Plastic Cable Tray Enterprise Standards



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

Plastic cable trays must comply with IEC and industry-specific standards for mechanical strength, electrical safety, corrosion resistance, and environmental performance. Key Standards and GuidelinesIEC 61537 is the primary international standard for cable tray systems, including plastic trays, ensuring safety, durability, and performance across various environments. It specifies construction requirements, load testing, corrosion resistance, and electrical continuity for cable trays used in commercial, industrial, and utility installations.

For plastic cable trays specifically, additional standards and testing protocols apply: Mechanical Strength and Working Load: Plastic trays must be assigned a safe working load. Testing is performed using a pendulum hammer according to IEC 60068-2-75: 2014, with samples aged at 90°C for 240 hours and tested at the intended ambient temperature, including cold environments below –25°C. Impact and Cold Bend Resistance: Trays must maintain mechanical integrity under impact and low-temperature conditions, ensuring no disintegration or deformation that could compromise safety.

Electrical Conductivity and Earthing: Plastic trays passing through hazardous areas must be electrically conductive, with volume resistivity below 105 ohm·cm and surface resistivity below 108 ohm/sq. Resistance to earth should not exceed 10^6 ohm. Testing follows IEC 62631-3-1: 2016 and IEC 62631-3-2: 2015.

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Material Properties: Trays are typically made from polyester or vinyl ester resins, providing high corrosion resistance and a favorable strength-to-weight ratio. Material selection must consider environmental factors such as chemical exposure, UV radiation, and temperature extremes.

Design and Installation Considerations

Dimensions: Width, depth, length, and material thickness are standardized to ensure proper cable fill, heat dissipation, and structural integrity. Ladder, perforated, channel, and wire mesh trays have different sizing requirements based on load and airflow needs. Covers and Ventilation: Solid or ventilated covers may be used depending on heat generation, electromagnetic interference, and aesthetic requirements.

Compliance and Safety: Only products and accessories recommended by the manufacturer should be used, following installation rules to prevent overheating, arcing, or fire hazards.

Summary

Plastic cable trays in enterprise applications must meet IEC 61537 and related IEC standards for mechanical, electrical, and environmental performance. They require rigorous testing for load, impact, temperature resistance, and electrical conductivity. Proper material selection, dimensioning, and installation practices are essential to ensure safety, durability, and compliance in industrial, commercial, and marine environments.

Article Content

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

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GUIDE CABLE TRAYS TECHNICAL

Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian Electrical Code, Part I and the National Electrical Code®

Cable Tray Installation Rules (NEC 392) – Electrical Trader

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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

IEC Standard for Cable Tray: Complete Technical Guide

For proper installation, design, and maintenance, adherence to international standards is essential. One of the most recognized frameworks

PVC CABLE TRAY

The Legrand PVC cable tray range complies with the requirements of the RoHS Directive, which stipulates the elimination of several substances that are hazardous to the environment and to health.

IEC 61537:2023

This document specifies requirements and tests for cable tray systems and cable ladder systems intended for the support and accommodation of cables and possibly other electrical equipment in

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NEC Article 392 Guide: Ensuring Compliance for Cable

Master NEC Article 392 with our comprehensive guide. Learn essential cable tray requirements for installation, grounding, and fill capacity to

Cable Trays Raceways for Electrical Cables

A cable tray is a system of metal or plastic supports used to route electrical cables and wires. Cable trays are typically suspended from the ceiling or mounted on

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Cable Tray SHIB NAL

Overloading cable trays can lead to a breakdown of the tray, its connecting points, and/or supports, causing hazards to persons underneath the cable tray and even leading to possible electric shock

Cable Tray Systems

EzyStrut offers some of the strongest cable trays in their classes, and produces them to a very high structural and visual standard. Cable trays offer continuous support of cables, are lightweight, quick

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

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a practical reference regarding cable tray

CABLE TRAYS / PROTECTIVE CASINGS MADE OF PLASTICS

Note : * Consideration will be given to the use of plastic cable trays/protective casings in the cold environment where the ambient temperature is below – 25°C provided the mechanical properties of

Explaining NEC Article 392 on Cable Trays

NEC Article 392 explains cable trays, their components, appropriate wiring methods for cable trays, and instances where they are and are not

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