

Grounding inside cable tray shaft

Article Overview

Cable trays inside a shaft must be properly grounded and bonded to provide a low-impedance path for fault currents, ensuring safety and compliance with NEC standards.

Key Principles of Grounding Cable Trays

1. Use of Cable Tray as Equipment Grounding Conductor (EGC): Metallic cable trays can serve as the EGC if they meet the minimum cross-sectional area requirements specified in NEC Table 392.60(A) and are properly bonded across sections . This allows the tray itself to carry fault currents safely to the grounding system. 2. Continuous Electrical Path: All sections of the cable tray must be electrically continuous. Bonding jumpers, clamps, or splice plates should be used to bridge gaps between tray sections, ensuring a reliable path for fault currents . Even if the tray is mechanically continuous, electrical continuity must be verified. 3. Grounding Conductors in the Tray: If individual cables have their own EGCs, these should be bonded to the tray at each or alternate sections using grounding clamps. This not only provides electrical continuity but also mechanically secures the conductors to prevent displacement under fault conditions . 4. Material Considerations:

- Avoid bare copper conductors in aluminum trays to prevent electrolytic corrosion; insulated conductors with exposed ends at bonding points are preferred .
 - Steel trays should not be used as the sole EGC for circuits with ground-fault protection above 600 A, and aluminum trays above 2000 A .
5. Safety and EMI Protection: Proper grounding reduces the risk of electric shock, fire hazards, and electromagnetic interference (EMI) in sensitive environments. In shafts containing b...

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To meet this requirement some manufacturers recommend that the cable tray system be bonded to the facility ground

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Steel and aluminum cable tray systems are excellent equipment grounding conductors if they are properly designed, specified,

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IEC Standard for Cable Tray: Complete Technical Guide

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Practices for grounding and bonding of cable trays

A bare copper equipment grounding conductor should not be placed in an aluminum cable tray due to the potential for electrolytic

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Cable Tray Installation and Cable Handling Method Statement

Efficient cable tray installation and proper cable handling are critical for ensuring the reliability and safety of electrical systems.

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Practices for grounding and bonding of cable trays

All metallic cable trays shall be grounded as required in Article 250.96 regardless of whether

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