Allowable deviation in thickness of fireproof cable trays

Article Overview

The allowable deviation in thickness for fireproof cable trays is generally governed by IEC 61537 and related standards, with typical tolerances ranging from +-5% of the nominal material thickness, depending on the manufacturer and coating type.

Standards and Guidelines

Fireproof cable trays must comply with IEC 61537, which specifies construction, mechanical strength, and coating requirements for metallic cable trays, including galvanized steel, stainless steel, and fire-resistant coated trays . The standard ensures that trays maintain structural integrity under load and during fire exposure. Coating thickness tests are part of the compliance verification to ensure durability and fire resistance .

Typical Tolerances

o Metallic trays: For galvanized or stainless steel trays, the thickness deviation is typically +-5% of the nominal thickness, depending on the galvanization or coating process used .
o Fireproof coatings: Flame-retardant paints or fire-resistant coatings applied to trays should meet manufacturer specifications, with thickness tolerances usually within +-10% to ensure consistent fire performance .
o Installation tolerances: While not directly related to material thickness, fireproof cable trays must also be installed with horizontal deviation <=2 mm per meter and vertical deviation <=3 mm per meter to maintain mechanical stability and fire integrity .

Fireproofing Considerations

Fireproof cable trays often include internal fire barriers to isolate different fire zones and slow flame propagation . The tray material and coating thickness must be sufficient to maintain circuit integrity during fire exposure, typically tested for durations such as 90 minutes under DIN 4102-12 or equivalent standards . Deviations beyond specified tolerances can compromise fire resistance and mechanical performance.

Practical Recommendations

o Always refer to the manufacturer's datasheet for exact thickness tolerances and fireproofing specifications.
o Ensure that coating thickness is measured after fabrication and before installation.
o Maintain proper support spacing and alignment to prevent deformation, which can affect both mechanical and fireproof performance . By adhering to these standards and tolerances, fireproof cable trays can reliably support cables while maintaining safety and compliance in fire-prone environments.

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NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules

Cable trays are intended for the construction of fire-resistant cable paths with surface cable laying. Cable

The document outlines codes and standards that must be followed for design and construction of cable trays and their components.

NEMA Cable Tray Technical Bulletin 5, Tie Down Practices for Multiconductor Cables in Cable Trays NEMA Boletín Técnico 5:

cable trays with associated accessories shall be done by bolting only. All FRP trays shall have minimum thickness as per following

FRP cable tray is the support system for managing cables and protect cables from heating, rains and corrosive elements. There are

Cable tray fill percentage calculator per IEC 61537. Multi-cable derating factors, ventilated/non-ventilated tray types,

Sinisi Solutions works with major utilities and clients to design cable enclosures that protect critical cabling and cable tray setups

Cable tray installed in a hazardous location must contain only those cables that are appropriate for this type of environment as

Drawings / Document Description Technical Data Sheet for FRP Cable trays & Accessories GA drawings of FRP Cable Trays &

Cable trays are not raceways, but they are treated as a structural component of a facility"s electrical system. Cable trays are a part of

B. Cable tray systems are defined to include, but are not limited to straight sections of [ladder type] [trough type] [solid bottom type]

The Cable Tray Institute is making available the current edition of this practical guide for the proper installation of aluminum or steel

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Install and support tray system in accordance with span load criteria, assuming 110 percent of maximum allowable cable fill

The following charts give the number of 3M pillows needed to completely firestop an opening that cable tray passes through.* Two

They shall not have sharp edges, burrs or projections that can damage the cable insulation/jackets or impose any unreasonable

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