

Do cable trays need to be bridging each other

Article Overview

Cable trays generally require bridging for grounding and conductive continuity, but the method depends on the tray material and installation standards.

Purpose of Bridging

Bridging in cable trays is primarily used to ensure electrical continuity and proper grounding across sections of metallic trays. This helps prevent potential differences between tray sections, reduces the risk of electrical shock, and allows the tray to serve as an equipment grounding conductor (EGC) if compliant with NEC requirements. Bridging also maintains structural integrity in some installations, though its main function is electrical safety.

Material-Specific Guidelines

- o Galvanized Steel Trays: Bridging can be achieved using anti-loosening nuts or washers on connecting bolts to ensure a conductive connection between tray sections.
- o Stainless Steel and Aluminum Alloy Trays: These require dedicated grounding bolt holes for bridging, rather than relying on standard connection plates.
- o Connection Practices: For metallic trays, connectors should use at least two sets of galvanized steel bolts with anti-loosening gaskets or insulated multi-strand copper wires with crimped tinned copper connectors. The copper wire cross-section should be greater than 4.0 mm² to ensure proper conductivity.

NEC Compliance

According to NEC Article 392, metallic cable trays can serve as grounding conductors if properly installed. Bridging ensures that all tray sections are electrically continuous, which is critical for safety and compliance. Nonmetallic trays, such as fiberglass or plastic, do not require bridging because they are not conductive.

Practical Recommendations

- o Always follow the manufacturer's instructions for bridging and grounding.
 - o Use anti-loosening hardware to maintain reliable connections over time.
 - o Ensure that bridging does not interfere with cable installation or violate minimum bend radii.
 - o For stainless steel or aluminum trays, use special grounding bolt holes rather than standard connection plates to achieve proper grounding.
- In summary, bridging is necessary for metallic cable trays to maintain electrical continuity and grounding, but the exact method depends on the tray material and installation standards. Nonmetallic trays do not require bridging. Proper bridging ensures safety, compliance with NEC Article 392,

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and reliable operation of the electrical system.

Cable Trays are rigid structural system, comprising of unit or assembly of units/sections and associated fitting for

Typical examples of fittings include elbows, tees, crosses, and risers. Each of these fittings are available in various radii and bend

If an EGC cable is installed in or on a cable tray, it should be bonded to each or alternate cable tray sections via grounding clamps

"A cable tray is a support structure that seems to be a bridge that supports wires in the air". This misconception leads

If these circuits were installed in cable tray, the conductor sizes would not need to be increased since the parallel conductor derating

Hot dip galvanized and stainless-steel cable trays can be stored without cover but should be loosely stacked, elevated off the ground

The short answer is no. Due to their exposure to the open air because of the cable trays, the wires contained within

Cable Tray System FAQs National Electrical Code Question: We have a customer who would like to install the majority of cable tray

Cable ladder is more commonly used where heavier cables need to be carried, but is more expensive. Apart from the

Installation of Cable in Cable Trays ensures proper routing, cable management, NEC compliance,

Discover over 100 expert answers about cable trays, covering key topics like material selection, load capacity,

In industrial settings, electrical and instrumentation (E&I) cable trays or bridge racks play a critical role in organizing and supporting

We have summarized the precautions for cable tray installation to help customers quickly and correctly

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Where power and data cables are installed within the same containment system or within close proximity to each other, a barrier strip

This guide covers cable ladder systems, cable tray systems, channel support systems and associated supports intended for the

Cable tray installation guidelines for industrial EPC projects with support spacing, earthing, routing, safety and real site

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