Commonly Used Cable Tray National Standard Thickness Specifications

Article Overview

Cable tray thickness is governed by standards such as NEMA VE 1/VE 2, UL 568, and NEC, which specify minimum metal thicknesses based on tray type, material, and load/span class.

Overview of Standards

NEMA VE 1 and VE 2 define the manufacturing requirements for metal cable trays, including ladder, ventilated, solid-bottom, channel, and wire mesh types. These standards specify minimum thicknesses for steel and aluminum trays according to load/span classifications, ensuring structural integrity under expected cable loads and installation conditions (NEMA VE 1/VE 2) . UL 568 covers fiberglass (nonmetallic) cable trays, specifying thickness and performance requirements to ensure safe application in electrical installations . NEC (NFPA 70) and CEC C22.1-Part 1 provide installation requirements, including conductor ampacities and support methods, which indirectly influence tray thickness selection to prevent deflection or failure under load . IEC 61537 is an international standard that also specifies thickness and mechanical requirements for both metal and nonmetallic cable trays, often referenced for global compliance .

Typical Thickness Guidelines

While exact thickness depends on tray type, material, and span, general guidelines include:

o Steel cable trays:
o Ladder and ventilated trays: 1.5-2.5 mm (16-14 gauge) for standard spans
o Solid-bottom trays: 2-3 mm (14-12 gauge) depending on load

o Aluminum trays:
o Ladder and ventilated trays: 1.5-2 mm (14-16 gauge)
o Solid-bottom trays: 2-2.5 mm (12-14 gauge)

o Fiberglass trays:
o Thickness varies by load class and span; typically 6-12 mm for standard industrial applications . These values are minimums; higher thickness may be required for longer spans, heavier cable loads, or corrosive environments. Load/span tables in NEMA VE 2 provide detailed guidance for selecting the appropriate thickness based on tray width, span, and material .

Material Considerations

o Steel trays may be hot-dip galvanized or pre-galvanized to improve corrosion resistance.

o Aluminum trays offer a higher strength-to-weight ratio and natural corrosion resistance.
o Fiberglass trays provide excellent corrosion resistance and are suitable for chemical or outdoor environments .

Practical Recommendations
o Always consult NEMA VE 1/VE 2 or UL 568 for the specific tray type and load/span class.
o Verify compliance with NEC Article 392 for installation and support requirements.
o Consider environmental factors (corrosion, temperature, chemical exposure) when selecting material and thickness.
o For custom or heavy-duty applications, refer to manufacturer load/span tables to ensure adequate thickness and structural safety. By following these standards, engineers and contractors can ensure that cable trays meet mechanical, electrical, and safety requirements for industrial, commercial, and residential installations .

standards & specifications light & medium duty cable tray sizes essories do not have a return edge. Also light duty tray of widths

The national standard 2000 includes the types and varieties of bridges, the specifications of trays and ladders, and the selection of

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

Based on current industry practice, the straight type cable trays are more commonly used in offshore structures and units, so this

Explore standard sizes by tray type, understand width and depth limits, and see how to

Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian

Types of Cable Trays and Sizes Explore various cable tray types and sizes for electrical installations. Learn about ladder, perforated,

Explore standard sizes by tray type, understand width and depth limits, and see how to calculate and choose compliant

What is the meaning of cable tray deflection and what is the industry standard? What are the specific requirements for

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The document outlines National Electrical Code requirements for cable tray sizing based on cable type and size. It

The thickness standard for galvanized (steel) Cable Trays is based on GB/T 14540-2020 "Cable Trays" (the latest

These guidelines will be particularly useful for the design, specification, procurement, installation and maintenance of these systems.

Many electrical systems employ cable trays. They route cables safely & efficiently. NEC defines minimum cable tray

The national standard of cable tray thickness refers to the thickness of plates that should be selected for the main

Standard length of about 10 feet (118") Wire Mesh tray is generally used for telecommunication and fiber optic applications and are

These documents: ANSI/NEMA VE-1, Metal Cable Tray Systems; NEMA VE-2, Cable Tray Installation Guidelines; and NEMA FG-1,

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