

Technical parameters of 24-core OPGW optical cable

Article Overview

A 24-core OPGW cable typically contains 24 single-mode optical fibers in stainless steel tubes, reinforced with aluminum-clad steel wires, designed for high-voltage overhead lines with both grounding and communication functions.

Optical Fiber Specifications

- o Fiber Type: Single-mode fibers, usually ITU-T G.652D, suitable for long-distance, high-bandwidth applications; G.655 fibers may be used for non-zero dispersion-shifted networks .
- o Operating Wavelengths: 1310 nm and 1550 nm.
- o Typical Attenuation: 0.35 dB/km at 1310 nm and 0.25 dB/km at 1550 nm .
- o Protective Coating: UV-curable acrylate over the fiber cladding, sometimes with hydrogen-absorbing gel in PBT tubes to prevent degradation .

Mechanical and Structural Parameters

- o Core Protection: Fibers are housed in stainless steel or PBT tubes, allowing movement under tension and temperature variations .
- o Reinforcement: Aluminum-clad steel (ACS) wires or a combination of ACS and aluminum alloy wires surround the fiber core, providing tensile strength and mechanical protection .
- o Tensile Strength: Typically ranges from 40 kN to 100 kN, depending on design and conductor cross-section .
- o Short-Circuit Capacity: High, determined by conductor material and cross-section; ensures safety during electrical faults .
- o Environmental Resistance: Designed to withstand lightning, extreme temperatures, moisture, and harsh outdoor conditions .

Electrical and Operational Features

- o Dual Function: Acts as both a grounding wire for high-voltage lines and a communication medium for voice, data, and video signals .
- o Installation Voltage: Suitable for high-voltage lines, typically above 110 kV .
- o Temperature Range: Wide operational range to accommodate environmental variations, ensuring fiber integrity and cable performance .

Additional Considerations

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- o **Manufacturer Quality:** Performance and reliability depend on manufacturing quality; reputable manufacturers like Shandong Inlink Optoelectronic Technology Co., Ltd. and HuaDong Cable Group provide ISO-certified production and advanced quality control .
- o **Applications:** Used in grid automation, real-time monitoring, unmanned substation monitoring, lightning waveform observation, and power line protection systems . In summary, a 24-core OPGW cable combines high-strength mechanical design, reliable optical communication, and electrical grounding capabilities, making it suitable for modern high-voltage transmission networks while ensuring long-term durability and performance.

The document is a technical specification for an optical ground wire cable from ZTT Cable. It provides details on the cable

OPGW-24B1-100 Technical Specification This document provides specifications for a complete cable that includes 24 optical fibers.

OPGW Parameters: Optical Fiber Unit Structure of Central Stainless-Steel Tube Structure: Stainless Steel Tube Optical Fiber Cell

Overhead Fibre Optic Cables shall be 24 core OPGW (Optical Ground Wire). The OPGW cable is proposed to be installed on the

OPGW cable is usually custom-designed to best match the optical, electrical, mechanical, quality, and cost

In order to ensure that the OPGW cables will operate successfully in a high voltage network, all aspects associated with the

1.1 SCOPE This specification covers Optical Ground Wire Cables (OPGW) for the installation on high voltage overhead power lines.

1 General 1.1 Purpose To define the technical specifications for the supply of Fibre Optic Overhead Ground Wire (OPGW) for

Approach cable shall contain fibres with identical optical/ physical characteristics as those in the OPGW cables. The cable core shall

The OPGW cable contains high purity silica optical fibers with acrylate coating, and is designed and tested according to various

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The Central Tube Optical Ground Wire (OPGW) is surrounded by single or double layers of aluminum clad

Fiberon has developed technical expertise in fiber optic cables and proven its capabilities in manufacture of energy efficient bare

Among the various configurations, the 24-core OPGW cable stands out as a versatile choice, balancing capacity and

ISO 9001 Quality Management Systems ISO 14001 Environmental Management Systems IEEE Std 1138
IEEE Standard construction

This document provides specifications for two types of OPGW fiber optic cables: a 24 core cable and a 48 core cable. Both cables

1. The document discusses specifications for overhead power lines, including requirements for conductors, optical fibers, and

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