

How to ground cables laid in cable trays

Article Overview

Cables in metallic cable trays should be grounded using the tray as an equipment grounding conductor (EGC) or by bonding individual EGCs to the tray with proper clamps and connectors.

Using the Cable Tray as an Equipment Grounding Conductor

Metallic cable trays can serve as the EGC if they meet NEC requirements, ensuring a continuous, low-impedance path for fault currents . All metallic trays must be grounded regardless of whether they are used as the EGC . Steel trays should not be used for circuits with ground-fault protection above 600 A, and aluminum trays should not be used above 2000 A . The tray must be electrically continuous, and bonding between sections is required to maintain continuity .

Bonding Individual Grounding Conductors

If individual equipment grounding conductors (EGCs) are installed in or on the tray, they should be bonded to each or alternate tray sections using grounding clamps . This ensures mechanical stability and electrical continuity under fault conditions. For aluminum trays, use insulated conductors to prevent electrolytic corrosion, removing insulation only at bonding points with tin- or zinc-plated connectors .

Grounding Materials and Methods

- o Flexible jumpers with lugs can connect tray sections to the grounding system .
- o Braided copper or galvanized conductors are recommended for independent grounding lines in critical installations like industrial facilities or solar plants .
- o Brass tray grounding terminals should be installed at specific intervals using grounding clamps to maintain a reliable connection .

Best Practices

- o Lay grounding conductors parallel to the cable in the tray .
 - o Connect cable screens to the grounding system at both ends to reduce electrical noise and static buildup .
 - o Ensure compliance with NEC Article 392 for metallic trays, tray fill limits, and separation of power and data cables .
 - o Avoid placing bare copper conductors in aluminum trays in moist environments to prevent corrosion .
- Proper grounding in cable trays prevents electrical leaks, reduces shock hazards, minimizes interference, and ensures safe maintenance . Following these methods ensures both regulatory compliance and long-term system reliability.

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Cable tray wiring systems have excellent safety and dependability records. These excellent records are the result of cable tray's

A professional guide to installing electrical cable tray systems per NEC Article 392. Covers support,

Like trays, ducts are attached to walls and ceilings and, unlike trays, they are designed to protect the cables laid in

Cable Tray Installation Guide The correct installation of cable trays is crucial for establishing a reliable and efficient cable system. It

Discover the best practices for Cable Tray Grounding Wire installation. Learn key

Where cable tray systems contain only signal and communication circuits that operate at low energy levels, power grounding per

Learn why earthing and bonding in cable tray systems is essential for electrical safety, grounding, compliance, and

Occasionally a separate ground wire is not run in a tray containing single conductor cables. This is the only case where the cable

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

In addition to simply routing and protecting cables a cable tray system must provide protection to life and property

Cable trays are not raceways, but they are treated as a structural component of a facility's electrical system. Cable trays are a part of

To ensure your cable tray system operates securely and complies with NEC standards, grounding and bonding are

If a wire mesh cable tray is supporting cable with a built-in equipment grounding conductor or control or signal cables, then the tray

Posted on: 02/06/2025 The correct way to ground and bond a cabling system is to ensure all conductive components, such as cable

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Metal raceways, cable trays, cable armor, cable sheath, enclosures, frames, fittings, and other metal non-current

SOLID-BOTTOM CABLE TRAY Providing additional cable protection, solid-bottom cable tray is sometimes preferred to support and

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