

RIVO MULTITRADE OPTICAL SYSTEMS

Function of Steel Tape in Armored Optical Cables



Overview

What Is Steel Tape Armored Fiber Optic Cable?

Unlike standard outdoor cables that rely primarily on jacket thickness and water-blocking materials, STA Corru.

Key Takeaways

Steel tape in armored optical cables provides mechanical protection, rodent resistance, and enhanced crush and impact durability for underground and high-stress installations. Mechanical Protection

Steel tape armor (STA) is a corrugated metal layer wrapped around the cable core, forming a robust physical barrier that protects the delicate optical fibers inside from external mechanical forces. This includes soil pressure, accidental digging, and heavy vehicle loads, which can otherwise cause microbending or fiber breakage, leading to signal loss and network failure (Honelinks.com), . The corrugated design allows the tape to maintain flexibility while distributing compressive forces, ensuring the cable retains its structural integrity over long-term underground deployment (Fomsn.com), .

Rodent and Pest Resistance



Underground fiber optic cables are vulnerable to rodent gnawing, which can damage standard polyethylene jackets. The steel tape layer acts as a mechanical deterrent, preventing rodents and termites from reaching the fiber core, thereby reducing the risk of service interruptions in rural or direct burial installations (Honelinks.com), .

Enhanced Durability and Stability

The steel tape also improves dimensional stability, reducing deformation caused by soil shifting or compaction over time. This ensures that the optical fibers maintain proper alignment, minimizing attenuation and microbending losses. Compared to non-armored cables, STA cables offer higher crush resistance and impact tolerance, making them suitable for direct burial and campus backbone environments where mechanical stress is significant (Leviton.com), .

Material and Construction

Steel tape used in fiber optic cables can be stainless steel or electrolytically chrome-coated steel (ECCS), often coated with a thin polymer layer to prevent corrosion. The tape is longitudinally wrapped around the inner sheath, sometimes bonded for added rigidity, and corrugated to provide both strength and flexibility (Fomson.com), . This construction allows STA cables to be installed in ducts or directly buried without compromising fiber protection.

Comparison with Other Armoring Types

Unlike steel wire armor (SWA), which is heavier and used in high-tension or submarine applications, steel tape armor is optimized for terrestrial underground networks, offering a balance between protection, flexibility, and cost (Honelinks.com), . Corrugated steel tape is particularly effective in environments with vibration, soil movement, or moderate mechanical stress, while maintaining manageable installation flexibility.

Summary

In summary, the steel tape in armored optical cables serves as a critical protective layer that safeguards fibers from mechanical damage, rodent attacks, and environmental stress. Its corrugated design ensures flexibility and long-term stability, making STA cables ideal for direct burial, rural broadband, and campus backbone deployments where durability and reliability are essential (Honelinks.com), .

Article Content

What is armored fiber optic cable?

Steel Tape Armoring (e.g., Double-sided coated corrugated steel tape): Typically used for outdoor direct-buried or

ARMOR-LITE Unitube Single Jacket Steel Tape Armored Fibre

Features & Benefits Available up to 24 fibre count in either single-mode or multi-mode optical fibres Steel tape adds to crush

Steel Tape Armoured Cable: The Ultimate Guide to Installation ...

This specialized cable type features a helical steel tape armour layer that shields inner conductors from crushing forces, rodent

Steel Tape Armoured Cable: The Ultimate Guide to Installation ...

The steel tape armour provides exceptional crush resistance and rodent protection, ensuring longevity in harsh

Steel Tape Armored fiber optic cable China

Besides resistance to compression and biting, the steel tape layer also enhances the overall impact and shear resistance of the

InternetCableData-corrugated steel tape armoured cable en

Prysmian Group Direct buried cables Draka installation Optical cable for direct buried Cable Design Central Strength Member (CSM).

Galvanized Steel Tape Armored Fiber Optic Cables

Galvanized Steel Tape Armored Fiber Optic Cables General Information: Direct buried and/or duct type installation with highly

ARMOR-LITE Unitube Single Jacket Steel Tape Armored Fibre

Product Details Sterlite Tech™ ARMOR-LITE® Unitube Single Jacket Steel Tape Armored Cables is a central tube cable using

What is Armored Fiber Optic Cable?

Corrugated armor is a coated steel tape folded around the cable longitudinally. It is found in outdoor cables and offers

Armoured Cable: Types, Uses, SWA vs STA & Construction

The structure of the armour guarantees maximum resistance to crushing, cutting, and wear. Read detailed guide on:

What Is the Purpose of Cable Armoring?

ONE WORLD Specializes in High-Quality Cable Raw Materials We offer a full range of armoring materials—including steel tape,

Study on contribution of steel tape in tensile performance of steel ...

However, for steel tape armored optic fiber cable, the contribution of steel tape should not be ignored. If we can find the way how to

Dual Sheath Multi Loose Steel Tape Armoured (PSP)

Dual Sheath Multi Loose Steel Tape Armoured (PSP) 24 to 144 250um fibre dry core OM1, OM2, OM3, OM4 multimode or OS1 /OS2

Central Uni-Tube Steel Tape Light Armored Fiber Optic Cable

Technical Characteristics Description It is an outdoor application fiber optic cable with central uni-tube and light-armored with double

Aksh OptiFibre Ltd. :: Optical Fibre Cables::Smartcore Steel Armoured ...

The metallic cable is armoured with corrugated steel tape that provides good protection against rodents and allows the cable to

Steel Wire Armored vs Steel Tape Armored Fiber Optic Cable: Which ...

Choosing the wrong armor can increase installation costs and reduce cable lifespan. Compare steel wire armored and steel tape

Armored Fiber Optic Cable: Everything You Need to Know

An armored fiber optic cable is a specialized type of fiber optic cable that includes an extra layer of protection to shield

Loose Tube Steel Tape Armoured Fibre Optic Cable

CABLE STANDARDS 24 fibre uni-tube corrugated steel tape armoured cable for indoor or outdoor duct installation or direct burial

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