Optical Cable Outer Sheath Parameter Table

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

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 .

Fiber Optic Cables Technical Catalogue FTTH Optic Fiber Micro Cable Sample Fiber Optic Micro Cable Optical Fiber Core

Tables 3 and 4 list prevailing implementations of Ethernet and Fibre Channel, respectively, with their corresponding wavelength of

14. SHEATH MARKER Primary coated single mode fiber, filled, loose tubes, assembled around the Central Strength Member

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

Fiber Stripping The outer sheath of fiber cables can be removed using electrical cable stripping tools, and scissors or a razor blade

The objective of this document is to give an understanding of an optical cable datasheet. In this document, the interaction between

Hot foil marking every meter on cable outer sheath. : Week - Year - Number of fibres - Type of fibres - Manufacturer + metric

This specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. It

A fiber-optic cable, also known as an optical-fiber cable, is an assembly similar to an electrical cable but containing one or more

Sheath Where a cable has both an inner and outer sheath, the class of sheathing material shall be identical (except on FS types).

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The standard optical cable structure is shown in the following table, other structure and fibre count are also available according to

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Cabling The concentric structure is used to manufacture cables with high mechanical, optical and environmental performance.

This best practices document is a step-by-step guide for end and midspan access of loose tube optical cable, including sheath

Packaging and Drum 5.1 Cable Sheath Marking Unless otherwise specified, the cable sheath marking shall be as follows: Color:

The outer sheath is made of 0.150 mm ECCS tape armor plus a 1.8 mm HDPE sheath. ECCS steel tape armor is a combination of

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