Trough-type cable tray ground wire



Overview

All metallic cable trays shall be grounded as required in Article 250.96 regardless of whether or not the cable tray is being used as an equipment grounding conductor (EGC).

Key Takeaways

A trough-type cable tray should be grounded using a continuous equipment grounding conductor or by bonding the tray sections together, ensuring a low-impedance path to earth for safety and NEC compliance.

Grounding Principles

All metallic cable trays, including trough-type trays, must be grounded to provide a safe path for fault currents and prevent electric shock or equipment damage ( ). Grounding ensures that any stray electrical currents are safely diverted into the earth, reducing the risk of fire or electrical hazards ( ).

Methods of Grounding

Using a Separate Grounding ConductorA continuous bare or insulated copper conductor can be run along the length of the trough tray. The conductor should be mechanically secured to the tray using grounding clamps at each section or joint to maintain electrical continuity ( ). Insulated conductors are preferred in aluminum trays to prevent electrolytic corrosion, with insulation removed at bonding points ( ).

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Using the Tray as the Equipment Grounding Conductor (EGC)In qualifying facilities, the metallic tray itself can serve as the EGC if it meets NEC conductivity and cross-sectional area requirements ( ). Steel trays should not be used as EGCs for circuits with ground-fault protection above 600 A, and aluminum trays above 2000 A ( ). Tray sections must be electrically continuous, bonded at joints, and connected to a permanent ground ( ).

Bonding at Joints and Equipment ConnectionsEach tray section should be bonded to adjacent sections using tin- or zinc-plated connectors, bolts, or welds to ensure low impedance ( ). Equipment mounted on or connected to the tray should also be bonded to maintain a continuous grounding path ( ).

Material Considerations

Copper Wire: Excellent conductivity, corrosion-resistant, ideal for most installations.

Hot-

Dip Galvanized Steel: Durable and corrosion-resistant, suitable for industrial environments. Stainless Steel: Recommended for harsh or corrosive environments ( ).

Safety and Compliance

Grounding resistance should ideally be 4 ohms or less to ensure effective fault current dissipation ( ). Keep grounding conductors clear of flammable materials and moisture to prevent degradation.

Follow NE

C Article 392 and local electrical codes for installation, bonding, and grounding requirements ( ).

Summary

For a trough-type cable tray, the safest and most reliable approach is to either run a continuous grounding conductor along the tray or use the tray itself as the EGC if it meets NEC requirements. Proper bonding at joints, correct material selection, and adherence to grounding resistance standards are essential to ensure electrical safety and system reliability.

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Article Content

Practices for grounding and bonding of cable trays

All metallic cable trays shall be grounded as required in Article 250.96 regardless of whether or not the cable tray is being used as an equipment grounding conductor (EGC). The EGC

Trough Trays | Cable Tray and Reels | Wire and Cable Management

Cablofil steel trough trays provide the strength and security required when then need to limit cable access is of primary importance. Multi purpose splice for straights, offsets, horizontal or vertical

7 Types of Cable Trays: How to Choose the Right One

Selecting the correct cable tray type is not arbitrary—it depends on a combination of cable characteristics, environmental conditions, and installation requirements.

Cable Tray Grounding Wire: What You Need to Know

Can I use the cable tray itself as a grounding wire? Yes, but only if the tray is made of metal and meets the required electrical conductivity and

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 most important conductors in the electrical systems. The Equipment

Bonding and Grounding wire mesh cable tray.

“Metallic cable trays that support electrical conductors shall be grounded as required for conductor enclosures in accordance with 250.96 and part IV of Article 250.”

Cable Tray Installation Rules (NEC 392) – Electrical Trader

Core rules for selecting, installing, grounding, and filling cable trays—clearances, materials, separation, and bonding explained.

Cable Tray Technical Guide A practical guide to product selection and ...

Cable tray installed in a hazardous location must contain only those cables that are appropriate for this type of environment as defined in Chapter 5 of the NEC.

Wire and Cable Management

Using a unique joining method that mechanically locks components together without fasteners or heat, this wiring trough ships completely assembled to save both time and labor. Designed for indoor use,

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Cable Tray Conductor Sizing Guide

Cable Tray Conductor Sizing Guide Size conductors installed in cable tray with NEC 392, NEC 310.16, tray fill, ampacity adjustment, voltage-drop

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Equipment Grounding Conductors for Cable Tray Systems

Equipment Grounding Conductors for Cable Tray Systems Cable tray wiring systems have excellent safety and dependability records. These excellent records are the result of cable tray''s unique

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Installation Products | ABB Electrification U.S.

With more than 200,000 products under our trusted brand names, these solutions can be found wherever electricity is used.

Wire Weight Calculator | Cable Weight Tool

Calculate electrical wire weight for copper and aluminum conductors. Free tool for cable tray loading and shipping estimates.

Copper Wire Supplier: MC Cables, Aluminum Wires

Cerrowire is a leading copper wire supplier offering MC cables, aluminum wire, and building cables for reliable electrical solutions.

China 14 AWG VNTC Control Cable 600V PVC Nylon PVC Type TC

This 14 AWG PVC Nylon unshielded tray control cable acts as durable VNTC tray cable for conduit, standard THHN PVC tray cable for raceway, and certified heavy-duty TC-ER control cable for trough.

Wireways Selection Guide: Types, Features, Applications | GlobalSpec

Wireways are designed to protect cables from environmental contaminants such as dust, dirt, oil, and moisture. Wireways—sometimes known as "troughs" or "gutters" within the electrical contracting

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