

Low-voltage cable tray materials



Overview

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

Key Takeaways

Low-voltage cable trays are commonly made from galvanized steel, aluminum, stainless steel, and fiberglass-reinforced plastic (FRP), with the choice depending on environmental conditions, corrosion resistance, and installation requirements.

Galvanized Steel Galvanized steel is widely used for industrial and commercial low-voltage cable trays due to its high strength, durability, and corrosion resistance provided by a zinc coating. It is suitable for indoor and outdoor applications, especially when hot-dip galvanizing is applied to protect against moisture and environmental exposure . **Aluminum** Aluminum trays are lightweight, naturally corrosion-resistant, and non-magnetic, making them ideal for suspended installations or areas where weight is a concern. Aluminum also provides good EMI shielding, which is important when low-voltage data or communication cables run near high-voltage lines . **Stainless Steel** Stainless steel, particularly AISI 316L, is used in harsh or highly corrosive environments, such as chemical plants, marine settings, or food and pharmaceutical industries. Its high chromium and molybdenum content enhances corrosion resistance, making it suitable for long-term durability in extreme conditions . **Fiberglass-Reinforced Plastic (FRP)** FRP trays are non-conductive, lightweight, and highly resistant to chemical corrosion, making them ideal for industrial plants, coastal areas, or marine environments. They are particularly useful where electrical isolation is required or in areas with high humidity and chemical exposure .

Additional Considerations

- **Indoor vs. Outdoor:** Outdoor trays require corrosion-resistant materials like aluminum or hot-dip galvanized steel, while indoor trays may use standard galvanized steel or aluminum .
- **EMI/RFI Protection:** For low-voltage signal cables, solid-bottom aluminum or metallic trays can act as a Faraday cage to reduce electromagnetic interference .
- **Plenum Spaces:** In air-handling ceilings, trays may need low-smoke, zero-halogen (LSZH) materials or fire-retardant coatings .
- **Accessories and Installation:** Proper connectors, brackets, elbows, and reducers are essential to maintain structural integrity and safety, regardless of the tray material . Choosing the right material ensures mechanical strength, corrosion resistance, electrical safety, and compliance with standards for low-voltage cable installations, while also considering environmental and operational requirements.

Article Content

How to Choose Cable Tray for Low Voltage System

Discover a professional 5-step guide on how to choose the right cable tray for low voltage system. Learn about types,

Cable Tray Installation Rules (NEC 392) – Electrical Trader

Materials: Choose the tray material - aluminum, steel, or FRP - based on environmental conditions and load

Low Voltage Cable Tray

Low voltage cable trays originally come from aluminum, plastic, and galvanized steel materials. All cable

Cable Tray Selector

MP Husky's cable tray selector for choosing the correct tray type (ladder, solid bottom, perforated, wire

Low Voltage VS High Voltage Cable Trays

Low Voltage Cable Trays: Low voltage trays are typically constructed from materials that are lighter and less robust,

Cable Tray Systems

Our full line of cable tray and cable tray accessories are available in a downloadable brochure that can be

GUIDE CABLE TRAYS TECHNICAL

IEC 60364: "Low Voltage Electrical Installations" Standard EN 50174-2: "Information technology – Cabling installation" Practical

Types of Cable Typically Used in Cable Tray

Communication Cables – types CMP, CMR, CMG, CM, CMX Fire Alarm Cables – type NPLF – NPLFP, FPL-FPLP (CI) Type TC –

Cable tray manual

Where cable tray wiring systems with current carrying conductors are installed in a dust environment, ladder type cable trays should

Type of Cable Tray

Cable Tray Materials: Most cable tray systems are fabricated from a corrosion-resistant metal (low-carbon steel, stainless steel or an

Cable Tray Types and Sizes

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

Selecting the right materials for cable tray use at low temperatures

Selecting the right materials for cable tray use at low temperatures From the freezing cold of Antarctica to the frigid pipelines of

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

Top 7 Types of Cable Trays and Their Applications

Conclusion Understanding the different types of cable trays and their applications is crucial for designing safe, efficient,

Cable Tray Types & Installation Guide | Enagalxy

Learn cable tray types, uses, and installation basics to support safe, efficient electrical and water supply pipe systems in your project.

Cables Allowed in NEC Tray Applications

Cables Allowed in NEC Tray Applications Cable tray is one of the most common methods of supporting wire and cable. There are

Cable Tray | Wire Mesh, Ladder Tray and More Wire Management

Cable trays and baskets are designed to help support and route cable bundles in an organized manner along ceilings or walls. Shop

Type of Cable Tray Introduction Cable Tray Materials Electrical

Cable trays have become a necessary part of industrial and commercial construction. Cable trays are capable of supporting all types

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