

How far should cable trays be grounded for safety



Overview

The owner, engineering firm, or their designated representatives should provide approval of the inspection.

Key Takeaways

Cable trays should be grounded at each section or at regular intervals using grounding clamps or conductors to ensure electrical continuity and safety. General Grounding Requirements

Metallic cable trays must be grounded according to NEC Article 250.96 and NEC Article 392. This applies whether the tray is used as an equipment grounding conductor (EGC) or in addition to individual cable EGCs. Grounding ensures that fault currents are safely conducted to the main grounding system, preventing electric shock and equipment damage .

Recommended Grounding Intervals

- Each tray section or alternate sections: While the NEC does not mandate exact spacing, it is considered best practice to bond each cable tray section or at least every other section using grounding clamps .
- Flexible jumpers: When trays are used as grounding points, flexible jumpers with appropriate lugs should connect the tray sections to maintain electrical continuity .

- Critical installations: In industrial, rail, or solar power projects, independent grounding lines may be installed at specific intervals using braided copper or galvanized conductors for enhanced safety .

Additional Considerations

- Material compatibility: Avoid bare copper in aluminum trays to prevent electrolytic corrosion; use insulated conductors with insulation removed only at bonding points .
- Tray as EGC: Steel trays should not be used as EGCs for circuits with ground-fault protection above 600 A, and aluminum trays above 2000 A .
- Separation of power and signal cables: To reduce electromagnetic interference, power and signal cables should ideally be in separate trays or separated by barriers, following IEEE 518 guidelines .

Practical Tip

For most installations, grounding every tray section or at intervals of 10–20 feet is a common industry practice, ensuring mechanical stability and reliable fault current paths. Always verify grounding conductor sizing according to NEC tables to maintain compliance and safety . By following these practices, cable tray systems remain safe, electrically continuous, and compliant with regulatory 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

Practices for grounding and bonding of cable trays

Aluminum cable trays shall not be used as equipment grounding conductors for circuits with ground-fault protection above 2000

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

Cable Tray Grounding Wire: What You Need to Know

Discover the best practices for Cable Tray Grounding Wire installation. Learn key requirements, safety tips, and

Earthing & Bonding in Cable Tray Systems

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

Grounding & Bonding Wire Mesh Cable Trays

Grounding and bonding are essential for safety. They protect personnel and equipment by providing a safe path for

NEC Article 392 Guide: Ensuring Compliance for Cable Tray Systems

Master NEC Article 392 with our comprehensive guide. Learn essential cable tray requirements for installation,

Equipment Grounding Conductors for Cable Tray Systems

NEC Section 250-51 states that the effective grounding path shall be: permanent and electrically continuous, have the capacity to

Grounding Inspection of Steel and Aluminum Cable Tray Systems

For safety reasons, the grounding should be right before the wire is energized. This is true for cable tray, conduit, cable, or any

Cable Tray Installation Rules (NEC 392) - Electrical Trader

Core rules for selecting, installing, grounding, and filling cable trays—clearances, materials,

Practices for grounding and bonding of cable trays

The metal in cable trays may be used as the EGC as per the limitations of table 392.60 (A).

Grounding & Bonding Wire Mesh Cable Trays

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

Grounding Inspection of Steel and Aluminum Cable Tray Systems

The owner, engineering firm, or their designated representatives should provide approval of the inspection. For safety reasons, 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

Equipment Grounding Conductors for Cable Tray Systems

The Equipment Grounding Conductor is the electrical circuit's safety conductor. When designing a cable tray wiring system, the

5 Golden Rules for Safe & Compliant Cable Tray Installation

Ensure safety and compliance in your cable tray installation. Discover the 5 golden rules covering NEC standards,

Precautions for Cable Tray Installation

When the cable tray is installed vertically, the cable tray within 2 meters from the ground should be equipped with a protective cover.

Cable Tray Grounding: Power, Instrumentation, and

Cable tray systems that contain signal and communication circuits should be grounded and, in some situations, shielded from

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