

What type of flame retardant should be added to optical fiber cables



Article Overview

LSZH (Low Smoke Zero Halogen) and OFNR/OFNP-rated jackets are the primary flame-retardant options for optical fiber cables, chosen based on installation environment and fire safety requirements.

Key Flame-Retardant Options

LSZH (Low Smoke Zero Halogen): LSZH jackets are made from halogen-free thermoplastic or thermoset compounds that provide excellent fire protection while producing minimal smoke and non-toxic gases during combustion. These cables are ideal for enclosed spaces, data centers, and areas with poor ventilation, where reducing smoke and toxicity is critical for personnel safety and equipment protection. LSZH materials also resist corrosion caused by acidic gases released in a fire.

OFNR (Optical Fiber Non-Conductive Riser): OFNR cables are designed for vertical riser shafts and floor-to-floor installations. They meet UL-1666 standards and are self-extinguishing within 5 meters of flame spread. OFNR jackets provide sufficient flame resistance for multi-floor buildings where the risk of large-scale fire is moderate, but they may produce more smoke than LSZH in a fire.

OFNP (Optical Fiber Non-Conductive Plenum): OFNP cables have the highest flame-retardant rating and are suitable for plenum spaces (air-handling areas). They are designed to self-extinguish quickly and emit minimal smoke and toxic gases, making them the safest choice for areas with high air circulation and strict fire codes. OFNP jackets are often used in data centers, commercial buildings, and critical infrastructure.

Selection Guidelines

Article Content

Fiber Cable Fire Ratings: Lszh, Pvc And Flame-Retardant Options ...

A cable claiming “halogen-free” should reference IEC 60754 test results or equivalent. Flame-retardant options beyond jacket

Development of flame retardant and fire-resistant optical cable based ...

Existing common optical cables is difficult to supply and remedy the existing communication drawback, especially in the event of fire.

Guide to Selecting Flame Retardant Fibers: Key Considerations & Top ...

Guide to Selecting Flame Retardant Fibers: Key Considerations & Top Solutions
Selecting flame-retardant (FR) fibers in industries

Choosing Fiber Cable Protection to Meet Fire Regulations

Advice on picking the best fiber cable protection against fire in the United States and Europe, balancing spread of fire against smoke

Fire Resistant Optic Fiber Cables|Fireproof Cables

3. XLPE/silicone rubber as insulation 4. LSZH/Flame retardant RPVC as sheath fireflex cables are offered in either single core,

Plenum vs. Riser Fiber Cable Jackets: What You Need to Know

Learn the key differences between plenum (OFNP) and riser (OFNR) fiber cable jackets, including fire safety, code compliance, and

What Are the Flame Retardant Materials Used in Cables?

What Are Flame Retardant Materials in Cables? Flame retardant materials are substances that are added to cables to slow down or

Indoor Fiber Optic Cables | Flame Retardant Indoor Cable Products

These indoor fiber optic cables are used exclusively within buildings and must have a flame-retardant cable jacket to fit this purpose.

Fiber Optic Cable Fire Resistance Ratings – Fosco Connect

This article describes the fire resistance ratings code from NEC for fiber optic cables. We carry a large inventory of all types of fiber

Fiber Optic Cable: Jacket & Fire Rating

The term "low-smoke zero-halogen" (LSZH) refers to a material used in the jacket of cables that is both flame retardant

Retardant Fiber

Generally, phosphorous-based flame retardant materials were created following this technique to make a fire-retardant fiber. It is

Considerations and Recommendations for Flame-Retardant Selection

1.Flame-Retardant Cable Classification Standards The flame-retardant standard system is divided into two main categories. The first

Flame-Retardant Design and Protection for Wire and Cable

Wire and cable are indispensable components in our daily life, and the fire safety of these materials is a major concern. The common

Flame-Retardant Cable vs. Fire-Rated/Resistive Cable

A flame-retardant cable is designed only to restrict the spread of a fire by inhibiting combustion. Fire-resistive cables maintain circuit

Fire resistant optic fibre cable_V4

OPTIC FIBRE CABLES In case of fire, the communication networks, emergency systems and other key equipment's are essential to

Fiber Cable Fire Ratings: Lszh, Pvc And Flame-Retardant Options ...

PVC can be formulated with flame retardants to meet certain vertical-burn or UL ratings, but when it burns it commonly produces

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