

Cable Tray Ground-Based Reinforcement Solution



Overview

Widths of 8 and 15 millimetres enable flexible adjustment to different cable trays, cable ladders and cable volumes.

Key Takeaways

Ground-based reinforcement for cable trays involves using the tray itself as an equipment grounding conductor (EGC) or installing dedicated grounding conductors and bonding hardware to ensure safety, compliance, and structural integrity. Using Cable Tray as an Equipment Grounding Conductor (EGC) Metallic cable trays can serve as the EGC if they meet NEC 2023 Article 392. 60(A) requirements.

This approach eliminates the need for separate grounding wires, reducing material and labor costs. Key considerations include: Tray Identification and Sizing: Straight sections and fittings must be marked with the cross-sectional area of metal, ensuring compliance with NEC Table 392. 60(B) for current-carrying capacity and fault protection.

Bonding Discontinuities: Where trays are mechanically discontinuous, properly sized bonding jumpers must connect sections to maintain a low-impedance path to ground. Connection to Panels: Bond the tray to main distribution panels, motor loads, and power panels using appropriately sized copper or aluminum conductors based on the largest overcurrent protection device. Safety Considerations: Only qualified personnel should service systems where the tray acts as the EGC, and bare copper should not be used in aluminum trays to prevent electrolytic corrosion; insulated conductors with tin or zinc-plated connectors are recommended.

Dedicated Grounding Solutions

For installations requiring separate grounding conductors, products like the nVent CADDY Wire Basket Tray Ground Bolt provide secure connections for each tray section. These bolts allow a ground wire to pass through and bond directly to the tray, ensuring UL compliance and reliable fault current paths.

Structural Reinforcement and Support

Cable trays must also be mechanically reinforced to handle cable weight and environmental conditions: **Support Systems:** Use brackets, splices, and mounting hardware to secure trays to floors, walls, or ceilings. Wire basket trays offer integrated sidewalls for high-volume cable containment and welded steel mesh for strength. **Corrosion Protection:** Steel or stainless steel trays can be galvanized or powder-coated to resist corrosion in industrial environments.

Mechanical Bonding: Grounding clamps not only provide electrical continuity but also mechanically anchor EGCs to prevent displacement under fault currents.

Best Practices

Evaluate whether the tray can serve as the EGC or if separate conductors are required based on installation environment and NEC compliance. Ensure all bonding jumpers and grounding connections are sized according to the largest overcurrent device. Use insulated conductors in aluminum trays to prevent corrosion.

Regularly inspect mechanical and electrical connections to maintain system integrity. By combining proper grounding techniques with robust mechanical support, cable tray systems can achieve both electrical safety and structural reliability, meeting industry standards and minimizing installation costs.

Article Content

Guide to cable support systems

Widths of 8 and 15 millimetres enable flexible adjustment to different cable trays, cable ladders and cable volumes. With the help of the matching SBV tightening strap locks and 576 spring chuck, the

MITA GRP CABLE SUPPORT SOLUTIONS CATALOGUE 2022

Constructed from glass reinforced thermoset resins, GRP is designed and manufactured with a structural integrity normally only associated with steel, but without their corrosion, weight and

GUIDE CABLE TRAYS TECHNICAL

NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian Electrical Code, Part I and the National Electrical Code®

Cable Tray Sleeper Design Details

The document provides details on the design of a cable tray mechanical support system, including specifications for cable tray sleepers, impeded steel plates, and concrete foundations.

Wire Basket Tray Ground Bolt | nVent CADDY

The nVent CADDY Wire Basket Tray Ground Bolt is a robust solution designed to ensure reliable grounding in cable tray installations where a separate ground

Practices for grounding and bonding of cable trays

If a wire mesh cable tray is supporting cable with a built-in equipment grounding conductor or control or signal cables, then the tray should have a low impedance path to a non-system ground to reduce

B-Line series Cable Tray Design Considerations

Our wind certification report provides you with list of acceptable B-Line series cable tray supports, fittings and covers based off of the environmental conditions, cable loading, and type of cable tray in your

Cable Tray Technical Guide A practical guide to product selection and ...

Cable tray length is selected based on the load to be supported, the distance between the supports (also referred to as the span), and handling and installation constraints.

Cable tray

So, whether specifying a major new project, or simply refurbishing existing facilities, choose ABB cable tray to deliver the most effective, reliable and long lasting support for your cabling needs.

Wire Basket Overhead Cable Tray Routing System Application Guide

The Wire Basket Overhead Cable Tray Routing System is composed of pathways, splices, mounting brackets, and accessories that allow the system to be configured for a wide range of applications and

Guide to cable support systems

A cable support system consists of cable support lengths and system components, such as cable support fittings, support elements, mounting elements and system accessories. The cable support

Seismic Bracing Ensures Stability and Safety of Cable Trays

Seismic bracing can enhance the stability and safety of cable trays during earthquakes and other vibration events, ensuring your cable system is secure and stable.

Decoding Cable Tray Support Structures: Tips and Insights

Discover efficient cable tray support structures for optimal cable management. Learn about hanger, wall-mounted, and Unistrut systems for safer

CABLE LAddEr TrAY

Cable tray system components and cable ladder tray system components have been declared electrically non conductive. An overall accuracy of surface resistance has been guarantee: surface

Cable Tray Sleeper Design Details

Cable tray widths range from 5 to 150 cm. Sleeper heights and impeded plate lengths vary depending on the cable tray width. Concrete foundations are either above or below ground, and their dimensions

Performance-based optimum seismic design of cable tray system

The seismic performance levels of cable tray systems are presented according to current seismic design codes. A performance-based optimum seismic design procedure for cable tray

Cable Tray Support Systems, Supplier, India

We are Manufacturer, Supplier, Exporter of Cable Trays, Cable Tray Support Systems, Horizontal Bend for Cable Trays, from Pune, Maharashtra, India. Standard Specifications Our Channel Sections are

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