

RIVO MULTITRADE OPTICAL SYSTEMS

How are outdoor cable trays laid



Overview

These cable tray systems serve as efficient alternatives to traditional wireways and electrical conduits, which fully enclose cables.

Key Takeaways

Outdoor cable trays are installed by selecting the appropriate tray type and material, mounting supports, securing trays, routing cables, and ensuring compliance with environmental and safety standards. **Material and Tray Selection**

For outdoor installations, material choice is critical due to exposure to moisture, UV radiation, and corrosive elements. Common materials include hot-dip galvanized steel for general outdoor use, 316 stainless steel for harsh marine or chemical environments, and fiberglass-reinforced plastic (FRP) for chemical resistance and non-conductivity . The ladder-type tray is preferred for heavy power cables because it provides strength, ventilation, and long support spans, while solid-bottom or trough trays protect sensitive cables from debris and moisture .

Support Structures

Cable trays are mounted using trapeze hangers, wall brackets, or center-span supports anchored to structural elements like walls, poles, or concrete pads . Supports are typically spaced according to the tray type and load, ensuring the tray remains level and can handle the weight of cables and environmental loads such as wind or snow.



Installation Steps

- **Planning the Route:** Determine the cable path, avoiding prohibited areas like hoistways, and account for bends, risers, and branches using fittings such as tees, horizontal and vertical bends, and reducers .
- **Mounting Supports:** Install hangers or brackets at calculated intervals to support the tray along the entire route.
- **Assembling Trays:** Connect straight sections using splice plates and secure with bolts. Install bends, tees, and risers as needed to navigate obstacles.
- **Securing Cables:** Lay cables in the tray, maintaining fill limits (typically 40% for power cables, 50% for control cables) and separating high-power and low-power lines to prevent electromagnetic interference .
- **Covers and Hold-Downs:** Install covers if required for protection against debris, moisture, or unauthorized access, and secure them with hold-down clamps.
- **Grounding and Bonding:** Metallic trays must be grounded according to NEC standards to ensure safety and prevent electrical hazards .

Environmental Considerations

- Use UV-resistant cables for sunlight exposure.
- Allow for thermal expansion with expansion splice plates.
- Consider corrosion resistance based on climate, humidity, and chemical exposure .
- Maintain vertical clearance (at least 12 inches) for maintenance access .

Compliance and Safety

Follow NEC Article 392 for installation rules, including cable type restrictions, fill limits, separation, grounding, and prohibited areas . Proper installation ensures long-term reliability, reduces maintenance, and prevents hazards like overheating, fire, or mechanical failure. By carefully selecting materials, planning the route, and following proper support and grounding practices, outdoor cable trays can be laid efficiently and safely, providing a durable and accessible pathway for electrical and communication cables.

Article Content

What is an Outdoor Cable Tray and How Is It Used?

The installation process for outdoor cable trays involves several steps, ensuring proper alignment and support for

Cable Tray Installation

Whether you're building a commercial setup or upgrading an industrial plant, proper cable tray installation ensures

Electrical Cable Tray Systems: Types, Installation, Fill Calculations ...

Proper cable installation in cable trays follows specific practices to ensure cable integrity, safety, and ease of future

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

Best Practice Guide to Cable Ladder and Cable Tray Systems

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

Explaining NEC Article 392 on Cable Trays

NEC Article 392 explains cable trays, their components, appropriate wiring methods for cable trays, and instances

Types of Cable Trays: Ladder, Perforated, Basket, Solid & Channel

Explore all types of cable trays—ladder, perforated, basket, solid, and channel. Learn their uses, materials, pros,

Cable Tray Installation Procedure Guide

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

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

Cable Tray Types and Sizes

These cable tray systems serve as efficient alternatives to traditional wireways and electrical conduits, which fully enclose cables.

Understanding Cable Tray Grounding: A Comprehensive Guide

Cable tray grounding is an indispensable aspect of electrical installations that plays a pivotal role in ensuring safety,

Cable Tray Technical Guide A practical guide to product selection

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

CABLE TRAY SYSTEMS GUIDE

The Ladder Tray features light, rugged, tubular steel construction. It is designed for mechanical support and strain relief in long runs

Cable Tray Cable Ladders: A Comprehensive Guide to Installation and ...

Cable trays and cable ladders are indispensable components in modern electrical wiring systems, providing organized

Tray Installations

Tray Installations The placement of cables, ducts, and conduits can be done using cable trays – for both outside plant (OSP) and

Practices for grounding and bonding of cable trays

A bare copper equipment grounding conductor should not be placed in an aluminum cable tray due to the potential for electrolytic

Difference Between Cable Tray and Cable Trench | Hutaib Electrical

Read about the differences between cable trays and cable trenches, their applications, benefits, and how Hutaib

B-Line series Cable Tray Design Considerations

Is your cable tray system optimized for safety, dependability, space and cost savings? Cable tray (or cable ladder) systems are a

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: <https://rivomultitrade.co.za>

Technical inquiry: <https://rivomultitrade.co.za/contact.html>

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

