Specifications of wire and cable trays



Overview

Some applications may require the cable tray to support the weight of a single, dead object in addition to the cable loads.

Key Takeaways

Wires used in cable trays are typically tray-rated cables such as Type TC, TC-ER, or ITC, designed for durability, flame resistance, and compliance with NEC standards.

Types of Tray Cables

Type T

C (Tray Cable): Factory-assembled cables with two or more insulated conductors under a non-metallic jacket, rated for 600 volts. Suitable for power, control, and signal circuits in cable trays, raceways, and outdoor locations when supported.

T

C cables are UL listed and may be used in Class 1, Division 2 hazardous locations. Type TC-ER (Exposed Run): Similar to TC but designed to transition from the tray to equipment for distances up to six feet without continuous support, meeting crush and impact requirements per UL 1569.

Type IT

C (Instrumentation Tray Cable): Used for instrumentation and control, available in shielded or unshielded constructions, sometimes with metal armor, for sensitive signal applications.

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Voltage Ratings and Insulation

Voltage Ratings: Commonly 300V (PLTC) or 600V (TC, TC-ER) depending on application. Insulation and Jacket: Durable outer jackets resist sunlight, moisture, oil, and mechanical damage. Flame-retardant construction is required to meet UL and NEC fire safety standards.

Armor: Some cables include metal armor over individual conductors for additional mechanical protection.

Conductor Sizes

American Wire Gauge (AWG) is used to specify conductor size. Power circuits typically use 14 AWG and larger, while control or instrumentation circuits may use 16–18 AWG. Proper sizing ensures adequate ampacity, minimizes voltage drop, and maintains installation flexibility.

Installation Considerations

Cables must be UL listed and marked as cable tray rated. Fill capacity, securing, and support must comply with NEC Article 392. Ladder trays are preferred for heat dissipation, while solid-bottom trays are used where EMI shielding or protection from falling objects is needed.

TC-ER cables allow short unsupported runs to equipment, but standard TC cables must remain within the tray or raceway.

Summary

When selecting wires for cable trays, ensure they are tray-rated (TC, TC-ER, ITC), have the correct voltage rating, conductor size, and insulation type, and comply with NEC Article 392. Consider environmental conditions, mechanical protection, and whether the cable will transition outside the tray to determine if TC-ER or armored cables are required.

Article Content

GUIDE CABLE TRAYS TECHNICAL

NEMA VE 1-2017 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 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

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CABLE TRAY SYSTEMS GUIDE

Some applications may require the cable tray to support the weight of a single, dead object in addition to the cable loads. Specifications typically require this to be applied at the midpoint of the span between

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26 05 36 Cable Trays for Electrical Systems

Description: This product category covers metal cable trays and metal cable tray systems intended for field assembly and for use in accordance with Article 392 of NFPA 70.

LEGRAND CABLE TRAYS TECHNICAL GUIDE

Not all cable trays are equivalent. The mechanical and electrical characteristics, tests, certifications, overall quality management, recommendations mentioned in this technical guide only apply to our

Product Specifications: CABLE TRAY

AS/NZS 4680:2006 FDG CABLE TRAY FDG Cable Tray is designed to continuously support cable systems includ. ng; Power, Data, and Audio Visual. A quick and easy system to install without the

Full cable tray systems specification document

The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, tests and services to install complete cable tray systems as shown on the

Cable Tray and Reels | Wire and Cable Management

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Cable Tray, Cable Bus, Wire Mesh Cable Trays | MP

MP Husky manufacturers Cable Tray Systems, Cable Bus System, Wire Mesh/Wire,Cable Tray, & Cable Management Systems. Our cable support

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Cable tray | MetalEgypt

Wire mesh trays for flexible and fast installations Load Capacity and Durability MetalEgypt cable trays are engineered to support operational cable loads while

Cable Tray Specifications for Power Project

Cable tray supports must be cantilever type and all supports and hardware must be hot-dip galvanized. Conduits must be rigid steel coated type with a minimum size of 19mm, seam welded and coated

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

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

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