

All-Dielectric Self-Supporting Aerial Cable (ADSS)

Model: ADSS (Single / Double Sheath)

Product Description

ADSS optical cable adopts a loose-tube stranded structure. 250 μm optical fibers are encased in loose tubes made of high-modulus material and filled with a waterproof compound. The loose tubes (and filler rods) are stranded around a non-metallic central strength member (FRP) to form a compact, circular cable core. Interstices within the core are filled with water-blocking gel compound. The cable core is extruded with a polyethylene (PE) inner sheath, followed by high-tensile aramid yarns as strengthening elements, and finally finished with a polyethylene (PE) outer sheath or anti-tracking (AT) outer sheath.

Cable Cross-Section Structure

1. Single Sheath Structure:

- | | | |
|--------------------------------------|-------------------------|-------------------|
| • PE / AT Outer Sheath | • Aramid Strength Layer | • Core Filler Gel |
| • Non-Metallic Strength Member (FRP) | • Optical Fiber Core | • PBT Loose Tube |

2. Double Sheath Structure:

- | | | |
|------------------------|-------------------------|--------------------------------------|
| • PE / AT Outer Sheath | • Aramid Strength Layer | • PE Inner Sheath |
| • Water-Blocking Tape | • Core Filler Gel | • Non-Metallic Strength Member (FRP) |
| • Optical Fiber Core | • Fiber Filling Gel | • PBT Loose Tube |

Product Features

- Lightweight & Small Diameter:** Reduces ice and wind load as well as load stress on power towers and support structures.
- Superior Mechanical & Temperature Performance:** High tensile strength and reliable performance across wide temperature extremes.
- Large Span Capability:** Supports large spans with maximum span lengths exceeding 1000 meters.
- Anti-Tracking Sheath:** AT outer sheath features excellent electrical tracking resistance, making it suitable for high-voltage power lines.
- Live-Line Installation:** Enables continuous, uninterrupted power line installation and maintenance without power shutdowns.
- Long Service Life:** Expected operating lifetime exceeds 30 years under standard operating conditions.

Technical Parameters

Ref. Outer Dia. (mm)	Ref. Weight (kg/km)		Rec. Daily Max. Working Tension (kN)	Max. Allowable Tensile Load (kN)	Breaking Strength (kN)	Strength Member Cross Area (mm ²)	Elastic Modulus (kN/mm ²)	Thermal Expansion Coeff. (x10 ⁻⁶ /K)	Applicable Span Under Meteorological Conditions (m)			
	PE Sheath	AT Sheath							A	B	C	D
12.5	125	136	1.5	4.0	10	4.6	7.6	1.8	160	100	140	100
13.0	132	142	2.3	6.0	15	7.6	8.3	1.5	230	150	200	150
13.6	145	156	3.6	10.0	24	13.8	10.8	1.2	370	250	350	250
14.9	171	185	6.8	18.0	45	22.0	16.4	0.6	570	380	550	380
15.5	190	204	9.0	26.0	60	32.2	19.1	0.1	750	530	750	510
16.8	226	242	15.5	41.0	103	48.0	24.0	-0.4	1000	750	1000	760

* Note: The above data is for reference only. Storage & Operating Temperature: -40°C to +70°C.

Product Standards

ADSS Optical Cable Standards: Complies with **IEEE 1222** and **IEC 60794-1** international standards.