Which cable tray should the elevator line run through

Overview

Cable Tray Technical Guide A practical guide to product selection and. The choice of method should be discussed with a local inspector. The best decision.

Key Takeaways

Elevator cables should typically run through ladder-type or ventilated trough cable trays, sized and installed according to NEC fill and support requirements.

Recommended Cable Tray Types

Ladder trays are the most common choice for elevator power and control cables because they provide excellent ventilation, which helps dissipate heat from high-current conductors, and allow easy attachment points for securing cables along the rungs. Ventilated trough trays are also suitable, especially for smaller control or instrumentation cables, as they provide continuous support and prevent sagging between rungs. Solid-bottom trays are generally avoided for elevator cables unless protection from debris or liquids is required, as they limit airflow and reduce ampacity.

Material Considerations

Cable trays for elevator systems are commonly made from aluminum or steel, with aluminum preferred for its corrosion resistance and lighter weight. In corrosive or high-moisture environments, fiberglass-reinforced plastic (FRP) trays may be used for their non-conductive and corrosion-resistant properties.

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

Installation Guidelines

Fill limits: NEC guidelines recommend that cable trays should not exceed 40–50% of the tray's cross-sectional area to prevent overheating and allow future expansion. Support spacing: Ladder trays can span up to 20 feet between supports depending on load, while ventilated troughs may require closer spacing for smaller cables. Cable securing: Cables should be tied loosely to avoid jacket deformation, and power cables should be separated from control or signal cables to prevent electromagnetic interference.

Routing: Minimize bends and use rollers or sheaves during installation to prevent damage to cable jackets.

Safety and Compliance

Elevator cable installations must comply with NEC Article 392 and any local building codes. Proper tray selection, fill management, and secure installation reduce risks of overheating, mechanical damage, and fire hazards. Always consult the manufacturer's installation guides and NEC requirements for the specific cable type and voltage rating.

In summary, ladder trays are preferred for elevator power cables, while ventilated trough trays are suitable for control and instrumentation cables. Proper sizing, material selection, and adherence to NEC fill and support rules ensure a safe, reliable, and maintainable installation.

Article Content

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

The choice of method should be discussed with a local inspector. The best decision may be to extend only the cables, creating a discontinuity in the cable tray.

A Guide to Installing and Supporting Electrical Cable Trays

This guide covers the critical steps, from selecting the right electrical cable tray and performing accurate cable fill calculations to managing a safe cable pull through

NEC Article 392 Requirements for Cable Tray Systems

Cable tray systems are not permitted in hoistways (elevator shafts) or in locations where they would be subject to severe physical damage. The hoistway restriction exists because moving

FactSheet

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

The type of cable tray (e.g., solid, ven-tilated), ampacity requirements, and the type and voltage rating of cable used determines the allowable fill for each cable tray — ventilat-ed cable trays provide for the

Elevator Traveling Cable

Traveling cable is typically mounted in the elevator hoistway, where each end is terminated, and alternately takes the full load of the suspended cable as the car moves up and down.

Document DICOS

Cable trays of less than 12 feet (ft.) in length should be supported in a minimum of one location, and trays over 12 ft. in length should be supported at a minimum of two locations.

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 Manual: NEC Article 392 Guide

Small diameter cables may exit the ventilated trough cable tray through the bottom ventilation holes as well as out the top of the cable tray. For installations where the cables exit the bottom of the cable

Elevator Traveling Cable Design Insights | PDF | Cable | Wire

1) Elevator traveling cable is a specialized cable that transmits power and signals between the elevator car and controller. It must withstand millions of flex cycles over its expected 20-year lifespan. 2) The

910533-3_EN

High Voltage cables are always laid on separate cable trays which are at least 30 cm from the Low Voltage cables and at least 80 cm from the Extra Low Voltage Installation cables.

Cable tray manual

INTRODUCTION The B-Line series Cable Tray Manual was produced by our technical staff. We recognize the need for a complete cable tray reference source for electrical engineers and designers.

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

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

SOLID-BOTTOM CABLE TRAY Providing additional cable protection, solid-bottom cable tray is sometimes preferred to support and protect numerous small instrumentation and control cables.

Cable Tray Spacing Standards for Installation and Safety

Key Factors Impacting Cable Tray Spacing Understanding cable tray spacing is key to meeting safety regulations and maintaining system

FactSheet

Overloading cable trays Cable trays come in a wide variety of sizes. The appropriate size and number of cable trays depends directly on the number and size of conductors intended and the allowable fill

Complete cable tray manual for electrical engineers and designers

How to design cable tray? Most projects are roughly defined at the start of cable tray design. For projects that are not 100 percent defined before design start, the cost of and time used in

Cable Tray Ladder Trunking Wire Basket Installation Guidelines

Cable trays shall be cut along a line of plain metal and not through perforations. Burrs or sharp edges shall be removed prior to the installation of tray sections or accessories.

Best Practices for Installing Cables in Trays

Learn the best practices for installing cables in trays. This guide covers essential steps, technical requirements, and key details for efficient cable

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

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved

Contact Us

Continue your research online:

Website: https://ensaa.es
Technical inquiry: https://ensaa.es/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ENSAA OPTICAL NETWORKS - All rights reserved