

Types of Aerial Cables and Optical Cables



Overview

Learn what aerial fiber optic cable is, its main types including ADSS, Figure 8 and OPGW, core features, installation benefits and practical applications.

Key Takeaways

The main types of aerial optical cables are ADSS, Figure 8, and OPGW, each designed for specific installation and environmental conditions.

Overview of Aerial Optical Cables

Aerial optical cables are designed for overhead installation, suspended between utility poles, towers, or other supports. They are widely used in urban, rural, and mountainous areas where underground cabling is difficult or costly. These cables must withstand wind, ice, UV radiation, extreme temperatures, and mechanical tension while maintaining stable optical signal transmission.

They support both single-mode and multi-mode fibers, with single-mode being predominant for long-distance, high-bandwidth communication. Classification by Installation and Structure Aerial cables are primarily divided into self-supporting and catenary (suspension) types: Catenary Type: Suspended on a messenger wire that carries the tension, suitable when an existing support wire is available.

Self-

Supporting Type: The cable itself carries the tension, allowing long spans between poles without additional support.



Common Types of Self-

Supporting Aerial Cables
ADSS (All-Dielectric Self-Supporting) Made entirely of non-metallic materials, providing electrical insulation. Can be installed near high-voltage power lines without risk of electrical interference. Features: lightweight, high tensile strength, resistant to lightning and electromagnetic interference.

Applications: overhead high-voltage transmission systems, long-span installations, and areas prone to lightning strikes. **Figure 8 Cable** Named for its cross-sectional shape resembling the number 8, with a messenger wire integrated alongside the fiber core. Features: high mechanical strength, water resistance, UV resistance.

Variants include: GYTC8S: Fibers in corrugated steel pipes for mechanical protection. GYXTC8Y: Loose tube design, water-blocking and waterproof. GYXTC8S: Combines steel tube protection with loose tube water-repelling properties.

Applications: general overhead fiber deployment, long spans, and areas requiring robust mechanical protection.

OPG

W (Optical Ground Wire) An all-metal cable that combines optical fibers with grounding functionality. Protects power lines from lightning while providing a high-speed fiber backbone. **Applications:** high-voltage transmission lines, smart grid communication, and dual-purpose power and data transmission.

Advantages and Considerations

Advantages: Lower construction cost than underground cables, faster deployment, flexible terrain adaptation, and suitability for long-distance spans. **Considerations:** Exposure to environmental hazards, potential visual impact, and the need for regular maintenance. These aerial optical cable types are essential for modern telecom networks, power grid communication, and rural broadband deployment, offering a balance of mechanical strength, environmental resistance, and optical performance.

Article Content

What Is Aerial Fiber Optic Cable? Types, Features & Applications

Learn what aerial fiber optic cable is, its main types including ADSS, Figure 8 and OPGW, core features, installation benefits and practical applications. Weunion provides high-quality aerial

What is Aerial Fiber Optic Cable and Types

This post provides a detailed introduction to aerial optical cables, their types, features, and several popular Gcabling aerial fiber cables.

Aerial Fiber Optic Cable – Types & Installation Tips

Discover aerial fiber optic cables including ADSS, Figure-8, and OPGW types. Learn key advantages and expert installation tips for reliable

Aerial Fiber Cable Installation: Types, Hardware

Learn the key types of aerial fiber cables, essential pole hardware, and field-safe installation practices to ensure reliable overhead fiber deployment.

Fiber Optic Cable Types: A Complete Guide

Here's everything you need to know about the various fiber optic cable types, what makes them so useful, and what type of fiber optic cables you want

Types of Aerial Fiber Optic Cable

OPPC cable is an aerial fiber optic cable in which the fiber optic unit is combined with the phase conductors, having a double function of phase line and communication. Mainly used in suburban

Aerial Fiber Optic Cable Guide

Types of Aerial Fiber Cables. There are two main types of Aerial Fiber Cables you should know about: These feature all-dielectric construction,

Types Of Optical Fiber Cable: Duct, Aerial, Armoured & Unarmoured ...

“Optical fiber cable” covers a family of designs that differ in tube structure, fibre count, protection and how they're installed. Picking the right type controls both performance and cost.

Aerial Fibre Optic Cable Types, Installation Guide

Aerial fibre optic cable is a fibre optic cable that is hung on a pole and is required to be able to adapt to various natural environments. Aerial optical fibre cables can

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Aerial cables are suspended from poles or pylons or mounted on buildings. Some are self-supporting, requiring no separate messenger wire between poles to

The Ultimate Guide to Fiber Optic Cables – Types, Standards, and ...

Discover how to choose the right fiber optic cables for your network. Learn about fiber types, cable constructions, connectors, and industry standards — plus expert recommendations from

Fiber Optic Cable Types: Single-Mode, Multimode, and

Aerial fiber optic networks rely on robust components to withstand harsh environmental conditions, and among the most critical is the ADSS cable

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Different Types and Specifications of ADSS... | ABPTTEL

Abptel ADSS Single or Double Jacket When it comes to outdoor fiber optic communication, ADSS 1 (Aerial Dielectric Self-Supporting) fiber optic cables stand out for their

Overhead Fiber Optic Cable Installation: Requirements & 2 Key Types

In the realm of optical fiber deployment, overhead installation remains a critical method for rapid and cost-effective network expansion. As a leading provider of fiber optic solutions, we

Aerial Fiber Optic Cable Installation Guide: Hardware Requirements ...

Many different methods are used for cable installation. These include pulling, blowing, and pushing into ducts, direct burial, and aerial installation. In this article, Bonelinks will give you an

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10 Types of Fiber Optic Cable Explained: Selection

Explore the top 10 fiber optic cable types for 400G/800G networks. From ADSS to MPO, learn technical specs, applications, and how to choose the right fiber for

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