperature Range (°C)		
Operation	20 × cable Ø	Storage	-40°C to +70°C	Installation	-30°C to +60°C
Fixed	15 × cable Ø	Transport	-40°C to +70°C	Operating	-40°C to +70°C

Notes

¹ Optical fiber core could be applied as G.652.D, G.655, G.657.A1, G.657.A2, OM1, OM2, OM3, OM4 according to customer demand.

² Maximum tensile strength could be changed according to customer demand.

Manufacturing Standard: TS EN 60794-3-12

Part Number	Core Type	Fiber Count	Tube Count	Filler Count	Tube Diameter (mm)	FRP Diameter (mm)	Cable Diameter (mm)	Cable Weight (kg/km)
1	SM G.652.D	2	1	5	2.05	2.2	13.9	389
2	SM G.652.D	4	1	5	2.05	2.2	13.9	389
3	SM G.652.D	4	2	4	2.05	2.2	13.9	390
4	SM G.652.D	6	1	5	2.05	2.2	13.9	389
5	SM G.652.D	6	3	3	2.05	2.2	13.9	391
6	SM G.652.D	8	1	5	2.05	2.2	13.9	389
7	SM G.652.D	8	2	4	2.05	2.2	13.9	390
8	SM G.652.D	8	4	2	2.05	2.2	13.9	391
9	SM G.652.D	12	1	5	2.25	2.2	13.9	390
10	SM G.652.D	12	3	3	2.05	2.2	13.9	390
11	SM G.652.D	12	6	0	2.05	2.2	13.9	393
12	SM G.652.D	16	2	4	2.05	2.2	13.9	389
13	SM G.652.D	16	4	2	2.05	2.2	13.9	391
14	SM G.652.D	20	5	1	2.05	2.2	13.9	392
15	SM G.652.D	24	2	4	2.25	2.2	13.9	391
16	SM G.652.D	24	3	3	2.05	2.2	13.9	390
17	SM G.652.D	24	4	2	2.05	2.2	13.9	391
18	SM G.652.D	24	6	0	2.05	2.2	13.9	392
19	SM G.652.D	32	4	2	2.05	2.2	13.9	390
20	SM G.652.D	36	3	3	2.25	2.2	13.9	391
21	SM G.652.D	36	6	0	2.05	2.2	13.9	392
22	SM G.652.D	48	4	2	2.25	2.2	14.2	400

Performance of Cabled Optical Fiber

Item		Specification
Fiber type		-Single mode
Fiber material		Doped silica
Attenuation coefficient	@ 1310 nm	≤ 0.36 dB/km
	@ 1550 nm	≤ 0.22 dB/km
Cable cut-off wavelength		≤ 1260 nm
Zero-dispersion wavelength		1300 ~ 1324 nm
Zero-dispersion slope		≤ 0.092 ps/(nm ² .km)
Chromatic dispersion	@ 1288 ~ 1339 nm	≤ 3.5 ps/(nm. km)
	@ 1550 nm	≤ 18 ps/(nm. km)
	@ 1625 nm	≤ 22 ps/(nm. km)
PMD		≤ 0.2 ps/km ^{1/2}
Mode field diameter	@ 1310 nm	9.2 ± 0.4 μ m
Core / Clad concentricity error		≤ 0.6 μ m
Cladding diameter		125.0 ± 1.0 μ m
Cladding non-circularity		≤ 1.0 %
Primary coating diameter		245 ± 10 μ m

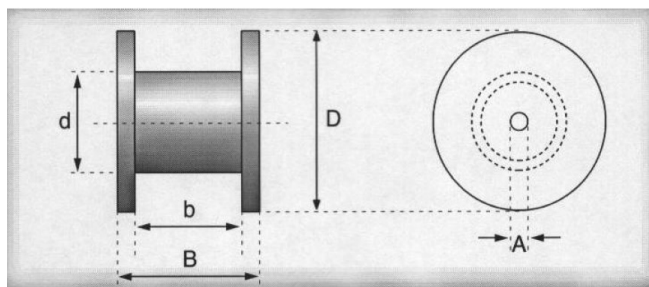
Packing

- Standard drum length is 2000 with $\pm 2\%$.
- Sealed by strong wooden battens.
- At least 3m of cable inner end should be reserved for testing.
- Shipment will be done with non-returnable wooden drums with protection.

Cable Life Time

Designed cable has a minimum 25 years' service life time, if the cable is correctly installed.

Note : The value "D" contain the seal dimension.



Cable Type	Drum Length (m)	Drum Dimensions			
		D (mm)(-2,+12)	d (mm)(± 10)	B (mm)(-5,0)	b (mm)
24/48/96 Core	2,000 meter	1280	580	710	640