



● Application

An Optical Ground Wire (OPGW) serves a dual purpose in electrical power transmission and distribution lines. It combines communication and grounding functions, providing a robust solution for ensuring both reliable power transmission and high-speed data communication. OPGW cables, also known as Optical Fiber Composite Overhead Ground Wires, are laid between the tops of high-voltage electrical pylons. The conductive portion of the cable protects high-voltage conductors from lightning strikes and grounds nearby towers to the soil. Additionally, the optical fibers within the cable enable high-speed data transmission for voice, data communication, and system protection.

● Construction

The OPGW Optical Power Ground Wire features a central stainless steel tube surrounded by double layers of aluminum-clad steel wires (ACS). The inner layer of aluminum-clad steel wires is compressed, providing enhanced mechanical strength. The outer layer can be either compressed or rounded, depending on specific requirements and engineering considerations.

● Feature

Communication Advantages: OPGW offers advantages over buried optical cables as a communication medium. Its installation costs per kilometer are lower, and the optical circuit is effectively protected from accidental contact by the high-voltage cables below and the height of the OPGW above the ground.

High Tensile Strength: The OPGW cable is designed with high tensile strength to withstand the mechanical stresses of installation and operation.

Optimal Mechanical and Electrical Properties: It maintains an optimal balance between mechanical durability and electrical conductivity, ensuring reliable performance in diverse operating conditions.

Suitability for Optical Cable Communication Systems: OPGW is well-suited for use in optical cable communication systems, providing a stable and secure transmission medium.

● Specification

- IEC 60793-1: Optical fiber Part 1: Generic specifications
- IEC 60793-2: Optical fiber Part 2: Product specifications
- ITU-T G.652: Characteristics of a single-mode optical fiber cable
- ITU-T G.655: Characteristics of a non-zero dispersion-shifted single-mode optical fiber and cable
- EIA/TIA 598 B: Color code of fiber optic cables
- IEC 60794-4-10: Aerial optical cables along electrical power lines – Family specification for OPGW
- IEC 60794-1-2: Optical fiber cables-Part 1-2: Generic specification-Basic optical cable test procedures
- IEEE1138-2009: IEEE Standard for testing and performance for optical ground wire (OPGW) for use on electric utility power lines
- IEC 61232: Aluminum-clad steel wire for electrical purposes
- IEC 60104: Aluminum magnesium-silicon alloy wire for overhead line conductors
- IEC 61089: Round wire concentric lay overhead electrical stranded conductors

● Eastful Cable Lab



We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.

CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

● Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rheinland and CCS.



● National Green Factory



Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China. We are committed to the development of high-end, intelligent and green manufacturing industry.

*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

● Technical Parameters

Fiber Count	Diameter	Weight	RTS	Short Circuit
Max.	mm	kg/km	kN	kA ² s
30	15.2	680	89	147.9
30	16.2	780	102.5	196.3
36	14	610	81.3	97.1
36	14.8	671	89.8	121
36	16	777	104.2	168.1
48	15	652	85.1	135.2
48	16	742	97.4	177
48	15	658	86	138.1
48	15.7	716	93.8	164.3