

How many square millimeters should be used for fiber optic cable grounding

Article Overview

For grounding metallic components of fiber optic cables, a copper conductor with a cross-sectional area of at least 35 mm² is typically required, with smaller 16 mm² conductors allowed for certain extensions.

Key Guidelines

1. Cable Type Matters Fiber optic cables themselves do not carry electrical current, so fully dielectric cables require no grounding. However, cables with metallic components--such as steel armoring, copper strength members, or metallic messenger wires--must be grounded to prevent electric shock, equipment damage, or fire hazards (Hawell Cable), .

2. Standard Cross-Sectional Areas

- o For main grounding connections from the cable to the building's grounding system, a multi-strand copper conductor of at least 35 mm² is recommended (ME Fiber Optic), .

- o When extending the grounding from fiber distribution boxes or transfer devices to the existing grounding system, a minimum of 16 mm² copper conductor is acceptable (ME Fiber Optic), .

- o NEC Article 770.100 allows a minimum 14 AWG copper wire for grounding, but manufacturers often recommend 6 AWG (13.3 mm²) for both bonding and grounding purposes to ensure compliance and low-resistance connections (Corning AEN 140), .

3. Installation Practices

- o Grounding conductors should be as short and direct as possible, ideally less than 20 feet, to minimize impedance and maintain continuity (Corning AEN 140), .

- o Metallic components should be bonded at each building entry point and termination location to prevent induced voltages from lightning or nearby power lines (Hawell Cable), .

- o Use UL-listed bonding clamps and ensure the contact surface is clean and oxide-free for low-resistance connections (Hawell Cable), .

4. Compliance and Verification

- o Verify continuity with a low-resistance ohmmeter, ensuring resistance is less than 1 ohm between the metallic component and the grounding system (Hawell Cable), .

- o Follow NEC 770.93 for grounding or interrupting non-current-carrying metallic members, especially when cables are exposed to power conductors (SeeClearfield), .

Summary For most commercial and industrial fiber optic installations with metallic components, 35 mm² copper conductors are standard for main grounding, while 16 mm² may be used for extensions. Fully dielectric cables do not require grounding. Always follow NEC, NFPA, and manufacturer guidelines to ensure safety and compliance.

After pulling several runs of SM fiber optic, I began terminating today. I began stripping the outer sheath and it has a



How many square millimeters should be used for fiber optic cable grounding

12.2.3 For fiber optic assemblies used in ground support equipment, the engineering documentation shall specify the maximum

Choosing a connector type for any installation should consider if the connector is compatible with the

Go to the far end of the requested cable location area and ground the fiber metallic shield, the metallic stress member, or the locate

This document is a quick reference to some of the formulas and important information related to optical technologies.

Fiber optic cable sequential numbers are required at each pole location and vault wall. Sequential numbers will identify conduit

OSP Fiber Optics Civil Works Guide An updated version of this booklet is now available as a textbook on Amazon, is included in the

A professional reference for fiber optic sizes, measurement standards, and how to select the right fiber for your

CAUTION: Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for

Most users install many more fibers than needed, especially adding singlemode fiber to multimode fiber

Bonding and Grounding: Follow your company and local/national bonding and ground procedures when using fiber cable with

Fiber optic cables, especially those used for backbone cables, may contain many fibers that connect a number of different links going

The type of fiber optic cable and the fibers in the cable should be chosen appropriate for the type of communications system(s) being

Aerial Cable Installation Aerial Cable Installation Deploying fiber above ground on poles or towers removes the need for underground

The following items are key considerations in preparation for installing the fiber optic cable when the construction is ready for cable

We know of many fiber optic cable plants that have survived natural disasters like earthquakes - in fact

How many square millimeters should be used for fiber optic cable grounding

Web: <https://www.kremgroup.co.za>

