Tools are needed for aerial fiber optic cable installation

Overview

The FOA Reference For Fiber Optics -Outside Plant ConstructionClosures attached to the messenger and their cable (s) must be securely attached and service.

Key Takeaways

Aerial fiber optic cable installation requires specialized tools like cable lashers, suspension clamps, and messenger wires, used systematically to secure, tension, and support cables safely on poles.

Planning and Preparation

Before using any tools, conduct a detailed route survey to document pole locations, span lengths, obstacles, and clearances from power lines (minimum 40 inches from 7. 2 kV lines) ( ). Obtain necessary permits, property agreements, and utility approvals.

Ensure all personnel have personal protective equipment including hard hats, gloves, safety boots, and harnesses ( ).

Essential Tools and Their Use

Cable Lashers: Used to secure fiber cables to a messenger strand. Operate the lasher to wrap stainless steel wire around the cable and strand, ensuring proper tension and spacing. For overlashing, use lashers with a strand roller or clutch release to prevent cable damage ( ).

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Messenger Wire / Suspension Strand: Provides structural support for lashed cables. Install first, ensuring it can handle wind and ice loads. Use a dynamometer to measure tension and maintain a maximum sag of 2% across spans ( ).

Dead-

End / Anchor Assemblies: Secure cable ends at poles. Use formed wire grips for long spans (>300 ft) and wedge anchor clamps for shorter spans. Reinforce dead-end poles with guy wires if spans exceed 400 ft or angles exceed 30° ( ).

Pole Hardware: Includes eyebolts, insulators, crossarms, and boards. Select hardware based on whether poles are shared with utilities and follow pole-loading guidelines ( ). Telescoping Poles and Blocks: Assist in lifting and guiding cables during installation, reducing manual strain and preventing cable damage ( ).

Fusion Splicers and Splice Closures: Used to join fiber ends at designated splice points. Ensure proper environmental protection with dome or horizontal closures ( ).

Installation Techniques

Mount Messenger Wire: Start at the strongest pole and work systematically. Maintain calculated tension and sag limits. Temporary Supports: Place every 150 ft on long spans to prevent excessive sag.

Lashing the Cable: Use the lasher to attach the fiber to the messenger strand, following manufacturer spacing guidelines to avoid chafing. Splicing: Perform fiber splicing at pre-selected locations using fusion splicers and closures. Inspection: Check tension, sag, and hardware integrity before finalizing installation ( ).

Safety Considerations

Always maintain 3-point contact when climbing ladders or poles. Use safety harnesses secured to the pole at working height. Avoid climbing intermediate poles under tensioned spans.

Ensure poles are properly flagged and secured during transport and installation ( ). By following these steps and using the tools correctly, aerial fiber optic cable installation can be performed efficiently, safely, and with minimal risk of cable damage or service disruption.

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Article Content

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FOA Standard For Installing Fiber Optic Cable Plants

Installation is similar to installing a messenger wire except it also includes a fiber optic cable that requires careful handling like any other fiber optic cable.

A Step-by-Step Guide to Fiber Optic Cable Installation

Before beginning any fiber optic cable installation, technicians need the right tools and safety measures. Essential tools include cable cutters, strippers, cleavers, fusion splicers, optical

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Install 06 Issue 3 Aerial Cable Installation Practices

Individual company practices for placing aerial fiber optic cable should supersede any conflicting instructions in this document when they do not exceed the cable''s optical and mechanical

Aerial Cable Placing Procedure

The methods used to place aerial fiber optic cables are similar to those used to place copper cable. Optical cable is a high capacity transport medium that is sensitive to excessive tensile force, tight

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The following items are key considerations in preparation for installing the fiber optic cable when the construction is ready for cable placement. Optical fiber cable

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