

Grounding trunk line of cable tray



Overview

Practices for grounding and bonding of cable trays All metallic cable trays shall be grounded as required in Article 250.96 regardless of whether Understan.

Key Takeaways

A trunk line along a cable tray should be grounded using either a continuous grounding conductor or by bonding the tray itself, ensuring a safe path for fault currents and compliance with electrical standards. Purpose of Grounding

Grounding a cable tray ensures that any stray electrical currents or faults are safely directed to the earth, reducing the risk of electric shock, equipment damage, and fire hazards. It also minimizes electrical noise and interference, which is critical in environments with sensitive electronic equipment .

Methods for Grounding Along a Cable Tray

- **Continuous Grounding Conductor** A bare or insulated copper conductor can be run along the full length of the cable tray. This provides a reliable path for fault currents. The conductor should be securely attached to the tray at regular intervals using grounding clamps or lugs to maintain mechanical stability and electrical continuity .
- **Using the Cable Tray as the Grounding Conductor** In some installations, the metallic cable tray itself can serve as the equipment grounding conductor (EGC). This is suitable for steel or aluminum trays that meet the minimum cross-sectional area requirements specified in NEC Table 392.60(A). All tray sections must be bonded together to ensure continuous conductivity .

- **Bonding Between Tray Sections** Each section of the tray should be electrically bonded to adjacent sections using tinned copper lugs, bolts, or bridging plates. For galvanized trays, the connecting plates can serve as bridging plates, while painted or coated trays require additional copper wire bridging to maintain continuity .

Material Considerations

- **Copper Wire:** Excellent conductivity and corrosion resistance; preferred for insulated grounding conductors.
- **Galvanized Steel:** Durable and corrosion-resistant; suitable for harsh environments.
- **Stainless Steel:** Ideal for highly corrosive or outdoor environments .

Installation Guidelines

- Ensure grounding points are planned along the tray before installation.
- Avoid placing bare copper in aluminum trays in moist environments to prevent electrolytic corrosion; use insulated conductors with exposed ends for bonding .
- Maintain grounding resistance ideally below 4 ohms to ensure effective fault current diversion .
- Follow NEC Article 250 and 392 for grounding and bonding requirements, including limitations on using trays as EGCs for circuits with high ground-fault protection ratings .

Summary

For safe and compliant grounding of a trunk line along a cable tray, either a continuous grounding conductor should be installed along the tray or the tray itself should be bonded as the EGC. Proper bonding between tray sections, use of corrosion-resistant materials, and adherence to NEC standards are essential to ensure electrical safety and system reliability .

Article Content

Equipment Grounding Conductors for Cable Tray Systems

The intent of this article is to review grounding practices for cable tray wiring systems. The Equipment Grounding Conductors are the

Cable Tray Installation Rules (NEC 392) – Electrical Trader

All metallic cable trays must be grounded as outlined in NEC Article 250.96, even if the tray isn't being used as an

NEC Standards for Cable Trays: Grounding, Fill Capacity

This article provides a comprehensive framework that governs various aspects of cable tray installations, including

Cable Tray Design: Sizing, Fill, and Support Spacing

NEC 392.60 permits a metallic cable tray system, under specific conditions, to serve as an equipment grounding

Cable tray manual

In facilities where cable tray may be used as the equipment grounding conductor in accordance with NEC® Sections 392.60(A) &

Grounding Inspection of Steel and Aluminum Cable Tray Systems

Electrical grounding is essential for personal safety and protection against arcing that can occur in any part of the wiring system,

Equipment Grounding Conductors for Cable Tray Systems

Cable tray have excellent safety and dependability records, because of the result of cable tray's unique features plus

Cable Laying: Everything You Must Know

After determining the routing of the cabling, a structured cabling project initially needs to consider the laying of cable trays, which can

Cable Tray Trunking & Ladder Installation Method for Projects

Cable Tray, trunking and ladder will be properly supported and stacked in a flat surface. Tray, trunking and ladder will

Practices For Grounding and Bonding of Cable Trays

The document discusses grounding and bonding practices for metallic and non-metallic cable trays. Metallic cable trays must be

Grounding Inspection of Steel and Aluminum Cable Tray Systems

Steel and aluminum cable tray systems are excellent equipment grounding conductors if they are properly designed, specified,

Grounding cable trays: requirements, norms, instructions

How to ground cable trays and what requirements should be considered? Which wire do you need to use to ground the cable

Cable Tray Technical Guide A practical guide to product selection

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

Cable Trunking | Aluminum & Electrical Cable Trunking Price

Cable trunking is a system used to organize and protect electrical cables or wires in buildings or industrial settings. It provides a safe

NEC Standards for Cable Trays: Grounding, Fill Capacity

The flexibility and scalability of cable trays make them an ideal choice for environments where cable density and

Cable tray manual

INTRODUCTION The B-Line series Cable Tray Manual was produced by our technical staff. We recognize the need for a complete

Method Statement installation of Cable Trays and Ladders

This method statement covers the site installation of the cable tray & ladders and the requirements of checks to be

NEMA Standards Publication VE 2-2006

4.7.1 Cable Tray Used as an Equipment Ground Conductor (EGC)(See Figures 4.57 through 4.60) The use of aluminum and steel

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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