Cable tray is grounded

Article Overview

Cable trays are grounded by connecting all metallic sections to the facility's grounding system using grounding conductors and bonding clamps to ensure electrical continuity and safety.

Purpose of Grounding

Grounding a cable tray provides a low-impedance path for fault currents, protecting personnel and equipment from electric shock, fire hazards, and equipment damage due to overvoltage or insulation failure. It also helps dissipate energy from lightning strikes and reduces electromagnetic interference (EMI) in sensitive systems .

Grounding Methods

o Direct Connection to Grounding System: Metallic cable trays must be connected to the facility's main grounding system. This is typically done using a copper grounding conductor attached to the tray with bonding clamps .

o Bonding Between Tray Sections: Each section of the cable tray should be electrically bonded to adjacent sections to maintain continuity. This can be done at every joint or at alternate sections, ensuring that fault currents can flow safely through the tray system .

o Equipment Grounding Conductor (EGC): If multi-conductor cables with individual EGCs are installed in the tray, these conductors should be bonded to the tray. The tray itself can sometimes serve as the EGC if it meets cross-sectional area requirements specified in NEC Article 392.60(A), but steel trays should not be used as EGCs for circuits with ground-fault protection above 600 A, and aluminum trays above 2000 A .

o Material Considerations: Avoid using bare copper conductors in aluminum trays to prevent electrolytic corrosion. Instead, use insulated conductors and remove insulation only at bonding points with tin- or zinc-plated connectors .

Installation Best Practices

o Ensure low grounding resistance, ideally 4 ohms or less, to maximize safety and system stability .

o Keep grounding conductors clear of flammable materials and corrosive environments .

o Maintain proper mechanical anchoring of conductors to prevent displacement under fault conditions .

o Follow local and international standards such as NEC, IEC, or IS for grounding and bonding .

Summary

Proper cable tray grounding involves connecting all metallic trays to the main grounding system, bonding tray sections, and using appropriate conductors and connectors to ensure safety, compliance, and reliable operation of the electrical system. This reduces the risk of electric shock, equipment damage, fire, and EMI while maintaining system integrity .

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Our existing cable tray system is heavy bonded and grounded. If this is a code violation, could you refer me to the publication?

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

Regardless of which type of equipment grounding system used, cable tray systems must be electrically continuous and effectively

Types of Cable Typically Used in Cable Tray The purpose of a cable tray system is to support, route, and protect cable as part of the

If you must earth a tray for functional reasons (static discharge, RFI), do it at one end only. Bonding both ends can form

Due to this fact, the steel trays tend to be larger or thicker to manage the same power. Aluminum Trays: These are

Cable ladder and cable tray systems The following recommendations are intended to be a practical guide to ensure

When firmly attached to building steel with threaded connections and galvanized components cable tray installations are adequately

The Cable Tray Institute (CTI) was founded in 1991 to support the cable tray industry by engaging in research, development,

All metallic cable trays must be grounded as outlined in NEC Article 250.96, even if the tray isn"t being used as an

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

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

Learn how to verify the safety of your electrical systems with our guide on testing cable tray

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

Metallic Cable Trays Cable tray may be used as the Equipment Grounding Conductor (EGC) in any installation where

Cable tray is alternatives to wire ways and electrical conduits, which completely enclose cables. Study types of cable

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