

Parameters of ADSS optical cable for communication

Article Overview

ADSS cables are all-dielectric, self-supporting fiber optic cables designed for aerial installation, with key parameters including fiber type, core count, tensile strength, maximum allowable tension, and environmental resistance.

Fiber and Core Specifications

ADSS cables typically use single-mode fibers such as ITU-T G.652D or G.657A1/A2, with core counts ranging from 2 to 144 fibers depending on application requirements, such as long-distance or backbone communication . Fibers are housed in loose tubes made of high-modulus plastics filled with waterproof compounds, and each tube generally holds up to 12 fibers . Color coding is applied to identify individual fibers throughout the cable length .

Mechanical Parameters

- o **Rated Tensile Strength (RTS/UTS):** The ultimate tensile strength represents the maximum load the cable can withstand without breaking. The actual breaking force should be $\geq 95\%$ of the calculated value .
- o **Maximum Allowable Tension (MAT):** Typically about 40% of RTS, MAT defines the safe operational tension during installation and service .
- o **Strength Members:** ADSS cables use aramid yarns (Kevlar(R)) or glass fiber reinforced plastic (GRP) rods to provide tensile strength and maintain structural stability .
- o **Pole Span:** Designed for long spans, often hundreds of meters to over 1 km, suitable for high-voltage power line installations .

Environmental and Protective Features

- o **Outer Sheath:** UV-resistant HDPE or dual-layer polyethylene, sometimes with arc-tracking resistant PE-A for high-voltage environments .
- o **Water Blocking:** Thixotropic gels, water-blocking yarns, or swellable materials prevent moisture ingress .
- o **Temperature and Humidity Tolerance:** ADSS cables are engineered to withstand wide temperature ranges and high humidity without degradation .
- o **Arc-Tracking Protection:** AT coatings are applied in environments ≥ 35 kV to prevent electrical tracking .

Optical Performance

- o **Attenuation:** Typically measured at 1550 nm, with additional attenuation under short-term load ≤ 0.1 dB and no damage to the cable structure .

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- o Long-Term Reliability: Designed for 25 years of service under typical aerial conditions .
- o Installation Flexibility: Fibers can be accessed without special tools, and the cable can be installed by pulling, blowing, or aerial suspension .

Standards Compliance

ADSS cables conform to ITU-T, IEC, and EIA recommendations, ensuring compatibility with global telecommunication and power transmission standards . Quality control is maintained through ISO 9001, ISO 14001, and RoHS compliance .

Summary

ADSS optical cables combine lightweight, high tensile strength, environmental resistance, and long-term optical performance, making them ideal for aerial deployment in power transmission and telecommunication networks. Key parameters to consider include fiber type, core count, tensile strength, MAT, RTS, water-blocking, outer sheath material, and attenuation performance. Proper selection ensures safe, durable, and efficient operation in high-voltage and long-span installations.

ADSS optical cables operate in an overhead configuration characterized by long-span, two-point support (typically

Optical Communication Products (QSICO). The cable is in accordance with applicable standard of cable and requirement of

All-dielectric self-supporting (ADSS) cable is a type of optical fiber cable that is strong enough to support itself between structures

1.2 The cable shall be used for aerial installation. (Span $\leq$ 60m, Initial sag: 0.5%, flat ground) 1.3 The cable generally meets any latest

Part 1: What is ADSS cable Product experts James Xu from zion communication king-tone

ADSS (All-Dielectric Self-Supporting) fiber optic cables are commonly used in telecommunication networks for long

Explore the complete specifications of ADSS fiber optic cables, including structure details, mechanical performance,

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Explore ADSS cables technical specs, span limits, fiber counts, and key selection factors for reliable aerial fiber optic

All Dielectric Self-Supporting (ADSS) optical cables provide fast and economical transmission channels for power

Therefore, the main parameters of ADSS cables are in line with the regulations of power

This specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. It

AFL-ADSS ® (All-Dielectric Self-Supporting) fiber optic cable is designed for outside plant aerial

Are you in search of the optimal fiber optic cable for your network? Well! It is critical to choose the right cable so that

ADSS-SS-80m-48B1.3 ... General 1.1 Scope This Specification covers the design requirements and performance standard for the

Learn how to select the right ADSS fiber optic cable based on span length, voltage level, and weather conditions. This

Defining ADSS Fiber When diving into the world of fiber optics, one term that often pops up is ADSS fiber.

Web: <https://bssoda.pl>

