Fiber Optic Cable Armor Connection Method



Overview

Explore QSFPTEK''s comprehensive guide to armored fiber optic cables, including their uses, types, applications, and installation tips.

Key Takeaways

Armored fiber optic cables require careful armor removal, proper pulling techniques, and secure attachment to connectors or pulling elements to ensure reliable performance and mechanical protection.

Understanding Armored Fiber Cables

Armored fiber optic cables feature a protective layer—typically steel, aluminum, or Kevlar—between the optical fibers and the outer jacket, designed to resist crushing, bending, moisture, rodents, and mechanical stress. There are two main types: interlocked armor, which is flexible and often used in conduits, and metallic or corrugated armor, which provides higher crush resistance. The inner fiber is usually not bonded to the armor, so proper connection and pulling methods are essential to prevent separation.

Armor Removal and Preparation

Bend and Separate: Bend the cable about 10 inches from the end and apply pressure to loosen the armor coils. Pliers or specialized cutting tools may be used if manual force is insufficient. Twist and Release: Grip the cable on both sides of the cut and twist the armor counter-clockwise until it separates from the inner fiber.

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Trim Exposed Armor: Use side cutters to remove sharp edges and any residual metal or plastic strips for a clean finish. Remove Outer Jacket: If present, carefully strip the outer jacket without damaging the inner fibers.

Connection and Pulling Methods

Kellems Grip or Cable Pulling Tool: For interlocked armored cables, attach a pulling grip to both the inner cable and the armor to distribute tensile forces evenly. This prevents the armor from separating during installation. Tensile Load Consideration: Always check the cable's rated pull strength.

Exceeding the armor's pull limit can cause separation or fiber damage. Industrial armored cables may support higher tensile loads, but dynamic pulling should remain within manufacturer specifications. Bend Radius Compliance: Maintain the minimum bend radius during routing to avoid fiber breakage.

For single-mode armored cables, typical bend radii are 10D (dynamic) and 5D (static), while multimode cables may require 20D/10D. Grounding: Metal-armored cables may require grounding to prevent electrical hazards, especially in outdoor or industrial installations. Ensure compliance with local electrical codes.

Final Steps

After armor removal and proper pulling, proceed with standard fiber termination procedures: cleaning, cleaving, and connector attachment. Test the fiber for continuity, insertion loss, and return loss to ensure signal integrity. Proper handling and connection of armored fiber cables ensure durability, reliability, and long-term performance in harsh environments.

By following these steps, armored fiber optic cables can be safely installed and connected, maintaining both mechanical protection and optical performance.

Article Content

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This guide provides a complete, step-by-step installation process for armored fiber optic cords, while highlighting their differences from standard fiber

Armored Fiber Cable Guide

Explore QSFPTEK''s comprehensive guide to armored fiber optic cables, including their uses, types, applications, and installation tips. Learn how armored fiber cables enhance durability

How to Install Armored Fiber Optic Cables: A Step-by-Step Guide

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Learn how to install armored fiber optic cables correctly. This guide covers key precautions, installation steps, and FAQs to ensure reliable performance.

What Is Armored Fiber Cable?

To meet different deployment needs, armored fiber optic cables are available in a variety of types based on armor structure, installation method, and

Understand Armored Fiber Cables Working Principle

Armored fiber optic cable possesses several layers to secure the cable. The plastic outer jacket provides protection against rodents, abrasion, and

Small Form-factor Pluggable

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable (SFP) is a compact, hot-pluggable network interface module format used for

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Best practices for bonding and grounding armored fiber cable

Depending on the type of armor, bonding and grounding may be essential or unnecessary. By Sara Chase, Corning Cable Systems Armored fiber-optic cables are often installed in a network

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Indoor Fiber Optic Bonding & Grounding

AEN 140, Revision: 1 This Applications Engineering Note (AE Note) discusses conventional bonding and grounding practices for conductive fiber optic cable and hardware installations within the scope of the

Understand Armored Fiber Cables Working Principle

Armored Fiber Cables have excellent stability and reliability, supporting additional protection to prevent loss of flexibility functionality of fiber

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Armored Fiber Optic Cords Installing Guide This guide provides a complete installation process for armored fiber optic cords, explaining each step from routing and pulling to stripping,

What Is Armored Fiber Cable?

Discover armored fiber optic cables, their multi-layered protective structure, key benefits, types, and how they differ from non-armored fiber cables for indoor and outdoor applications.

Cable Preparation for Single Armor Outside Plant (OSP) Fiber Optic Cables

This section details the methods for entering an armored fiber optic cable mid-sheath. To access the fibers in an armored cable at mid-sheath, first locate the appropriate area of the cable.

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Application Note

Carefully insert the bottom plate of the bonding clamp per manufacturer''s instructions between the armor and inner cable jacket. Use the mallet to gently insert the bottom plate under the armor. Make sure

What Is Armored Fiber Cable?

What Is Armored Fiber Optic Cable? Armored fiber optic cable is a type of fiber optic cable built with an extra protective layer around the optical fiber. This armor layer, typically made of

Interlocked Armored Cables

Interlock cables are similar to standard fiber optic cables but with an enhanced crush and impact resistance. The interlock armor is ideal for applications where the end user requires the fiber optic

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