

Article Overview

A power fiber optic cable suspension strand, or messenger strand, supports aerial fiber optic cables while protecting the optical fibers from mechanical stress and environmental damage.

Structure and Components

A typical suspension strand system includes:

- o Messenger Strand (Suspension Strand): A strong, pre-formed strand, often made of aluminum or steel, that carries the weight of the fiber optic cable between poles or towers, providing structural support and tension relief .
- o Suspension Clamps: These clamps secure the cable to the messenger strand and include components such as an aluminum alloy clamp plate, rubber clamping blocks, U-shaped or right-angle hanging rings, bolts, nuts, and grounding wires . The rubber blocks reduce compression and bending stresses on the cable.
- o Mechanical Suspensions: Lightweight assemblies designed to support vertical, transverse, and longitudinal loads, as well as angle pulls, without damaging the cable strands or affecting optical fiber performance. Breakaway bolts ensure proper torque during installation .
- o Structural Reinforcing Rods (SRR): Used in some suspension systems to reduce compression and bending stresses on optical fibers. SRRs are typically non-reusable, while other hardware components can be reused if in good condition .

Function and Application

Suspension strands are primarily used in overhead fiber optic installations to:

- o Support the cable along straight or angled spans between poles or towers.
- o Protect optical fibers from excessive tensile forces, bending, and environmental stress.
- o Facilitate grounding and secure attachment to pole line hardware.
- o Allow for safe installation and maintenance while minimizing the risk of fiber damage .

Installation Considerations

- o Cable Bending Radius: Maintain a minimum bending radius of $15xD$ (no load) or $20xD$ (under load), where D is the cable diameter, to prevent fiber breakage .
- o Tensile Load: Do not exceed the cable's maximum tensile strength during installation.
- o Hardware Alignment: Ensure clamps, bolts, and hangers are properly aligned and torqued to avoid stress points.



Power Fiber Optic Cable Suspension Strand

o Slack and Splice Lengths: Include extra cable length for splicing and maintenance, as determined by the OSP engineer .

Summary

Power fiber optic cable suspension strands, combined with clamps and mechanical suspension hardware, provide a robust, reliable support system for aerial fiber optic cables. They ensure the optical fibers remain protected from mechanical stress, environmental exposure, and installation forces, while allowing for efficient and safe deployment along utility poles and transmission towers .

Aluminum ADSS Suspension Clamp Installation 2:25 The Hubbell Aluminum ADSS Suspension Clamp is a heavy duty, versatile,

1.2 As with many communication cables, FlexNap System fiber optic cables used in aerial applications frequently rely upon stranded

to observe the align-ment of a cable around a corner block), if he or she stays cle when climbing or descending a pole or ladder. Do

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

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

Filled fiber optic cables may also be constructed using cables containing an integrated suspension strand. Filled fiber optic aerial

Fiber optic cables for outdoor applications are engineered to withstand the more demanding conditions seen outside, from

Aerial Cable Placement Aerial Cable Placement At UES Construction, we specialize in aerial cable placement - an efficient method

Aerial optical cable is suspended in the air from poles and/or support structures. Most often it is supported between poles by being

Pole line construction and strand installation are not covered in this document. A working familiarity with

aerial cable requirements,

Once strands are placed, fibers can be attached up to the maximum load allowed by the system. There are numerous options for

3.1 Guys for poles supporting lashed filled copper or fiber optic cables at various corner angles and deadends for the three commonly

Overhead fiber optic cable should adopt a galvanized steel strand with the specification of 7/2.2mm as the

AFL's Mechanical Suspension installs easily while supporting vertical, transverse, longitudinal unbalanced loads and angle pulls

Which Aerial Cable is Right for You? Which Aerial Cable is Right for You? The power industry has traditionally defaulted to the tried

General .1 . This procedure provides general information for installing all Corning Optical Communications Solo® ADSS All-Dielectric

Web: <https://www.kremgroup.co.za>

