Method for binding optical cables to communication poles

Overview

Deploying fiber above ground on poles or towers removes the need for underground digging and is particularly useful when the ground is uneven, rocky or both.

Key Takeaways

Optical fiber cables can be safely and efficiently hung on communication poles using proper cable types, hardware, tensioning, and safety procedures. Cable Types and SelectionADSS (All-Dielectric Self-Supporting): Non-metallic, carries its own weight, suitable near power lines due to electrical isolation, requires careful attention to tension and sag. Figure-8 / Self-Supporting: Integrated steel messenger in a figure-eight cross-section, simple to hang, rated for specific span lengths, combines messenger and fiber in one jacket.

Lashed Cables: Fiber cable lashed to a pre-installed messenger strand, flexible for adding fibers to existing networks, requires proper lash hardware and spacing to avoid damage.

Installation Planning

Survey the route, check ground conditions, and obtain necessary permits from local authorities. Determine splice points and slack storage locations; ensure access for vehicles like splice trucks. Ensure pole readiness and coordination with other utilities if sharing poles.

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Hardware and Mounting

Use messenger wires or integrated steel strands to support the cable. Secure cables with lashings, clamps, or cable ties; avoid loose hanging sections. Splice closures must be attached to poles with service loops respecting the cable's minimum bend radius.

Overlashing requires consideration of existing cable load, span tension, and sag.

Sag and Tension

Analyze each span for cable weight, messenger size, and required tension. Sag should generally be less than 2% of span length, and tension less than 30% of cable minimum breaking strength. Maintain sufficient height above ground to clear traffic, trees, and other obstacles.

Pole Spacing

Urban areas: 25–40 meters (concrete poles, 10–12 m height)Suburban/rural: 40–50 meters (wooden poles, 12–15 m height)Extreme environments: up to 67 meters with reinforced poles Safety ConsiderationsPersonnel must use personal protective equipment: safety boots, harnesses, body belts, and safety straps. Avoid contact with electrical lines unless qualified; ADSS cables are an exception for power space installation. Do not exceed cable's minimum bend radius or apply excessive pulling force.

Ensure no service loops or slack cables are left hanging unattended.

Environmental Considerations

Cables must withstand wind, ice, UV exposure, and vibration. Polyethylene jackets with carbon black are preferred for UV protection. Maintain clearance from trees, buildings, and other obstructions; adjust for local weather conditions.

By following these guidelines, optical fiber cables can be safely and efficiently installed on communication poles, ensuring long-term reliability and compliance with industry standards.

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Article Content

The FOA Reference For Fiber Optics -Outside Plant Construction

Deploying fiber above ground on poles or towers removes the need for underground digging and is particularly useful when the ground is uneven, rocky or both. Aerial installation is generally much less

Installation of Corning Optical Communications Self-Supporting

It incorporates both a steel messenger and the core of a standard optical fiber cable into a single jacket of figure-eight cross-section. The combination of strand and optical fiber into a single cable allows

Optimizing the Fiber Optic Cable Binding Process with Advanced ...

Applying binder yarns with low and constant tension at high speed sets high demands to the quality of the equipment and the binder yarn material. To achieve optimum binding process

Overhead Fiber Optic Cable Installation: Requirements & 2 Key Types

Overhead fiber optic cable are designed to be suspended from utility poles or dedicated structures, leveraging existing aerial infrastructure to minimize construction costs.

Aerial Fiber Cable Placing Methods copy

Aerial optical cable is suspended in the air from poles and/or support structures. Most often it is supported between poles by being lashed to a wire rope messenger strand with a small gauge wire.

FlexNAP System Cable Assembly Placing Lashed Aerial

This procedure outlines the use of both dedicated messengers (a strand installed solely for the fiber optic cable), and “overlashing” installations in which a fiber optic cable is lashed to a copper or fiber

Aerial Fiber Deployment: Messenger Strand and Lashing Wire

Next a crew comes to install the messenger strand. If the strand is in the power space, it must be bonded at every other pole. After the strand is installed, a separate crew comes back through with

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All loops of cable must be secured to a pole at the end of the span. Excess cable awaiting installation may be secured at poles for short periods of time only. Overlashing must consider the current cable

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Overhead Fiber Optic Cable Installation Method and Requirement

This document discusses overhead fiber optic cables, which are used for long-distance communications and installed on poles using existing infrastructure; this method reduces construction costs and time.

Aerial Fiber Optic Cable Overview and Installation Guide

The scene of aerial cables hanging in the pole is ubiquitous in our daily lives. Unlike other common fiber optic cables, this kind of optical cable is designed to adjust to the harsh outdoor

Aerial Fiber Optic Cable Installation Standards

Aerial Fiber Optic Cable Installation Standards This document provides technical specifications for the aerial installation of fiber optic cable (FOC) networks. It outlines PLDT standards for pole line

Installation of Corning Optical Communications Self-Supporting

1. General Corning Optical Communications self-supporting (figure-8) optical fiber cable greatly simplifies the task of placing fiber optic cable on an aerial plant. It incorporates both a steel

Aerial Fiber Optic Cable – Types & Installation Tips

Overview Aerial fiber optic cables are commonly used in optical communications and are now so common that they can be seen on utility poles all around you. Because aerial cables are

Overhead Fiber Optic Cable: Installation Method and

Overhead fiber optic cable is suitable for long-distance lines and dedicated network optical cable lines or some local special sections. It provides

Optical attached cable

Optical attached cable (OPAC) is a type of fibre-optic cable that is installed by being attached to a host conductor along overhead power lines. The attachment

Aerial Fiber Cable Placing Methods copy

ABSTRACT An aerial cable is an insulated cable usually containing all fibres required for a telecommunication line, which is suspended between utility poles or electricity pylons. Aerial optical

Aerial Fiber-Optic Installation: A Key Method in Modern

This approach involves installing fiber-optic cables on existing utility poles, transmission lines, or other overhead infrastructure. Its popularity comes

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No service loops or cables awaiting further installation may be left hanging from the span. All loops of cable must be secured to a pole at the end of the span. Excess

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