Cable Tray Product Grade Standards



Overview

When specifying cable trays for an international project, the first question is always: Which standard applies?

Key Takeaways

Cable tray product grades are defined by international and national standards such as IEC 61537, NEMA VE 1, UL 568, and NFPA 70, specifying material, mechanical, and performance requirements. International StandardsIEC 61537 is the globally recognized standard for cable tray systems, covering metallic and non-metallic trays. It specifies construction requirements, load testing, corrosion resistance, and electrical continuity to ensure safety and durability in commercial, industrial, and utility installations.

Compliance ensures that trays can handle physical and electrical loads over time and are suitable for various environmental conditions, including marine, coastal, or chemical exposure. North American StandardsNEMA VE 1 defines manufacturing requirements for metal cable trays such as ladder, channel, wire mesh, and solid bottom trays, including load/span class designations. It aligns with the National Electrical Code (NEC) and is harmonized with CSA C22.

2 for Canadian installations.

NEMA F

G 1 covers non-metallic (fiberglass) cable trays, specifying mechanical strength, chemical resistance, and compliance with NEC rules.

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L 568 provides performance requirements for fiberglass cable trays, ensuring safe application under electrical and environmental stresses.

NFP

A 70 (NEC) and NFPA 79 outline installation and safety requirements, including ampacity, conductor spacing, and protection against fire and electrical hazards.

NFP

A 70E addresses employee protection from electrical hazards such as shock and arc flash.

Material Grades and Corrosion Resistance

Cable trays are manufactured from steel, stainless steel, aluminum, or fiberglass, with material selection based on environmental conditions: Steel: Available in pre-galvanized or hot-dip galvanized forms for corrosion protection. Stainless Steel: Typically AISI 316L, with high chromium and molybdenum content for enhanced corrosion resistance, especially in chlorinated or marine environments. Aluminum: Lightweight, corrosion-resistant, and formable, often using Aluminum Association-designated alloys.

Fiberglass (FRP): Pultruded with polyester or vinyl ester resin, offering high corrosion resistance and a favorable strength-to-weight ratio.

Compliance and Certification

Cable trays must meet CE marking in Europe, UL certification in the U. S., and other national approvals (e.g., IMQ in Italy, LCIE in France) to demonstrate compliance with safety and performance standards. Third-party audits ensure ongoing adherence to these standards.

Summary

Cable tray product grades are determined by a combination of material type, mechanical strength, corrosion resistance, and compliance with recognized standards. Selecting the appropriate grade ensures safety, durability, and compatibility with electrical systems, while meeting regulatory requirements across different regions.

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Codes and Standards | Cable Tray Institute

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This standard specifies the requirements for nonmetallic cable trays and associated fittings designed for use in accordance with the rules of the Canadian Electrical Code (CEC) Part 1, and the National

Understanding NEMA Standards for Cable Tray Systems

We partnered with the Eaton B-Line series experts for this article detailing the NEMA standards for cable tray systems.

Cable Tray SHIB NAL

Overloading cable trays can lead to a breakdown of the tray, its connecting points, and/or supports, causing hazards to persons underneath the cable tray and even leading to possible electric shock

GUIDE CABLE TRAYS TECHNICAL

The various standards STANDARD IEC 61 537 “INTERNATIONAL ELECTROTECHNICAL CONTRACTORS STANDARD FOR CABLE TRAY SYSTEMS - CABLE LADDER SYSTEMS” cable

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Not all cable trays are equivalent. The mechanical and electrical characteristics, tests, certifications, overall quality management, recommendations mentioned in this technical guide only apply to our

cable tray technical specifications cable tray

to cables when correctly inserted. Screwed connections are generally isometric threads fully compliant with ests in accordance of the standard. Armorduct cable tray systems are usually assembled using

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The various standards STANDARD IEC 61 537 “INTERNATIONAL ELECTROTECHNICAL CONTRACTORS STANDARD FOR CABLE TRAY SYSTEMS - CABLE LADDER SYSTEMS” ation

SWIFTS CABLE TRAY

The gauge ''t'' for each cable tray width and finish can vary by product and range Non-standard gauges and finishes are available to special order, contact us on +44 (0) 345 605 4333

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Understanding IEC 61537: A Comprehensive Guide to Cable Tray

When obtaining CE certification for cable trays, IEC 61537 serves as a critical reference. Adhering to this standard during production and certification helps cable tray products gain

QCS 2010: Cable Tray Specifications | PDF

Tray components must be accurately formed to tolerances with rounded edges. Cable trays installed in hazardous environments shall be constructed from heavy duty GRP or stainless steel. The document

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