

Installation of cable trays in elevator buildings

Article Overview

Elevator cabling can be safely supported on cable trays if proper design, load capacity, spacing, and code compliance are followed.

Cable Tray Selection and Material

Elevator cables are typically heavy and may carry high currents, so selecting a robust cable tray is essential. Common materials include steel, aluminum, and fiber-reinforced plastic (FRP), with aluminum being widely used due to its corrosion resistance and strength-to-weight ratio. The tray type can be ladder, ventilated trough, or solid-bottom, depending on the cable type, heat dissipation requirements, and environmental conditions. For elevator applications, ladder or ventilated trays are preferred to allow airflow and reduce heat buildup.

Load Capacity and Support

Cable trays must be designed to support the weight of elevator cables over the span between supports. Trapeze or swing supports are commonly used, with vertical hangers and cross members ensuring the tray remains level and stable. The spacing of supports should follow manufacturer recommendations and account for the weight and number of cables, typically with rung spacing of 150-230 mm (6-9 inches) for proper cable support. Overloading trays can lead to structural failure or cable damage.

Installation Guidelines

- o Plan the layout: The system designer should consider building codes, elevator specifications, and clearances from other trades.
- o Secure attachment: Use tray clips, hex nuts, and washers to attach trays to hangers, ensuring horizontal and vertical alignment.
- o Maintain bend radius: Elevator cables must not be bent beyond their minimum bend radius to prevent insulation damage.
- o Avoid human load: Cable trays are not designed to support personnel; they are strictly for cable support.
- o Environmental considerations: Choose materials and finishes suitable for the environment, such as galvanized steel for moisture-prone areas.

Compliance and Safety

Elevator cable installations on trays must comply with the National Electrical Code (NEC) Article 392, OSHA regulations (29 CFR 1910.305), and any local building codes. Only qualified personnel should perform installation, and all wiring methods must be listed for use in cable trays. Flexible cords are prohibited as a

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replacement for fixed wiring due to fire and insulation degradation risks .

Best Practices

- o Use ventilated trays to prevent heat accumulation.
- o Plan for future expansion by sizing trays for additional cables.
- o Ensure proper grounding and bonding of trays to prevent electrical hazards.
- o Regularly inspect and maintain trays to detect corrosion, loose fittings, or cable damage. By following these guidelines, elevator cabling can be safely and efficiently installed on cable trays, ensuring compliance, reliability, and long-term performance.

For cable tray installers: NEMA VE 2 is intended as a practical guide for the proper installation of cable tray systems. Cable tray

Make expansion connections wherever cable tray and trunking are crossing building expansion joints. Cable trays are to be made

Learn everything about cable tray installation with our complete guide. Discover types, steps, and safety tips for

This document provides guidance on best practices for installing cable ladder and cable tray systems, including channel support

5. Cable tray installation shall preferably be installed flat in buildings or operating structures. Tray shall run as far as

Cable tray systems are to be installed so they are accessible. If possible 300mm minimum should be left above or between installed

This document provides a method statement for installing thread rod supports and cable trays using a boom or scissor lift.

Core rules for selecting, installing, grounding, and filling cable trays--clearances, materials, separation, and bonding

When cable trays have to connect two buildings and have to go through accessible trenches, the minimum size of the trenches must

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Download free method statement for title: installation of cable trays and ladders. Step-by-step guide, checklist, and safety procedures

This document provides procedures for installing cable trays according to international standards. It describes inspecting and storing

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been

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

To ensure that the complete ladder tray wiring system performs as designed, it is important that it is properly installed. Personal

The purpose of this article is to define the sequence and methodology for the installation of electrical cable trays,

Welcome to our step-by-step guide on installing cable trays! In this video, we'll explore the

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