

## ADSS-24 G.652D

Max Span: 100m Max. Applied voltage: 110kv

Max operating weather conditions: NESC Light

### Cable cross-section and dimensions

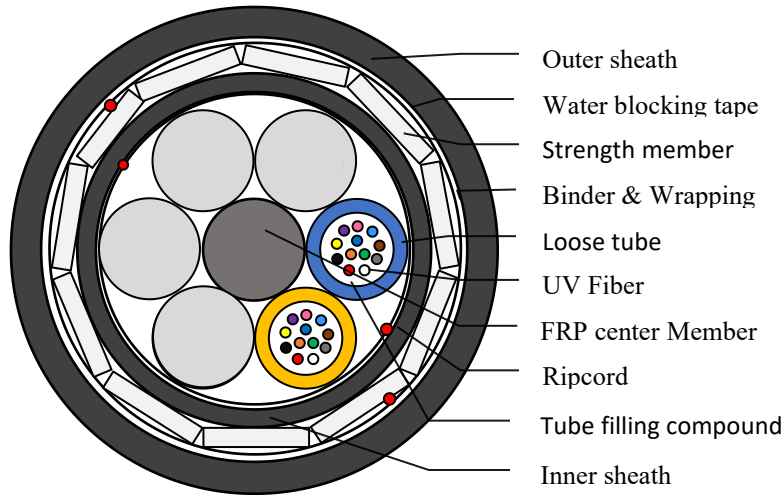


Figure. Cable Cross-Section (A-end)

Item	Material	Description
Outer sheath	HDPE	HDPE
Strength Members	Flat FRP	Additional strength member
Water blocking yarn	Water blocking yarn	Water blocking & moisture proof
Binder	Polyester yarn	Cable core binding
Water blocking tape	Water blocking tape	Water blocking & moisture proof
Loose tube	PBT	Color of tubes: blue, orange,
Tube filling compound	Hydrogen absorption gel	Water Blocking & Moisture Proof
Fiber	Silicon-based fiber(G.652D)	UV fiber, color with: blue, orange, green, brown, gray, white, red, black, yellow, violet, pink, aqua;
Center strength member	FRP	FRP
Cable O.D.		$13.9 \pm 0.5\text{mm}$
Cable weight		$160 \pm 15\text{kg/km}$

### Cable main mechanical properties and application

Serial No.	Item	Requirement
1	Allowable tension resistance (N)	7000N
2	Allowable crush resistance (N)	1000N /10cm
3	Application	Aerial
4	Operation temperature	-20°C ~+65°C

## DETAILED SPECIFICATIONS

### 1. General

1.1 This specification covers the requirements for the supply of dry core, single-mode optical fiber cables.

1.2 This single mode optical fiber cable shall comply with the requirements of this specification and ITU-T G.652D.

### 2. Fiber characteristics

The optical, geometrical, mechanical and environmental performance of the optical fiber shall be in accordance with tables 2.1.

**Table 2.1 G.652D fiber characteristics**

<b>G.652D fiber characteristics</b>		
<b>Optics specifications</b>		
Attenuation	@1310nm	$\leq 0.35\text{dB/km}$
	@1383nm(after hydrogen aging)	$\leq 0.35\text{dB/km}$
	@1550nm	$\leq 0.22\text{dB/km}$
Dispersion	@1285nm~1340nm	$\leq 3.5\text{ps}/(\text{nm}\cdot\text{km})$
	@1550nm	$\leq 18\text{ps}/(\text{nm}\cdot\text{km})$
	@1625nm	$\leq 22\text{ps}/(\text{nm}\cdot\text{km})$
Zero-Dispersion wavelength		1300nm~1324nm
Zero-Dispersion slope		$\leq 0.092\text{ps}/(\text{nm}^2\cdot\text{km})$
Mode field diameter (MFD) at 1310nm		$9.2\pm 0.6\mu\text{m}$
Mode field diameter (MFD) at 1550nm		$10.5\pm 1.0\mu\text{m}$
PMD	Max. for fiber on the reel	$0.20\text{ps}/\text{km}^{1/2}$
Cable cutoff wavelength $\lambda_{cc}(\text{nm})$		$\leq 1260\text{nm}$
<b>Back scatter characteristics (at 1310nm&amp;1550nm)</b>		
Point discontinuity		$\leq 0.05\text{dB}$
Attenuation uniformity		$\leq 0.05\text{dB/km}$
Attenuation coefficient difference for bi-directional measurement		$\leq 0.05\text{dB/km}$
<b>Geometrical characteristics</b>		
Cladding diameter		$125\pm 1.0\mu\text{m}$
Cladding non-circularity		$\leq 1\%$
Core/cladding concentricity error		$\leq 0.6\mu\text{m}$
Fiber diameter with coating (uncolored)		$245\pm 10\mu\text{m}$
Cladding/coating concentricity error		$\leq 12.0\mu\text{m}$

Mechanical characteristics		
Proof stress		$\geq 0.69\text{GPa}(100\text{kpsi})$
Macrobend loss at 1550nm	$\Phi 60\text{mm}, 100$ turns	$\leq 0.05\text{dB}$
	$\Phi 32\text{mm}, 1$ turn	$\leq 0.05\text{dB}$

### 3 PHYSICAL, MECHANICAL, ENVIRONMENTAL, PERFORMANCE AND TESTS

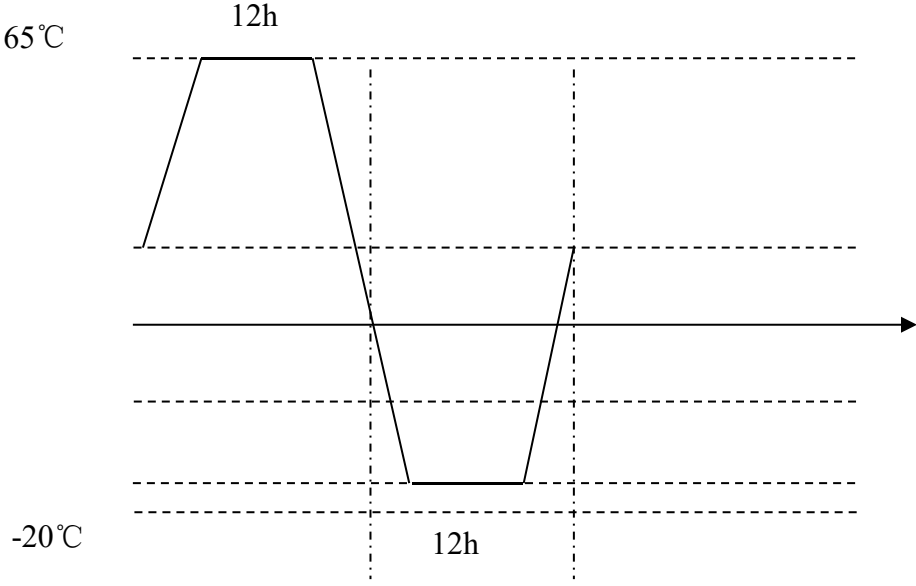
#### 3.1 Mechanical and Environmental Performance of the Cable

The mechanical and environmental performance of the cable shall be in accordance with Table 3.1 below. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1550nm for single mode fiber.

**Table 3.1 The Mechanical and Environmental Performance of the Cable**

Item	Test Method	Test Conditions	Acceptance Criteria
Tensile Strength	IEC60794-1-2-E1	L $\geq$ 50 m Load: 7000N Time: 1 min	Additional attenuation $\leq 0.05$ dB No visible damage to the surface of out sheath
Crush Resistance	IEC60794-1-2-E3	Load: 1000N Time: 1 minute -Length: 100 mm	Additional attenuation $\leq 0.05\text{dB}$ No visible damage to the surface of out sheath
Impact Resistance	IEC60794-1-2-E4	The impact of weight: $\geq 450\text{g}$ Weight high: 1m 3 point , 5 times per point	Additional attenuation $\leq 0.05\text{dB}$ No visible damage to the surface of out sheath
Repeated bending	IEC60794-1-2-E6	Load: 150 N Tests = 30 cycles Each cycle $\approx$ 2 sec. L = 1.0 m	Additional attenuation $\leq 0.05\text{dB}$ No visible damage to the surface of out sheath
Torsion	IEC60794-1-2-E7	The test length = 1m, $\pm 180$ degree, 10 cycles, Test weight 150N	Additional attenuation $\leq 0.05\text{dB}$ No visible damage to the surface of out sheath

Item	Test Method	Test Conditions	Acceptance Criteria
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<p>Temperature cycling</p>	<p>IEC60794-1-2-F1</p>	<p>Operating Temperature: -20 ° C to +65 ° C Soak time:12h Cycle:2 Cable length: ≥ 1000 m</p>	<p>Additional attenuation ≤0.05 dB</p>
 <p>The graph illustrates a temperature cycling test cycle. The vertical axis represents temperature in degrees Celsius, with marked points at 65°C and -20°C. The horizontal axis represents time. The cycle consists of three segments: a ramp up from an initial temperature to 65°C, a horizontal hold at 65°C for 12 hours, a ramp down to -20°C, a horizontal hold at -20°C for 12 hours, and a final ramp up to 65°C. Dashed horizontal lines indicate the temperature levels, and vertical dashed lines mark the start and end of the 12-hour soak periods.</p>			
<p>Water penetration Test</p>	<p>IEC60794-1-2-F5</p>	<p>At 20±5 °C ,1m water column applied to one of 3m cable after 24h,no water penetration</p>	<p>No water penetration</p>