

Article Overview

Fiberglass cable trays must comply with NEC Article 392, UL 568, IEC 61537, and NEMA FG-1 standards for safe design, installation, and performance.

Key Standards

NEC (National Electrical Code) Article 392 This article governs the installation of cable tray systems, including fiberglass trays, specifying requirements for tray type, support, spacing, and conductor ampacities. It ensures safe electrical installations and proper cable fill, covering ladder, ventilated, solid bottom, and channel trays . **UL 568** Underwriters Laboratories standard UL 568 defines performance requirements for fiberglass cable trays, including mechanical strength, fire resistance, and environmental durability. Compliance ensures trays are safe for supporting power, control, or signal cables . **NEMA FG-1** Although rescinded in 2017, NEMA FG-1 historically specified manufacturing requirements for nonmetallic cable trays, including ladder, trough, solid bottom, and channel types. It remains a reference for design and material standards in fiberglass tray systems . **IEC 61537** This international standard specifies requirements and testing for cable tray systems, including fiberglass trays, to ensure structural integrity, load capacity, and suitability for electrical and communication installations .

Material and Fabrication Requirements

Fiberglass trays are typically manufactured using pultrusion, compression molding, or resin transfer molding, with a glass fiber-to-resin content of 45-65% by weight for pultruded components. All materials must be fire retardant with a Class 1 flame spread rating (≤ 25 per ASTM E-84) and may include UV inhibitors and conductive additives for static dissipation .

Load and Span Considerations

Fiberglass ladder-type trays must meet Safe Working Load (SWL) requirements per IEC 61537. Span support and deflection limits are specified to ensure structural integrity under cable loads. Nominal tray depths typically range from 2" to 9" depending on application .

Installation Guidelines

- o Maintain proper rung spacing (typically 6-9 inches) to support cables and prevent sagging .
- o Select tray width based on cable type, voltage, and fill calculations per NEC 318 and manufacturer tables .
- o Ensure trays are supported at intervals that comply with load/span ratings and avoid excessive deflection .
- o Use covers or ventilated designs as required for environmental protection and heat dissipation .



Fiberglass cable tray code

Summary

For compliance and safety, fiberglass cable trays must adhere to NEC Article 392, UL 568, IEC 61537, and relevant NEMA guidelines. Proper material selection, fire rating, load/span design, and installation practices are critical to ensure reliable and code-compliant cable management in industrial, commercial, and marine environments .

Covers construction and test requirements for continuous, complete nonmetallic systems of ladder, ventilated, solid-bottom cable

In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and

A bare copper equipment grounding conductor should not be placed in an aluminum cable tray due to the potential for electrolytic

Q2. What are the Code permitted uses of a Cable tray? A2. Cable trays can be used as a support system for service, feeder, or

Eaton's B-Line series fiberglass cable tray systems provide an economical support system with superior strength at room

Eaton's submittal builder tool for B-Line series cable ladder and tray allows you to easily filter, select and

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been

National Electrical Manufacturers Association (NEMA) FG-1 (latest edition) Fiberglass Cable Tray Systems
National Electric Code

NFPA 70: The National Electrical Code (NEC) includes regulations related to the installation of cable trays, providing guidelines on

Cable tray systems must be installed as a complete unit, ensuring electrical continuity and support for cables. Each tray run should

Zinc plated wire basket cable tray shall be classified by Underwriters Laboratories (UL). Wire basket cable tray shall be of uniform



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NEMA Standards Publication VE 2-2006 Cable Tray Installation Guidelines Published by: National Electrical Manufacturers

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The Cable Tray Institute (CTI) was founded in 1991 to support the cable tray industry by engaging in research, development,

Straight section ladder tray shall be prefabricated structures made from fiberglass reinforced plastic, consisting of two longitudinal

When designing a cable tray wiring system, the designer should evaluate the National Electrical Code's (NEC) Equipment Grounding

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