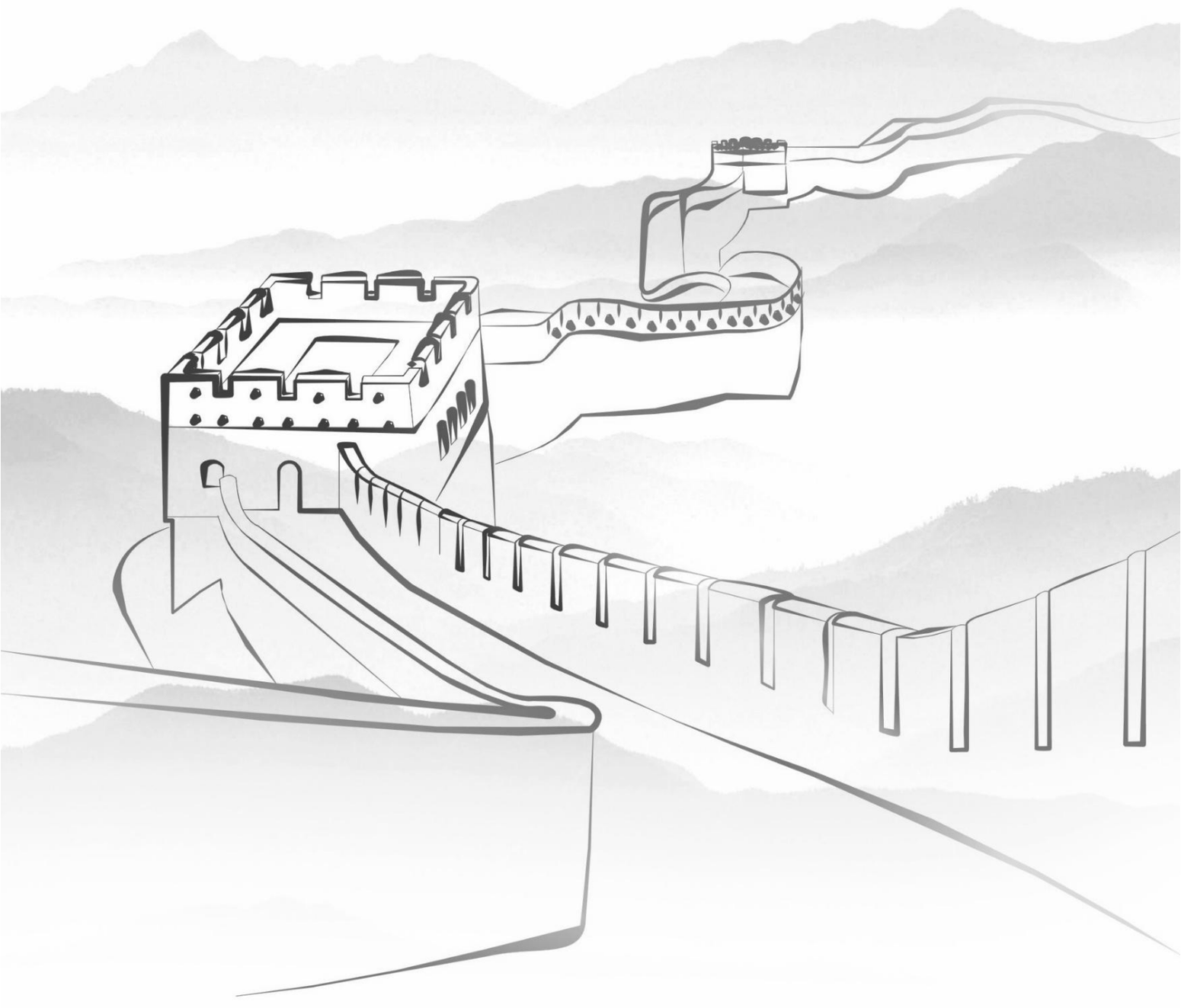
Optical Fiber Cable Specification

FiberHome

SISTEMAS Y SERVICIOS DE COMUNICACION, SA DE CV



Aerial Cable ADSS – 144 G.652D Span 100m

Max Span: 100m Max applied voltage:110kv

Max operating weather conditions: 25m/s wind speed and no ice load

Cable Design

- **Central Strength Member (CSM):** Glass fiber reinforced plastic rod (GFRP), with PE sheath covering when needed.
- **Loose Tube:** PBT plastic material, containing 12 fibers and filled with a suitable water tightness jelly.
- **Stranding:** Loose tube & filler SZ stranded around CSM.
- **Longitudinal Water Tightness:** Dry core with water swellable elements.
- **Ripcord:** 2 polyester ripcords under each sheath.
- **Aramid Yarn:** Aramid yarn as additional strength member.
- **Outer Sheath:** Black HDPE.

Cable Specification

Cable description		
Item	**Specified**	**Measure**
Cable Cores		**144**
No. of Tubes		12
Fiber Counts in Tube		12
No. of Fillers		/
Tube/Filler- Φ	mm	2.4
CSM- Φ	mm	3.3
Coated CE- Φ	mm	7.3
Thickness of Outer Sheath	mm	1.5
Nom. Cable Diameter	mm	15.5±0.5mm
Nom. Cable Weight	kg/km	182±15kg/km
Max Allowable Tensile Strength	N	3500
Max Allowable Crush Strength	N/10cm	1000

Aerial Cable ADSS – 144 G.652D Span 120m

Max Span: 120m Max applied voltage:110kv

Max operating weather conditions: 25m/s wind speed and no ice load

Cable Design

- **Central Strength Member (CSM):** Glass fiber reinforced plastic rod (GFRP), with PE sheath covering when needed.
- **Loose Tube:** PBT plastic material, containing 12 fibers and filled with a suitable water tightness jelly.
- **Stranding:** Loose tube & filler SZ stranded around CSM.
- **Longitudinal Water Tightness:** Dry core with water swellable elements.
- **Ripcord:** 2 polyester ripcords under each sheath.
- **Aramid Yarn:** Aramid yarn as additional strength member.
- **Outer Sheath:** Black HDPE.

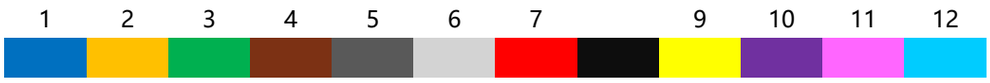
Cable Specification

Cable description		
Item	**Specified**	**Measure**
Cable Cores		**144**
No. of Tubes		12
Fiber Counts in Tube		12
No. of Fillers		/
Tube/Filler- Φ	mm	2.4
CSM- Φ	mm	3.3
Coated CE- Φ	mm	7.3
Thickness of Outer Sheath	mm	1.5
Nom. Cable Diameter	mm	15.6±0.5mm
Nom. Cable Weight	kg/km	185±15kg/km
Max Allowable Tensile Strength	N	4100
Max Allowable Crush Strength	N/10cm	1000

Color Code for Fiber and Loose Tube

Fiber color

Loose tube color(s)



Cable Performance

Cable performance		
Test	**Specified Value**	**Acceptance Criteria**
Tensile IEC 60794-1-21, E1	Span100m：3500 N Span120m：4100 N	Δα≤0.05 dB, fiber strain≤0.33%
Crush IEC 60794-1-21, E3	1000 N/10cm	Δα≤0.05 dB, no sheath damage
Impact IEC 60794-1-21, E4	4.5 J	Δα≤0.05dB, no sheath damage
Repeated Bending IEC 60794-1-21, E6	R=30D, 25 cycles	Δα≤0.05dB, no sheath damage
Torsion IEC 60794-1-21, E7	1m, 10 cycles, ±180°	Δα≤0.05dB, no sheath damage
Temperature Cycling IEC 60794-1-22, F1	2 cycles, -25~+70°C	Δα≤0.10dB/km, no sheath damage
Water Penetration IEC 60794-1-22, F5	3m sample, 1m height, 24 h	No water leakage

Fiber performance

G.652D performance		
Characteristics		**Acceptance Value**
Attenuation	@1310nm	≤0.35 dB/km
	@1383nm	≤0.34 dB/km
	@1550nm	≤0.22 dB/km
	@1625nm	≤0.24 dB/km
Mode field diameter (MFD)	@1310nm	9.2±0.4 μm
	@1550nm	10.4±0.5 μm
Chromatic dispersion coefficient	1288~1339nm (absolute value)	≤3.5 ps/(nm·km)
	1271~1360nm (absolute value)	≤5.3 ps/(nm·km)
	@1550 nm	≤18 ps/(nm·km)
Zero-dispersion wavelength		1302nm~1322 nm
Zero-dispersion slope		≤0.092 ps/(nm^2·km)
Cable cut-off wavelength λ_{cc} (nm)		≤1260 nm
Polarization mode dispersion (PMD, for fiber on the reel)		≤0.20 ps/km$^{1/2}$
Cladding diameter		125±0.7 μm
Cladding non-circularity		≤0.80 %
Core/cladding concentricity error		≤0.6 μm
Proof test		≥0.69 GPa (100kpsi)

Sheath Marking

The outer sheath is marked in 1 meter intervals as follows:

2020 FiberHome < Type designation (defined by purchaser > ** m**

Note: Telephone Symbol is like

Laser Symbol is like

Cable Packing and Marking

1.1 Standard cable length for each reel

Standard length: 4000m per reel Tolerance: ± 1%.

Other cable length available.

1.2 Reel type

Each length of the cable shall be wound on a separate iron wooden reel.

The arbor holes provided in the reels shall be approximately 105 mm with a wood or steel hub in the arbor hole (in lieu of fiberboard).

1.3 Reel marking

Details given below shall be distinctly marked with a weather-proof material on both outer sides of the reel flange:

Purchaser's name

Reel number

Name of the manufacturer

Year of manufacture

Arrow showing the direction the drum shall be rolled

1.4 Cable end retaining methods

Iron wooden reel: inner retaining.

Wooden reel: outer retaining recommended, inner retaining or groove retaining available.

Iron wooden reel

Wooden reel

---------- **End of Specification** ----------