Setting up cable tray jumpers



Overview

Whether you''re building a commercial setup or upgrading an industrial plant, proper cable tray installation ensures neat wiring, safe access, and easy maintenance.

Key Takeaways

Bonding jumpers are required at expansion joints and adjustable splices, but not at standard bolted splice plates if proper metallic continuity is maintained.

General Guidelines

For standard metallic cable tray systems, properly installed rigid splice plates provide electrical continuity between tray sections, meeting NEC requirements for grounding and bonding. In these cases, additional bonding jumpers are not necessary because the splice plates themselves maintain electrical continuity and safely conduct fault currents (NEC Section 392. 60 and 250.

96).

When Bonding Jumpers Are Required

Expansion Splices and Adjustable Fittings: Cable trays that include expansion joints or adjustable splices require bonding jumpers to maintain electrical continuity across the discontinuity. The jumper should be bolted directly to the tray channel, not to the splice plate bolts or pins. Long Runs and Outdoor Installations: For long cable tray runs, especially outdoors, bonding jumpers should be installed at intervals (typically every 15 m / 50 ft) and at both ends of the tray to ensure proper grounding and safety.

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Conduit Drop-

Outs: Any conduit or cable drop-outs from the tray should be bonded to the tray using a compression lug or grounding bushing to maintain continuity.

Installation Recommendations

Use 2 AWG soft drawn tin-plated copper stranded cable for jumpers, with flame-retardant PVC insulation resistant to abrasion, oil, and chemicals. Bolt each lug to a 5/16 square hole at the end of the tray channel. Do not use splice plate bolt locations for jumper connections.

Ensure that all metallic equipment enclosures and supports that may become energized are bonded back to the system's equipment grounding conductor. For standard bolted splice plates, use two steel or stainless steel bolts per side rail to reduce temperature rise and maintain fault current capacity.

Compliance and Safety

All cable tray installations must comply with the latest NEC, NEMA VE 2, and manufacturer instructions. Proper bonding ensures that fault currents are safely conducted, protecting personnel and equipment. Testing and verification of electrical continuity are recommended, especially for expansion joints and long runs.

By following these guidelines, cable tray systems will maintain proper grounding, electrical continuity, and compliance with safety standards.

Article Content

Cable Tray Installation

Whether you''re building a commercial setup or upgrading an industrial plant, proper cable tray installation ensures neat wiring, safe access, and easy maintenance. But before you lay the first

INSTALLATION GUIDE

To ensure that the complete ladder tray wiring system performs as designed, it is important that it is properly installed. Personal injury as well as property damage will result if proper installation and

Bonding Jumpers

A bonding jumper is required to be installed with adjustable splices and expansion splices. Install Bonding Jumpers by bolting each lug to a 5/16 square hole

Are Bonding Jumpers Required for Standard Cable Tray

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Learn when bonding jumpers are mandatory for cable trays and when UL-rated splice plates are sufficient to ensure electrical continuity and pass

5 Steps to Learn How to Install Cable Trays

Installing a cable tray system requires careful planning to ensure it can support the weight of the cables and adheres to electrical safety codes. Here is a step-by-step guide on how to install a

Cable tray manual

These documents: ANSI/NEMA VE-1, Metal Cable Tray Systems; NEMA VE-2, Cable Tray Installation Guidelines; and NEMA FG-1, Non Metallic Cable Tray Systems, are an excellent industry resource in

How to Bond Cable Tray

By understanding and properly implementing cable tray bonding procedures, professionals can ensure a safe, compliant, and efficient electrical infrastructure.

Cable Tray and Conduit Grounding per NEC Explained

Learn how to properly size bonding jumpers for cable trays and conduit. Understand EGC considerations, voltage levels, and oil tank grounding.

Cable Tray Installation SOP Guide | PDF | Electrical Connector

This document provides standard operating procedures for installing cable tray systems. It discusses receiving and unloading procedures, storage guidelines, common installation tools, and methods for

Mastering Cable Tray Installation | Step-by-Step Guide for a Seamless ...

Mastering cable tray installation is crucial for creating a safe, organised, and efficient cable management system. By following this step-by-step guide, you can ensure a seamless setup that

INSTALLATION GUIDE

We have more than a decade''s worth of experience making and designing quality cable tray and cable management systems. Our knowledgeable production team works closely with each customer to

Cable Tray SHIB NAL

Cable trays are not raceways, but they are treated as a structural component of a facility''s electrical system. Cable trays are a part of a planned cable management system to support, route, protect and

Cable Tray SOP

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Metallic cable trays shall be permitted to be used as equipment grounding conductors where continuous maintenance and supervision ensure that qualified persons service the installed cable tray system

Best practice guide to cable ladder and cable tray systems

Cable ladder and cable tray systems The following recommendations are intended to be a practical guide to ensure the safe and proper installation of cable ladder and cable tray systems

Cable Tray Installation

Cable Tray Installation – Complete Guide June 11, 2025 How about organizing your wiring with a cable tray system? Smart move. Whether you''re building a commercial setup or

How to Install Cable Tray: A Comprehensive Guide to Different

Welcome to our step-by-step guide on installing cable trays! In this video, we''ll explore the different types of cable trays available and provide detailed instructions for their installation.

Cable Tray Bonding Jumper Insights

The document discusses bonding jumpers for cable tray splice plates. It summarizes that: 1) Bonding jumpers are not required for standard metallic splice plates that connect cable tray sections, as the

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

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a practical reference regarding cable tray

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