

50 square millimeters of OPGW optical cable



Overview

Opgw 50 Square Composite Overhead Ground Wire OPGW is an outdoor use optical fiber cable suitable for duct and aerial applications. We CentraCore OPGW Cabl.

Key Takeaways

A 50 mm² OPGW cable is a single-layer optical ground wire designed for high-voltage transmission lines, combining mechanical strength, lightning protection, and optical fiber communication. Construction and Design

A 50 mm² OPGW cable typically features a central stainless steel tube that houses and protects the optical fibers, often filled with water-blocking gel to prevent moisture ingress and provide shock absorption during installation and operation. Surrounding this central tube are aluminium-clad steel wires and aluminium alloy wires, which provide mechanical strength, electrical conductivity for grounding, and resistance to environmental stresses. The single-layer design ensures a compact structure while maintaining sufficient tensile strength for long spans.

Electrical and Mechanical Properties

- Cross-sectional area: 50 mm², suitable for rated voltages of 66 kV, 115 kV, 150 kV, 250 kV, and 275 kV.
- Mechanical strength: Designed to withstand severe installation and operational conditions, including wind, ice loading, and short-circuit currents.



- **Short-circuit current capacity:** The metallic layers allow the cable to safely conduct fault currents while protecting the optical fibers .

- **Durability:** The aluminium and steel layers provide excellent corrosion resistance and long-term reliability in outdoor environments .

Optical Fiber Features

- **Fiber protection:** Fibers are loosely placed in the central tube to prevent strain during installation and operation .

- **Fiber count:** Single-layer OPGW cables can accommodate up to 48 fibers, with clear identification using color coding and ring marks .

- **Transmission performance:** Designed for low attenuation and high stability, suitable for long-distance communication and smart grid applications .

Applications

- **High-voltage transmission lines:** Provides both grounding and lightning protection while enabling secure data transmission .

- **Communication networks:** Supports voice, video, and data signals for grid monitoring, substation automation, and power line protection systems .

- **Replacement or new installations:** Can replace existing ground wires or be installed in newly constructed lines with minimal additional load on towers .

Summary

A 50 mm² OPGW cable is a robust, dual-function cable that integrates mechanical, electrical, and optical capabilities. Its single-layer design is suitable for medium to high-voltage transmission lines, offering reliable grounding, lightning protection, and high-bandwidth communication, while ensuring long-term durability and ease of installation .

Article Content

HexaCore OPGW Cable | High-Fiber Count Optical Ground Wire

AFL's HexaCore OPGW (Optical Ground Wire) delivers up to 144 fibers in a compact, high-strength design for overhead power lines.

OPGW cables and variants

Get detailed technical specifications and performance charts. Optical Ground Wire (OPGW) cables are advanced composite

Product Catalog

This is designed for splicing ADSS, OPGW cables and the normal cables to house the fiber core splices to outdoor intermediate

01_OPGW.cdr

catalog | Optical Cables Optical Ground Wire| OPGW Application Suitable for installation as ground wire in powerlines. The cable

OPGW cables

Technical data er request. Optical unit composed by 1 to 3 stranded stainless steel tubes Double or triple armour layers available un

Packed with energy and fibre.

Packed with energy and fibre. OPGW cables provide the elements that sustain winners. Packed with energy and fibre. Our Optical

Optical Fibre Composite Overhead Ground Wire (Stranded-tube

Optical fibre composite overhead ground wire (OPGW) is an overhead ground wire containing optical fibre. It has multiple functions

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Introducing fibre optic systems for OHTL Overhead optical fibre cable systems have become a key factor in telecommunications

50# OPGW System v1

Cablle Systtem OPGW (Optical ground wire) cable is a special kind of electrical ground wire. Apart from functions as a conventional

OPGW Optical Fiber Composite Ground Wire

The number of optical fibers used in the tubes varies and depending on the need and type of cable, one fiber can be used and reach

OPGW Fiber Optic Cable | Optical Ground Wire for Aerial Networks

Optical Ground Wire (OPGW) is a dual functioning cable, meaning it serves two purposes. It is designed to replace traditional static /

DS Updation OPGW

The optical fibres are enclosed in a central stainless steel tube, surrounded by a layer of AS wire and a layer of AA wire. This

Optical Ground Wire Cables|OPGW Cables|Fiber Optic Cables

Power ground wire cable Application OPGW is a dual functioning cable performing the duties of a ground wire and also providing a

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Aluminium Tube Optical Fibre Jelly Compound Steel Tube Bend Radius (Short Term)
20D Bend Radius (Long Term) 10D Operating

Product Catalog

Optical Ground Wire (OPGW) Cable Fiberon OPGW is one of the most reliable fiber optic mediums for the telecom service providers,

Optical Fiber Composite Overhead Ground Wire (OPGW)

Two or three stainless steel optical tubes are helically stranded in the inner layer of a multiple-layer cable. The multi loose tube type

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