

Power Engineering OPGW Optical Cable

Overview

An optical ground wire (also known as an OPGW or, in the IEEE standard, an optical fiber composite overhead ground wire) is a type of cable that is used in overhead power lines. Such cable combines the functions of grounding and telecommunications. An OPGW cable contains a tubular structure with one or more optical fibers in it, surrounded by layers of steel and aluminum wire. The. HistoryAn OPGW cable was patented by BICC in 1977 and installation of optical ground wires became widespread starting in the 1980s. In the peak year of 2000, around 60,000 km of OPGW was installed worldwide. Asia, especially. Several different styles of OPGW are made. In one type, between 8 and 48 glass optical fibers are placed in a plastic tube. The tube is inserted into a stainless steel, aluminum, or aluminum-coated steel tube, with some slack length. Optical fibers are used by utilities as an alternative to private point-to-point microwave systems, or communication circuits on metallic cables. OPGW as a communication medium has some adva.



Article Content

Nov 10, 2025

Full Guide of Optical Ground Wire

Optical ground wire provides a reliable, efficient, and cost-effective solution for power transmission and communication. Optical Ground Wire (OPGW) integrates optical fibers into an ...

Jul 24, 2025

What is OPGW Cable? A Complete Guide to Optical ...

OPGW, short for Optical Fiber Composite Overhead Ground Wire, is a specialized cable used in the construction of high-voltage electric power transmission lines.

Sep 20, 2025

What is OPGW Cable? - Everything You Need to Know (Q& A Guide)

A: OPGW (Optical Ground Wire) is a power transmission cable featuring dual functions on overhead lines. The power line protects (in lightning strikes) and the fiber for high-speed data ...

Mar 02, 2026

Optical Fiber Composite Overhead Ground Wire (OPGW)

OPGW is mainly applied in communication line of newly constructed high voltage transmit electricity system with 35 KV or above, or replacement of existing ground wire of previous overhead high ...

Dec 14, 2025

OPGW (Optical Ground Wire)

OPGW (Optical Ground Wire) is a dual-purpose cable used in overhead power transmission lines that combines lightning protection with high-speed fiber optic communication.

Mar 20, 2026

T& D "24 Tutorial: Proficiency in Optical Groundwire (OPGW) Design ...

This tutorial will cover: The three basic design types of OPGW used, the advantages and disadvantages of each, and best practices in design and manufacturing. Accessories used with ...

Jan 13, 2026

What is OPGW Cable Used For?

Discover the main uses and benefits of OPGW fiber optic cables in power transmission networks. Learn how ABPTTEL's OPGW solutions enhance communication and safety.

Jan 03, 2026

Optical ground wire

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May 09, 2026

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 / shield / earth wires on overhead transmission lines with the added ...

Contact Us

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