COETZER OPTICAL SYSTEMS (Pty) Ltd

Permissible lower thickness of cable tray

Overview

B-Line series Cable Tray Design ConsiderationsOur wind certification report provides you with list of acceptable B-Line series cable tray supports, fitting.

Key Takeaways

The minimum recommended thickness for cable trays depends on type and load, typically ranging from 1.2 mm for perforated trays to 2.0 mm for heavy-duty ladder trays, with tolerances guided by structural and environmental requirements.Recommended Thickness by Tray Type
• Ladder Cable Trays: Heavy-duty ladder trays designed for dense, heavy power cables generally use 2.0 mm to 3.0 mm thick metal to prevent deflection, twisting, or rung deformation under load .

• Perforated Cable Trays: These trays balance weight and strength, typically using 1.2 mm to 2.0 mm thick sheets, ensuring adequate cross-sectional rigidity .

• Solid Bottom Trunking & Raceways: For maximum shielding and environmental isolation, 1.5 mm to 2.0 mm steel sheets are commonly used .
Factors Affecting Allowable Lower Tolerance
• Load Density and Support Spacing: Thinner trays may be acceptable for lighter cable loads or shorter spans, but as support gaps increase (e.g., 1.5 m to 3–9 m), bending stresses rise, requiring thicker material to maintain structural integrity .

• Material Type: Galvanized steel, stainless steel, and corrosion-resistant alloys have different mechanical properties. Tolerances must account for material strength and environmental corrosion over time .

• Environmental Conditions: Coastal, marine, or industrial environments may require thicker trays to offset potential material thinning due to corrosion .

• Standards Compliance: Cable trays must meet NEMA, IEC, or UL deflection and load criteria. Manufacturers typically specify minimum thicknesses to satisfy these standards, and deviations below these values are generally not recommended .
Practical Guidance
• Always consult the manufacturer's specifications for minimum thickness and allowable tolerances, as these are based on tested load capacities and material properties .

• For custom installations, consider span length, cable weight, and environmental exposure before reducing thickness below standard recommendations.

• Using trays thinner than recommended can lead to structural failure, excessive deflection, or safety hazards, especially in industrial or high-load applications . In summary, while exact numeric tolerances may vary by manufacturer, the allowable lower thickness is generally the minimum value recommended for the tray type and material, with adjustments only made after careful engineering assessment of load, span, and environmental factors.

Article Content

B-Line series Cable Tray Design Considerations

Our wind certification report provides you with list of acceptable B-Line series cable tray supports, fittings and covers based off of the

An Overview of Cable Tray Thickness: Standards, Grades, and

The thickness of a cable tray directly influences its load capacity, durability, environmental resistance, and suitability

Cable Tray Technical Guide A practical guide to product selection

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

Codes and Standards | Cable Tray Institute

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

GUIDE CABLE TRAYS TECHNICAL

If it has excellent electrical continuity and is integrated in the installation''s equipotential bonding system, a metal cable tray reduces

Cable Tray Design and Standards Guide

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

NEMA Standards Publication VE 2-2006

Foreword For Cable Tray Installers—This publication is intended as a practical guide for the proper installation of cable tray systems.

QCS 2010: Cable Tray Specifications | PDF

The entire cable tray system shall be bonded and 12 mm x 2.5 mm tinned copper links shall be bolted across each joint in the system

Cables Allowed in NEC Tray Applications

Cables Allowed in NEC Tray Applications Cable tray is one of the most common methods of supporting wire and cable. There are

Flextray load and fill recommendations

The NEC rule requires that the cable cross-sectional areas together may not exceed 50% of the tray area (width x depth = fill).

Understanding IEC 61537: A Comprehensive Guide to Cable Tray

IEC 61537 is a crucial international standard established by the International Electrotechnical Commission (IEC). The Chinese

CABLE TRAY SYSTEMS GUIDE

The Ladder Tray features light, rugged, tubular steel construction. It is designed for mechanical support and strain relief in long runs

Cable Tray SHIB NAL

Cable trays can provide a safe component of a power, low voltage control, data or telecommunications wiring distribution system.

Cable tray systems and cable ladder systems for cable management

Cable tray systems and cable ladder systems shall be so designed and so constructed that in normal use, when installed according

Cable Tray Technical Guide A practical guide to product selection

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

Cable Tray Sizing Guidelines

The guidelines cover considerations for the weight and number of cables, space for future expansion, segregating cable types,

Document DICOS

Do not use a cable tray as a walkway, ladder, or support for people; a cable tray is a mechanical support system for cables and

LEGRAND CABLE TRAYS TECHNICAL GUIDE

Not all cable trays are equivalent. The mechanical and electrical characteristics, tests, certifications, overall quality management,

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.