Must cables be placed in fireproof cable trays



Overview

Shortest and Straightest Path: To reduce cable loss and simplify maintenance, cable routes should be as short and straight as possible.

Key Takeaways

Only tray-rated (Type TC) or metal-clad (Type MC) cables should be run in fireproof cable trays, with proper firestopping at penetrations.

Suitable Cable Types

Cables installed in fireproof cable trays must be durable and fire-resistant due to their exposure in open trays. The most commonly used types include: Type TC (Tray Cable): Factory-assembled cables with two or more insulated conductors under a non-metallic jacket, rated for 600 volts, suitable for power and control circuits, and often flame-retardant.

T

C cables can be used indoors, outdoors, and in hazardous locations if UL-listed and marked for tray use.

Type M

C (Metal-Clad Cable): Cables with metal armor providing mechanical protection and fire resistance, suitable for industrial power applications.

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Exposure-

Rated (ER) Cables: A variant of TC cables that can extend up to six feet outside the tray if properly supported and secured. All cables must be UL-listed and marked as cable tray rated to ensure compliance with NEC Section 392. 10 and related standards.

Fireproofing and Firestopping

Even with fire-rated cables, fireproof cable trays require additional protection at wall, floor, or slab penetrations: Openings must be sealed with fire-rated boards, firestop packs, firestop mastic, or mineral wool to prevent fire and smoke spread. Gaps around cables should not exceed 1 cm^2, and packing thickness should be at least 24 cm for large openings. Fire-support plates and cover plates may be used to enhance protection and maintain structural integrity.

Installation Considerations

Segregation: High-voltage power cables and low-voltage signal or data cables should be routed in separate trays or separated by barriers to prevent interference. Fire-rated ties: Use fire-rated cable ties, especially in plenum spaces, to avoid toxic smoke emission in case of fire. Mechanical support: Trays must be level, plumb, and capable of supporting the full cable load without deformation.

Summary

In fireproof cable trays, only tray-rated (TC), metal-clad (MC), or exposure-rated cables should be used. Proper firestopping at penetrations and adherence to NEC Article 392 and UL listings are essential to ensure safety, prevent fire spread, and maintain compliance with building regulations.

Article Content

Technical Guidelines for Cable Tray Installation and

Shortest and Straightest Path: To reduce cable loss and simplify maintenance, cable routes should be as short and straight as possible. Segregation of Power and

Firestopping Requirements for Cable Trays and Wall/Slab Penetrations

Firestop packs should be placed in an orderly sequence. The gap area between firestop packs and cables should not exceed 1 cm2, and the packing thickness should be not less than 24

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A generic guideline developed by the Cable Tray Institute indicates that cable trays should not be filled in excess of 40-50% of the inside area of the tray or of the tray''s maximum weight based on the cable

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BS 7671: Chapter 42

Cables in escape routes shall be as short as practicable. Cables encroaching on escape routes shall not be installed within arm''s reach unless they are provided with protection against mechanical damage

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In summary, when laying cables in fireproof cable trays, it is essential to choose suitable cables and trays while strictly adhering to relevant regulations and standards to ensure their safety

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Low Voltage VS High Voltage Cable Trays

Both types of trays serve different functions and are used in varying environments, based on voltage, power, and safety requirements. While low

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