ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Silicon Core Tube Optical Cable



Overview

Silicon core tube for optical cable The silicon core tube for the optical cable comprises an outer tube, a mixed support, a movable support, a middle layer.

Key Takeaways

Silicon core tubes are high-performance HDPE conduits with a low-friction silicone inner layer, designed for smooth, long-distance optical cable installation.Structure and Materials

Silicon core tubes are typically co-extruded composite pipes made from high-density polyethylene (HDPE) with a silicone or siliceous inner layer. The inner silicone layer acts as a solid lubricant, providing an ultra-low friction surface that allows optical cables to be blown or pulled through the tube repeatedly without damage ( ). Some designs also include additives like active silicone oil, dimethyl silicone oil, antioxidants, and initiating agents to enhance durability, heat resistance, and long-term performance ( ). The typical composition of the silicone layer includes:

• HDPE: 95–100%

• Silicone: 2.5–3.5%

• Active silicone oil: 5–8%

• Dimethyl silicone oil: 6–10%

• Initiating agent: 0.5–1.5%

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• Antioxidant: 1.5–2.5% ( )

Key Features

• Low Friction Coefficient: The silicone core reduces friction, enabling smooth cable installation and repeated extraction ( ).

• Durability: Resistant to aging, UV, chemical corrosion, and rodent damage, with a service life of up to 50–100 years ( ).

• Mechanical Strength: HDPE outer layer provides structural integrity, impact resistance, and flexibility for various terrains ( ).

• Temperature Range: Suitable for extreme conditions, typically from -40°C to 100°C ( ).

• Waterproof and Sealed: Prevents moisture ingress, ensuring cable protection in underground or outdoor installations ( ).

• Bend Radius: Can be bent according to terrain without special treatment, often with a minimum radius of 10 times the outer diameter ( ).

Applications

Silicon core tubes are widely used in:

• Fiber optic communication networks for highways, railways, and urban infrastructure ( ).

• Telecom and electrical lines, including cable television and public information networks ( ).

• Underground conduit systems, branch networks, and inter-city communication links ( ).

Installation Advantages

• Cable Blowing or Pulling: The low-friction inner layer allows optical cables to be installed using pressurized air or rope techniques without damaging fibers ( ).

• Fast Construction: Co-extrusion and smooth inner walls reduce labor intensity and project costs ( ).

• Repeated Cable Extraction: Optical cables can be removed and reinstalled multiple times without peeling or wear ( ).

Specifications

• Diameter Range: DN63–800mm (2–32 inches) ( )

• Pressure Classes: SDR6–SDR41, PN4–PN32 depending on project requirements ( )

• Lengths: Straight sections (5.8–11.9m) or coils (100–200m) ( ) Silicon core tubes represent a modern, reliable solution for optical cable protection, combining mechanical strength, low friction, and long-term durability, making them ideal for large-scale fiber optic and communication infrastructure projects.

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Article Content

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Communication Optical Cable Protection Silicon Core Tube Pure Virgin ...

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Silicone Coated HDPE Ducts 32mm 40mm 50mm Price

PLB Duct Pipes are used as underground cable conduits for optical fiber cables,

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HDPE Pipe for Fiber Optic Communication Optical Duct

HDPE Pipe HDPE Silicon Core Pipe 50mm 40mm 32mm plastic cable conduit PLB-HDPE Ducts are

What Is a Fiber Optic Cable Core and How Does It Work?

The core of a fiber optic cable is the thin glass or plastic center through which light signals travel. It''s the functional

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Optical fibers with a silicon core?

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Up to 144 fiber, 12 element dry core OM1, OM2, OM3, OM4 multimode or G.657A1, G.655CD single mode 250µm multi-loose tube

Silicon optical fibres – past, present, and future

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Multicore Loose Tube Fibre Cable | OM1 OM2 OM3 OS1

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High-Grade Silicon Core Tube

High-specification silicon core tubes are specialized components used in fiber optic cable installations. These tubes provide superior

Silicon core tube for optical cable

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The invention discloses a silicon core tube for an optical cable. The silicon core tube for the optical cable comprises an outer tube, a

Optical fiber

Optical fiber A bundle of optical fibers A TOSLINK fiber optic audio cable with red light shining in one end and out the other An optical

HDPE Silicon Core Pipe

9) The inner layer silicon core does not react with water, can rinse with water after accident Applications: PLB Duct Pipes are used

From acrylates to silicones: A review of common optical fibre coatings ...

A standard single mode optical fibre used for telecommunications consists of a core, cladding and a protective coating

Silicon core tube-UPVC Pipes and HDPE Pipes-SHANDONG EPOCH

In the field of telecommunications, HDPE silicon core pipes are mainly used for the protection and laying of optical cables. It can

Single Loose Tube Fiber Optic Cable (2-24 Fibers) Universal

2 to 24 fiber OM1, OM2, OM3, OM4 multimode or ITU-T G.657A1, ITU-T G.657A2 single mode 250µm single loose tube universal

Central Loose Tube Fiber Cable

Belden''s Central Loose Tube Fiber Cables support indoor/outdoor use—including conduit, direct burial, aerial and trunking. Built with

Multi-tube fibre optic cables

APAR multi-tube fibre optic cables protect multiple fibres for low-loss transmission, durable outdoor performance and high-capacity

Fiber Optic Silicone Core Conduit

The Optical Fiber Silicone Core Tube is a specialized conduit designed for the protection and installation of fiber optic cables. It is

Listed GelFree LSZH Loose Tube Cable LL Series | AFL Global

Fiber Optic Cable 1 Applications • Industrial • Electric utility • Mining • Mass transit Features • 6 to 144 fibers • Gel-free buffer tubes

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ALTOS® Lite Loose Tube, Gel-Free, Single-Jacket, Single-Armored Cable

Corning ALTOS® Lite gel-free, single-jacket, single-armored cables are designed for campus backbones in direct-buried

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Drop Cables | Optical Communications | Corning

Drop cables are the critical connection between a service provider''s distribution network and the end user''s

Optical Cables | Prysmian

Our all-dielectric ARM@CORE fibre optic cables are fully protected against ruthless Australian rodents.

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