Factory Requirements for Cable Trays



Overview

This guide for engineers and installers has been developed by ABB as a practical reference regarding cable tray characteristics, installation, and requirements.

Key Takeaways

Cable trays must be manufactured to meet mechanical, electrical, and environmental standards, ensuring durability, safety, and compliance with IEC 61537 and other relevant regulations.

Material Selection and Corrosion Resistance

Cable trays are typically made from steel, stainless steel, aluminum, or fiber-reinforced plastics (FRP), with material choice depending on environmental conditions and load requirements. Steel trays may be pre-galvanized or hot-dip galvanized to resist corrosion, while stainless steel (e.g., AISI 316L) offers high resistance to chlorides and chemical exposure. Aluminum provides excellent corrosion resistance due to its natural oxide layer and is lightweight, while FRP trays offer high strength-to-weight ratios and chemical resistance.

Mechanical and Structural Requirements

Factories must ensure that cable trays can withstand mechanical loads, including the weight of cables, environmental forces, and external impacts. This involves load testing according to IEC 61537, verifying that trays maintain structural integrity under specified conditions. Tray components, such as rungs, side rails, and mesh, must be fabricated to precise tolerances to maintain spacing, support, and minimum bend radii for cables.

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Electrical and Safety Compliance

Metallic cable trays often serve as equipment grounding conductors, so factories must ensure electrical continuity across joints and fittings. Materials and coatings must also meet fire resistance and heat tolerance requirements, particularly for installations in critical facilities like hospitals or power plants. Proper ventilation and fill ratios are essential to prevent overheating and maintain cable performance.

Manufacturing Standards and Quality Assurance

Cable trays must comply with international and national standards, including IEC 61537, NEC Article 392, and CE marking for European markets. Factories are required to implement quality management systems, conduct regular audits, and perform mechanical, electrical, and corrosion tests. Components should be compatible with standard fittings, bends, risers, and accessories to ensure seamless installation.

Additional Considerations

Surface finishes: Galvanization, powder coating, or anodizing to enhance durability. Tray types: Ladder, solid-bottom, ventilated, or wire-mesh, selected based on cable type, environment, and aesthetic requirements. Documentation and traceability: Factories must provide technical documentation, test certificates, and compliance declarations for each batch.

By adhering to these factory requirements, cable trays are produced to ensure long-term reliability, safety, and regulatory compliance in industrial and commercial electrical installations.

Article Content

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

This guide for engineers and installers has been developed by ABB as a practical reference regarding cable tray characteristics, installation, and requirements.

Cable Tray Installation Rules (NEC 392) – Electrical Trader

NEC Article 392 outlines the key rules for installing and maintaining industrial cable tray systems. These systems, made from metal or plastic, are open structures designed to support

Codes and Standards | Cable Tray Institute

The Cable Tray Institute is making available the current edition of this practical guide for the proper installation of aluminum or steel cable tray systems. These guidelines will be useful to engineers,

IEC Standard for Cable Tray: Complete Technical Guide

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The International Electrotechnical Commission (IEC) provides detailed guidelines for cable tray systems under IEC 61537. This standard outlines the

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Safely Installing, Maintaining and Inspecting Cable Trays

As with any electrical equipment, cable trays and the wiring contained in the trays must be listed, labeled or otherwise approved, pursuant to the requirements of 29 CFR § 1910.303(a).

NEC Article 392 Guide: Ensuring Compliance for Cable Tray Systems

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General Information Spray molding cable tray has many models, including spray molding channel bridge, spray molding tray bridge, spray molding ladder bridge and spray molding partition wall

26 05 36 Cable Trays for Electrical Systems

SCOPE This section includes: Metal cable trays Nonmetallic cable trays Cable tray accessories Related Requirements: Section 260010 "Supplemental Requirements for Electrical" for additional

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