

What type of cable should be used in the cable tray

Article Overview

The primary types of cables used in cable trays are TC (Tray Cable), TC-ER (Tray Cable with Exposed Run Rating), and ITC (Instrumentation Tray Cable), all designed to meet NEC and UL standards for safety and durability.

Tray Cable (TC)

TC cables are multi-conductor cables designed for power, control, and lighting circuits in industrial and commercial environments. They consist of two or more insulated conductors under a non-metallic jacket and are rated for 600 volts. TC cables are suitable for installation in cable trays, raceways, and outdoor locations when supported by a messenger wire. They are UL listed and can be used in Class 1, Division 2 hazardous locations and Class 1 control circuits. TC cables are flame-retardant and mechanically robust, making them ideal for harsh industrial conditions .

Tray Cable with Exposed Run Rating (TC-ER)

TC-ER cables are an enhanced version of TC cables, designed for short exposed runs of up to six feet between the cable tray and equipment without continuous support. They feature impact- and crush-resistant jacketing and meet additional UL standards for mechanical protection. TC-ER cables allow flexibility in installations where conduit is not required for short transitions, while still maintaining compliance with NEC requirements .

Instrumentation Tray Cable (ITC)

ITC cables are used for low-voltage control, signal, and communication circuits, typically not exceeding 150 volts and 5 amps. They are available in shielded or unshielded constructions, with multiple single conductors or twisted pairs, and may include metal armor for additional protection. ITC cables are commonly used in PLCs, DCS systems, transmitters, and other instrumentation applications. Some ITC-ER versions also allow short exposed runs similar to TC-ER cables .

Key Features of Tray Cables

- o **Durability:** Designed to withstand mechanical stress, oil, moisture, sunlight, and chemicals .
- o **Flame Retardant:** Meets UL and NEC flammability standards for safety in confined spaces .
- o **Flexible Installation:** Can be routed neatly in trays, reducing the need for conduit and lowering installation costs .
- o **Environmental Suitability:** Rated for indoor, outdoor, corrosive, or high electrical noise areas depending on

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the cable type .

Summary

When selecting cables for a cable tray, it is essential to choose UL-listed, tray-rated cables that comply with NEC Section 392.10 and related articles. TC, TC-ER, and ITC cables are the most commonly used types, each tailored for specific voltage, environmental, and mechanical requirements, ensuring safe and reliable power, control, and signal distribution in industrial and commercial installations .

Cable tray systems are engineered support structures designed to route, support, and protect insulated electrical

It also give good look after installation. The aluminium Cable Trays have excellent corrosion resistance in chemical

OmniCable offers an industry-leading inventory of tray cables for power and control applications. Our

Key Takeaways NEC Article 392 governs cable tray systems. Only approved tray-rated cables should be installed.

Cable trays distribute bundles of electrical cables from power supplies to electrical equipment and components throughout the plant.

Cable tray is alternatives to wire ways and electrical conduits, which completely enclose

The types of cables usually used in cable trays are type TC (article 340), PLTC (article 725), ITC (article 727), MC (article 334) and

Tray cable is a widely used type of multiconductor or multipair cable approved for installation in cable raceways and

This guide covers the cable tray types and their appropriate applications, the fill rules for each configuration, ampacity

Tray cables (TC) are multi-conductor cables designed and rated for installation in cable trays and raceways or

Looking for tray cable? IEWC is a top supplier of this critical type of electrical cable. Here"s what you should know.

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At IEWC, we carry three main categories of tray-rated cables: SDT, Power Limited Tray Cable, and 600V Tray Cable. PLTC Cable

SOLID-BOTTOM CABLE TRAY Providing additional cable protection, solid-bottom cable tray is sometimes preferred to support and

Simply put, tray cable is a versatile cable approved for installation in cable trays or raceways. Tray cable comes in multiconductor

This article will discuss the four most common types of cable containment and their uses: cable tray, cable basket,

Power Cable Definition: A power cable is defined as an assembly of insulated electrical conductors used for

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