

Article Overview

Replacing an OPGW cable requires careful planning, proper tensioning, precise splicing, and thorough testing to maintain both grounding and fiber communication functions.

Preparation and Planning

Before replacement, conduct a line survey to determine tower positions, drum lengths, and splice locations based on accessibility and obstacles such as roads or other lines (). Prepare the site by ensuring flat, solid, and well-drained areas for cable drums and equipment (). Verify the mechanical properties, transmission performance, and splice loss of the new OPGW cable, and ensure all accessories and tools are available, including tension machines, pay-off machines, pulleys, anti-torsion devices, and intercoms ().

Safety Measures

Establish an equal potential zone using temporary grounding cables and protective equipment such as hot-sticks, conductive mats, gloves, and face shields (). This is critical to prevent electrical hazards while working on high-voltage transmission towers.

Cable Removal and Installation

- o Remove the old OPGW cable carefully, avoiding damage to the tower hardware and adjacent lines.
- o Install the new cable using the tension pay-off method, maintaining appropriate tension to prevent sagging or abrasion (). Use pullers, tensioners, swivels, and pulley-blocks to guide the cable along the towers ().
- o Ensure the cable is properly aligned and supported on each tower, observing the minimum bending radius to protect the optical fibers ().

Splicing Procedure

- o Prepare the cable by straightening at least 2-2.5 meters and marking the section for splicing ().
- o Remove the armor layers carefully using a metal saw or mini grinder, exposing the inner fibers without damaging them ().
- o Insert fibers into protective transport tubes if the cable has metal loose tubes, separating fibers into groups as needed ().
- o Fusion splice the fibers and seal with heat-shrink sleeves, then place the splices into closures mounted on the tower ().
- o Perform OTDR testing to verify optical continuity and splice quality ().

Final Checks

After installation, verify the mechanical tension, sag, and optical performance of the cable. Document all test

Fiber optic cable replacement OPGW

results, including OTDR traces and splice losses, and ensure proper handover procedures are completed (). Replacing OPGW fiber optic cables is a complex task requiring coordination, specialized equipment, and strict adherence to safety and technical standards to ensure reliable electrical grounding and fiber communication.

PRYSMIAN OPGW Installation - Free download as PDF File (.pdf), Text File (.txt) or read online for free. The document provides

Discover what OPGW cable (Optical Ground Wire) is, its technical structure, key benefits for power grids, installation

This document provides procedures for installing OPGW fiber optic cables on transmission lines between 35kV and 400kV. It outlines

Discover how to install OPGW fiber optic cable for reliable communication. Follow this step-by-step guide to ensure efficient and

Advantages of OPGW Cables OPGW cables offer several advantages over traditional

This document covers all the activities usually performed by PRYSMIAN for on-site installation of OPGW fibre optic cables, including

This tutorial will cover: The three basic design types of OPGW used, the advantages and disadvantages of each, and

For these reasons, optical fibres are widely installed with high-voltage power lines. There are several types of cable and installation

They incorporate metal strands for grounding along with optical fibers for data. I have often

General Rules Installation Preparation of OPGW 2.1 Establishment of OPGW installation and engineering 2.2 Preparation of

While OPGW is easily installed in new construction, electrical utilities find the increased capacity of fiber to be so useful that

OPGW cables combine the functions of grounding and communication, with a optical fibers in the middle of the conductive cable.

Prysmian's Optical Ground Wire (OPGW) cables will help you save both time and money as the cable

contains both optical fibres

1. Optic fiber splicing of OPGW: After the installation of OPGW, fittings and accessories,

Types of Fiber-Optic Cables For the utility communication system, OPGW, OPPC, and ADSS cables are commonly

What is OPGW ? OPGW fiber optic cable, or Optical Ground Wire, is a type of cable designed to serve dual functions: it acts as a

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