Is the fiber optic cable armored

Overview

Armored fiber optic cable is a type of fiber optic cable that has an outer jacket made of metal or plastic armor.

Key Takeaways

Some fiber optic cables are armored, featuring a protective layer to safeguard the delicate optical fibers from physical damage, environmental hazards, and rodent attacks.What Are Armored Fiber Optic Cables?

Armored fiber optic cables are designed with an additional protective layer over the standard fiber core to enhance durability and mechanical strength. The armor is typically made of stainless steel, aluminum, or other metals, providing resistance against crushing, bending, abrasion, and rodent damage while maintaining high transmission performance . This makes them suitable for harsh environments, including underground conduits, direct burial, industrial sites, and outdoor installations .

Structure of Armored Cables

A typical armored fiber optic cable has a multi-layered construction:

• Outer Jacket: Made of polyethylene (PE), polyvinyl chloride (PVC), or low smoke zero halogen (LSZH) materials, it protects against weathering, UV radiation, and chemicals .

• Armor Layer: The metallic layer, such as stainless steel tubing, interlocking metal tape, or steel wire braid, shields the fibers from mechanical stress, crushing, and rodent attacks .

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• Strength Members: Materials like aramid fibers (e.g., Kevlar) or fiberglass rods provide tensile strength and prevent elongation .

• Tight-Tube Fiber: Each optical fiber is coated with a buffer layer for additional mechanical protection and flame resistance .

Types of Armor

Armored cables come in various forms depending on the application:

• Square-lock Armor: Offers flexibility and bending resistance, suitable for frequently moved cables .

• Interlock Armor: Provides high tensile strength and crush resistance, ideal for outdoor and industrial installations .

• Spiral Steel Armor: Helically wound steel strips for flexibility and rodent protection .

• Steel Wire Armor: Multiple steel wires wound around the cable for maximum crush resistance, often used underground .

Armored vs Non-Armored Cables

While non-armored cables consist of the fiber core, buffer coating, strength members, and outer jacket, they lack the metallic armor layer, making them lighter, more flexible, and easier to install indoors or in protected environments . Armored cables, on the other hand, are essential in environments where physical damage is likely, preventing costly network outages and repairs .

Applications

Armored fiber optic cables are widely used in:

• Outdoor and industrial environments

• Direct burial and underground conduits

• High-traffic areas prone to mechanical stress

• Data centers and medical facilities requiring extra protection In summary, fiber optic cables can be armored, and the armor provides critical protection in harsh or high-risk environments, ensuring network reliability and longevity .

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The armored fiber optic is a fiber optic cable equipped with one or more layers of armor. This type of optical fiber ensures that the

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The armored fiber optic cable is to wrap a layer of protective “armor” on the outside of the optical fiber, which is mainly

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An armored optical cable is a special optical cable with a protective stainless steel armor tube wrapped around the

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