

Specifications of ladder-type aluminum alloy cable trays



Overview

Aluminum Cable Tray systems are lighter than steel cable tray and Certified CSA Cable Tray, UL listed, NEMA and certified.

Key Takeaways

Ladder-type aluminum alloy cable trays are lightweight, corrosion-resistant, and designed for high-load cable management with excellent ventilation and easy installation.

Material and Construction

Ladder-type cable trays are typically made from high-strength aluminum alloys, such as 6063, which provide a combination of lightweight design, corrosion resistance, and durability suitable for indoor and outdoor applications, including harsh industrial environments like chemical plants and coastal areas . The trays consist of two side rails connected by transverse rungs, often tubular, which are cold-swaged to the side rails to ensure superior mechanical and electrical connections without weakening the metal . This design allows for maximum ventilation and easy access to cables.

Dimensions and Design

- Length: Standard sections are usually 3 m or 6 m long .
- Rung Spacing: Commonly 12 inches (30 cm) on center, though spacing can be customized based on load requirements .
- Width: Typical widths range from 36 to 42 inches, with deflection factors calculated for simple spans and continuous spans reducing deflection by up to 50% .

- Side Rails: Often designed as I-beam or C-channel profiles to optimize strength while minimizing weight .

- Fittings: Zero tangent fittings and curvilinear splice plates allow tight installation in confined spaces and maintain structural integrity .

Load Capacity and Safety

- Load Ratings: Ladder trays are designed with a 1.5 safety factor and can support an additional 200 lb concentrated load on any portion of the tray, including side rails and rungs .

- High Vibration Environments: Cold-swaged tubular rungs provide rigidity and stability, making them suitable for areas with mechanical vibrations .

Corrosion and Environmental Resistance

- Aluminum alloy trays are highly resistant to corrosion and rust, making them ideal for outdoor, coastal, and industrial environments .

- Non-magnetic and non-sparking properties reduce electromagnetic interference, which is critical for sensitive installations like data centers .

Standards and Compliance

- Ladder-type aluminum trays are UL-listed, CSA-certified, and meet NEMA VE-1 standards for metal cable tray systems .

- They are engineered to comply with NEC, ISO, and CE standards, ensuring safety, reliability, and long-term performance .

Applications

- Industrial Facilities: Power plants, chemical and petrochemical plants, and manufacturing facilities.

- Commercial Buildings: Office complexes, data centers, and high-rise buildings.

- Outdoor Installations: Coastal or corrosive environments where durability is critical .

Key Features

- Lightweight and easy to handle for quick installation.

- Excellent ventilation for heat dissipation.

- Customizable accessories for fast assembly.

- Smooth finish suitable for visible installations.

- Supports large cable runs efficiently while maintaining structural integrity . In summary, ladder-type aluminum alloy cable trays combine strength, corrosion resistance, and ease of installation, making them a versatile solution for both industrial and commercial cable management needs. They are engineered to meet rigorous load, safety, and environmental standards, ensuring long-term reliability and performance.

Article Content

Aluminum Ladder Alloy Cable Tray: Structure, Specifications, and

Understanding the technical specifications, proper installation procedures, and maintenance requirements of aluminum

Aluminum Cable Tray | EAE USA

The Aluminum Cable Ladder has a high loading capacity to manage dense cable transitions. Designed with a lightweight structural

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Aluminum Cable Tray

Aluminum Cable Tray systems are lighter than steel cable tray and Certified CSA Cable Tray, UL listed, NEMA and certified.

CableTray Book English

All calculations and data for AH1-8 series are based on cable tray with rungs spaced on 12" centers with tray supported as simple

Resources for Cable tray and ladder systems

Our cable tray design considerations guide details key factors to consider when designing cable tray systems for industrial and

A Technical Overview of Nema Standard Aluminum Ladder Types

This guide explores the most common materials used in cable tray manufacturing, with a focus on aluminum and its

CableTray Book English

Aluminum cable tray Straight lengths — Tray bottom types: ladder, ventilated and solid trough Ladder Extra wide aluminum rungs

Full cable tray systems specification document

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

Cope Ladder Master Spec

Cable Tray Hold Downs – Cable tray supported on standard 1-5/8 inch strut shall be held down with Cope style hold-down brackets.

Aluminum Cable Tray

An aluminum alloy cable tray is a lightweight, durable, and cost-effective system used to support and organize electrical and data

GUIDE CABLE TRAYS TECHNICAL

In accordance with its continuous improvement policy, Legrand reserves the right to change the specifications and illustrations

Type of Cable Tray

Cable Tray Materials: Most cable tray systems are fabricated from a corrosion-resistant metal (low-carbon steel, stainless steel or an

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Aluminum Cable Tray Systems – Extra Heavy Duty Industrial Cable Ladder The aluminum cable tray is a lightweight, durable, and

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12-SDMS-06

Cable tray straight sections, fitting side rails and rungs made from 6063-T6 aluminum extrusions shall be of heat-treated alloys for

Aluminum Cable Tray, Series 2, 3 & 4

Aluminum Cable Tray, Series 2, 3 & 4 -- the Side Rails Our I-Beam -- the most efficient structural shape Using "Copper-free" 6063-T6

Aluminum I-BEAM Ladder Tray

Welded aluminum I-beam ladder cable trays are a core solution and an iconic design in the cable tray industry. The I-beam design is

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