Straight-line tension of optical cable

Overview

Most fiber optic cable is designed to conservatively allow a maximum of 1800 N-4500 N (400 lbf-1000 lbf) of pulling tension during instal- lation. On the other hand, it is desirable to install the longest lengths of uninterrupted cable possible. A dielectric aramid yarn is used, typically by stranding it around the optical fiber cable core, providing the necessary tensile strength for aerial applications. For example, a heavy-duty armored outside plant cable handles much higher tension than a delicate. For cable equipped with pulling eye or pulling bolt, the formula shown below is used to calculate the maximum allowable pulling tension on the cable for the entire routing. The maximum length of cable that can safely be pulled through conduit is calculated as shown below. SpanMaster software takes the user through a logical step-by-step process of information entry and produces sag. While excessive pulling tension can have a negative impact on the integrity of a cable, the Side Wall Pressure (SWP) is a more important factor in cable pulling damages.

Article Content

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Fittings for ADSS optical cable

The role of tension fittings: tension fittings are mainly installed on terminal towers and tension towers. For special line sections, tension fittings are used to form a straight line of tension ...

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Calculating Maximum Pulling Tension for Fiber Cable

Calculating maximum pulling tension for fiber cable is a nonnegotiable part of the fiber network contract and it''s imperative to follow the equations.

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Prediction and Minimization of Fiber Optic Cable Pulling Tensions

Specialty products and installation procedures have been developed following field and laboratory researchon cable tension as the fiber optic cable is pulled into conduit. Use of these products and ...

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Fiber Optic Cable Installation and Handling Instructions

The information contained in this manual should serve as a guide to proper handling, installing, testing, and for troubleshooting problems with fiber optic cables.

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GENERAL INFORMATION

During the installation of fiber optic cable, the use of a pulling grip that attaches to the cable and to a breakaway swivel that is rated at the proper pulling tension of the cable is highly recommended.

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Cable Loads

The calculator below can be used for cables with inclined chords and uniformly loads. The calculator is based on an iterative algorithm where the parable shaped cable is adapted to span L, height h1 and ...

Jul 14, 2026

CABLE PULL TENSION CALCULATIONS

While excessive pulling tension can have a negative impact on the integrity of a cable, the Side Wall Pressure (SWP) is a more important factor in cable pulling damages.

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SpanMaster Cable Sag and Tension Calculation Software

SpanMaster software takes users through a logical step-by-step process of information entry and produces sag and tension results for any cable span.

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Calculating cable pulling tensions

For cable equipped with pulling eye or pulling bolt, the formula shown below is used to calculate the maximum allowable pulling tension on the cable for the entire routing.

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AEN 15, Revision 5

Span length - The straight line-of-sight distance between poles. rength member(s). This value is affected by the amount of cable sag and by the mechanical and env onmental loading. Tension is inversely ...

Jun 10, 2026

Sag and Tension

This is a combination of the installation tension required to achieve a given sag, the weight of the cable, the weight of any ice loading on the cable, and the wind pressure felt by the cable, if any.

Contact Us

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