

Article Overview

The outer sheath of an optical cable protects the fibers from mechanical, environmental, and chemical damage, with parameters defined by material type, flame retardancy, UV and chemical resistance, and mechanical strength.

Sheath Material Types

- o LSZH (Low Smoke Zero Halogen): Made from halogen-free compounds, LSZH sheaths produce minimal smoke and no toxic gases during combustion, making them ideal for indoor installations, data centers, and areas with strict fire safety regulations . They are sensitive to mechanical stress during installation and require careful handling .
- o PVC (OFNR/OFNP): PVC sheaths are flame-retardant and self-extinguishing. OFNR (Riser-rated) PVC is suitable for vertical shafts and risers, while OFNP (Plenum-rated) PVC is used in air-handling spaces. PVC sheaths may release dense smoke and toxic gases when burning .
- o Armored Sheaths: These include steel wire or aluminum layers beneath the outer jacket to provide mechanical protection against crushing, rodent attacks, or harsh outdoor conditions . Armored cables are suitable for direct burial or industrial environments.

Mechanical and Environmental Parameters

- o UV and Weather Resistance: Outdoor sheaths are often black, UV-stabilized, and weather-resistant, capable of withstanding sunlight, rain, and temperature variations .
- o Chemical Resistance: Some sheaths resist exposure to diesel, mineral oils, and other fluids according to IEC60811-404 standards .
- o Tensile Strength and Flexibility: The sheath must allow safe handling during installation, including pulling through ducts, while maintaining the cable's bend radius and preventing fiber damage .
- o Water and Moisture Protection: Many cables include water-blocking materials or jelly inside the sheath to prevent water ingress, ensuring long-term reliability .

Marking and Identification

Outer sheaths are typically marked with the manufacturer, cable type, fiber count, and length intervals. Custom markings can be requested for specific projects .

Summary

The outer sheath of an optical cable is a critical component that ensures mechanical protection, environmental resistance, fire safety, and chemical durability. Selection depends on the installation environment: LSZH for

Parameters of Optical Cable Outer Sheath

indoor and data center use, PVC for risers and plenum spaces, and armored or UV-resistant sheaths for outdoor or industrial applications. Proper understanding of these parameters ensures long-term cable performance and compliance with safety standards .

Because of the low density, good air permeability, excellent insulation and UV resistance of PE fiber cable outer

Effective area (A_{eff}) is a parameter that is closely related to optical fibre non-linearities that will affect the transmission quality of the

Fiber optic cable is normally covered with a substantial outer plastic sheath in order to reduce abrasion and to provide the cable with

This article analyzes the causes of defects such as pores and pinholes in the sheath of cable products, and also

Introduction This Cable Jacket Selection Note is intended to provide the reader with an organized selection methodology when

The outer sheath is the outermost protective jacket of a cable, acting as the primary defense mechanism for the

PP A PP outer jacket is used optionally on top of a black MDPE sheath. This jacket gives the cable a hard surface. The PP jacket

Indoor fiber optic cables can be sheathed with PVC, and outdoor fiber optic cables can be

The outer sheath of the optical fiber cable is divided into different material types. The outer sheath of each material

XLPE (Cross-Linked Polyethylene) - provides a tough, moisture, chemical and weather resistant sheath material. Used mainly as an

Product Overview The Fiber Optic Patch Cords are available in various fiber classes and connector combinations to

For injection-molded cable products such as optical cables, surface defects are a common product quality problem.

What's the Difference between PVC, LSZH, OFNP, OFNR? When comparing fiber optics cables, there are a

lot of different

Discover the best fiber optic cable sheath for your MPO fiber optic cable assemblies from the fire rating, wear

Fiber-optic cable A TOSLINK optical fiber cable with a clear jacket. These cables are used mainly for digital

APPLICATION Optical cable for industrial environments. The cable is suitable for both indoor and outdoor installation. The outer

Web: <https://www.millstraining.co.za>

