

## High-voltage cable trays must be grounded



### Overview

Cable tray systems must be installed as a complete unit, ensuring electrical continuity and support for cables.

### Key Takeaways

Yes, high-voltage cable trays must be grounded to ensure electrical safety, fault protection, and compliance with NEC standards. Importance of Grounding

Grounding high-voltage cable trays is essential to minimize the risk of electric shock, equipment damage, and fire hazards. Cable trays are part of the path for ground fault currents, and proper bonding ensures that any fault current is safely directed back to the power source, reducing the potential for dangerous voltage buildup on the tray system .

#### NEC and Industry Standards

The National Electrical Code (NEC) Article 392 governs cable tray systems, requiring metallic trays to be bonded and connected to the building's grounding system. NEC Article 250.96 specifies that all metallic cable trays must be grounded, regardless of whether the tray itself serves as an equipment grounding conductor (EGC), . NEMA Standard VE-2 and CTI Technical Bulletins also provide guidance on bonding and grounding practices for power and instrumentation circuits .

#### Grounding Methods

There are several acceptable methods for grounding cable trays:

- **Tray as EGC:** In qualifying facilities, the metallic tray itself can serve as the equipment grounding conductor if it meets cross-sectional area and continuity requirements .
- **Separate EGC Conductor:** A dedicated grounding conductor can be installed inside or attached to the tray, bonded to each tray section using grounding clamps .
- **EGC within Cables:** Multi-conductor cables with individual EGCs can provide grounding, but the tray must still be bonded back to the power source . Bonding jumpers are used to maintain electrical continuity across tray sections, and both side rails of the tray must be bonded together to the next section . For aluminum trays, insulated conductors are recommended to prevent electrolytic corrosion when connecting to bare copper EGCs .

#### Special Considerations

- **High-voltage systems:** Proper grounding is critical due to higher fault currents and potential hazards.
- **Non-metallic trays:** While they do not conduct electricity, grounding may still be required for lightning protection, noise reduction, and electromagnetic interference mitigation .
- **Separation of circuits:** Power and control cables should be separated to prevent interference, but grounding remains mandatory for metallic trays .

#### Summary

Grounding high-voltage cable trays is mandatory for safety and compliance. Metallic trays must be bonded to the building grounding system, either by using the tray as an EGC, installing a separate EGC, or using cables with integrated EGCs. Proper bonding ensures electrical continuity, protects personnel and equipment, and aligns with NEC and industry standards .

## Article Content

### 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

### Equipment Grounding Conductors for Cable Tray Systems

Connections of conduits and/or cables (Bonding and/or EGC) to the cable trays should be made with UL Listed Connectors that are

### NEC Standards for Cable Trays: Grounding, Fill Capacity

Grounding is one of the most critical NEC considerations when installing metallic cable trays. To comply with code

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

Cable Tray Grounding: Power, Instrumentation, and Telecommunications

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

Bonding and Grounding

All conductors of a circuit, including the neutral and equipment grounding conductors (EGCs), must be in the same raceway, cable,

Grounding & Bonding Wire Mesh Cable Trays

NEC Article 392 clearly outlines the grounding and bonding requirements for cable tray systems, establishing the

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

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

Understanding Cable Tray Grounding: A Comprehensive Guide

Cable tray grounding is an indispensable aspect of electrical installations that plays a pivotal role in ensuring safety,

Grounding & Bonding Wire Mesh Cable Trays

However, while wire mesh trays offer mechanical and thermal advantages, proper grounding and bonding are critical

Cable Tray Grounding: Electrical and Non-Power Conductors

Grounding/ Earthing Cable Trays The ground network consists of all metal parts of a building connected together:

FAQ | Cable Tray Institute

Question: Can high voltage cables be installed in cable trays? Answer: Yes — NEC permits type MC (Article 330) and type MV

### Cable Tray Installation

Cable tray systems must be installed as a complete unit, ensuring electrical continuity and support for cables. Each tray run should

grounding cable trays

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

392.18 (H) Cable Trays. Marking.

2011 Code language: 392.18 (H) Marking. Cable trays containing conductors rated over 600 volts shall have a permanent, legible

### 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

### Cable Separation Standards

Why It Matters: High-voltage and limited energy circuits routed too closely can cause cross-talk, distortion, or packet

### 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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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

