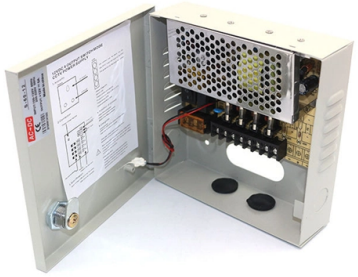
Shock-absorbing optical cable



Overview

CN216979386U The utility model relates to the technical field of optical cable protection, in particular to a shock-absorbing optical cable with high resil.

Key Takeaways

Shock-absorbing optical cables are designed to protect optical fibers from mechanical stress, vibration, and environmental impacts using specialized materials and damping mechanisms. OverviewShock-absorbing optical cables integrate mechanical and material solutions to safeguard the delicate optical fibers inside. These cables are commonly used in aerial installations, high-wind areas, and overhead power line applications where vibration, wind-induced oscillation, or mechanical shocks could damage the fibers or degrade signal quality.

Construction and Materials

Core Assembly: The optical fibers are often bundled into ribbons or loose tubes and surrounded by a shock-absorbing material. This material can be a strand of yarn or polymer that either absorbs water or carries a water-absorbing resin, providing both mechanical cushioning and moisture protection.

High-

Tensile Members: To withstand tension, cables include high-strength elements such as aramid fibers, steel strands, or aluminum-clad steel wires. These members bear the mechanical load, preventing fiber stretching. Protective Sheath: The outer layer is typically a thermoplastic or composite sheath that shields the cable from environmental factors like UV radiation, moisture, and abrasion.

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Vibration Dampers: For aerial cables like ADSS or OPGW, spiral shock absorbers or anti-shock hammers are attached externally. These devices dissipate wind-induced vibrations, reduce fatigue, and prevent stress concentration on the cable. Spiral dampers are often made from aluminum alloy and feature a gripping section that secures the damper without damaging the cable, and a shock-absorbing section that mitigates oscillations.

Functionality

Vibration Reduction: Shock-absorbing elements convert kinetic energy from wind or mechanical shocks into heat or controlled motion, reducing stress on the fibers. Moisture Protection: Some shock-absorbing materials also absorb water, preventing damage if the outer sheath is compromised. Thermal Stability: Materials are selected to minimize contraction or expansion under temperature changes, avoiding excessive tension that could increase transmission loss.

Applications

Aerial Fiber-

Optic Cables: ADSS (All-Dielectric Self-Supporting) and OPGW (Optical Ground Wire) cables use shock absorbers to maintain fiber integrity on power lines. Harsh Environments: Cables installed in areas with high wind, ice, or mechanical vibration benefit from these protective features. High-Fiber-Count Networks: Modern OPGW designs, like AFL HexaCore, combine compact fiber bundles with stainless steel tubes and vibration dampers to support high fiber counts without increasing cable diameter.

InstallationShock-absorbing devices are designed for easy on-site installation, often without tools. Spiral dampers or anti-shock hammers can be attached by hand, ensuring quick deployment and long-term stability. SummaryShock-absorbing optical cables combine mechanical reinforcement, damping materials, and protective sheaths to ensure reliable fiber performance under stress.

They are essential for overhead, high-stress, or high-fiber-count applications, providing both vibration mitigation and environmental protection to maintain signal integrity and extend cable lifespan.

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Article Content

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The utility model relates to the technical field of optical cable protection, in particular to a shock-absorbing optical cable with high resilience, which comprises an optical cable...

Adss Cable Spiral Shock Absorber 1000m

This series ADSS Cable mini suspension clamps can be used for short span ADSS cable from 100meter, 150meter, 300meter, 400meter.

ADSS Spiral Vibration Damper

The cable damper is a type of shock absorber that is extremely helpful for small diameter transmission lines and high frequency fiber optical cables, which can be easily damaged.

LTL Spiral Shock Absorber for Optical Fiber ADSS/OPGW Cable

Protection against Vibration and Shock: Our spiral vibration damper is designed to effectively absorb and dissipate vibrations and shocks, ensuring the integrity and safety of optical cables in harsh

Anti-Shock Absorbing Harmmer For Opgw Cable

The ADSS shockproof hammer is a synthetic friction resonance damper that reduces the stress of the optical cable / wire by reducing the wind vibration on the partially scattered optical cable / wire,

Ultradur® for Fiber Optical Cables (FOC)

Ultradur® B 6550 LN and B 6550 LNX are solutions that enables high speed extrusion at smaller diameters specifically to meet the demands of fiber optic cables.

Shock & Vibration Isolators

At John Evans'' Sons, America''s oldest spring manufacturer, our designs for helical vibration isolators (also known as cable mounts or helical mounts) deliver

Optical fiber cable

ZTT ADSS (All Dielectric Self-Supporting) and ribbon optical cable in communication has been listed in the National Torch Plan and been regarded as national new product.

UT Drop Cables | High Speed Fibre (Fiber) | STL Tech

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These cables feature a loose tube structure with optical fibres inside a robust central buffer tube. The buffer tubes are gel-filled, and water-swellable glass yarns are

How to Design Optical Fiber Cables for Harsh Environments

For harsh environments, such as avionics and defense, key issues related to high temperatures, vibration, and shock must be considered to maximize the efficiency of optical

3M™ DBI-SALA® EZ-Stop™ Leading Edge Cable Shock-Absorbing

6 ft. (1.8m) cable single-leg with snap hook at one end, steel rebar hook at other end. EZ Stop™ leading edge shock absorbing lanyards combine a set of “industry first” advancements, with popular features

3M DBI-SALA EZ-Stop Leading Edge 100% Tie-Off Cable Shock Absorbing ...

EZ Stop™ shock absorbing lanyards combine a set of industry first advancements, with popular features making them the workhorse of the industry. Today''s EZ Stop™ represents the culmination of

Guardian 01241 CL72-2-6 Vinyl Coated Cable Double Leg Shock Absorbing ...

Guardian 01241 6 foot length vinyl coated cable double leg shock absorbing lanyard with ¾" locking snaphooks on each end. Coated cable for added protection from welding slag or sparks.

Guardian 01242 6-Foot Cable Lanyard with Rebar Hook

Comprised of an ultra-durable, vinyl coated cable, the Guardian Fall Protection Cable Lanyard is perfect for use in welding applications and other harsh

siraelectro-optics

Fibre Optics Evaluation Phase II Rapid Depressurisation, Vibration, Shock & Thermal Vacuum Testing - Fibre Cable and Connectors

How Can Fiber Optic Cables Withstand Extreme Heat?

Fiber optic cables designed for extreme environments boast robust coatings, hermetic sealing, and chemical-resistant jackets. These features

LSZH Fiber Optic Shipboard Cable

Applications Shipboard LSZH Fiber Optic Cables use a tight buff-ered, water blocked construction with low smoke, zero-halogen (LSZH) jacketing materials. Adhering to the United States Department of

Swellcoat™: Water Blocking & Absorbing Yarn

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Swellcoat™ impregnated fibers are an efficient means of introducing SAP (Super Absorbent Polymer) into the fiber optic cable. Swellcoat™ binders, fillers, and

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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