Cable tray material aluminum alloy



Overview

Cable Tray: Material Properties Basic structural members of aluminum cable tray systems can be made from 6063-T6 aluminum extrusions, a material which econ.

Key Takeaways

Aluminum alloy cable trays are typically made from high-strength, corrosion-resistant alloys such as 6063-T6, combining aluminum with elements like magnesium and silicon.

Alloy Composition and Series

Aluminum used in cable trays is rarely pure; it is alloyed to enhance strength, durability, and corrosion resistance. Common alloys include: 6063-T6: The most widely used for structural cable trays, this alloy contains aluminum, magnesium, and silicon, providing excellent corrosion resistance, good mechanical strength, and ease of extrusion for complex shapes. Other series: Aluminum alloys are classified from 1000 to 7000 series.

Non-heat-treatable alloys like 1000, 3000, 4000, and 5000 series gain strength through work hardening, while heat-treatable alloys like 2000, 6000, and 7000 series achieve higher strength via thermal treatment.

Key Properties

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Lightweight: Aluminum alloys are significantly lighter than steel, reducing installation labor and structural support requirements. Corrosion resistance: Aluminum naturally forms a protective oxide layer (alumina), and anodizing or powder coating further enhances resistance, making it ideal for outdoor, coastal, or industrial environments. Thermal and electrical performance: High conductivity allows efficient heat dissipation and minimal electromagnetic interference, which is critical in data centers and high-power installations.

Non-magnetic and maintenance-free: Aluminum alloys do not interfere with electrical systems and require minimal upkeep.

Fabrication Considerations

Aluminum alloy cable trays are typically extruded or fabricated from sheets and profiles of the selected alloy. The 6063-T6 alloy is preferred because it balances strength, corrosion resistance, and cost-effectiveness. The alloy can be further strengthened through cold working or heat treatment depending on the series and application requirements.

Applications

Aluminum alloy cable trays are suitable for: Outdoor and coastal installations due to superior corrosion resistance. Industrial facilities where chemical exposure or high humidity is present. Data centers and electrical installations requiring efficient heat dissipation and minimal electromagnetic interference.

In summary, aluminum alloy cable trays are engineered from alloys like 6063-T6, combining aluminum with magnesium and silicon to provide a lightweight, strong, corrosion-resistant, and thermally efficient solution for cable management in diverse environments.

Article Content

Cable Tray: Material Properties

Basic structural members of aluminum cable tray systems can be made from 6063-T6 aluminum extrusions, a material which economically meets the requirements of the majority of installations. The

Aluminum Alloy Cable Tray Manufacturer | Cable Management Systems

Our Aluminum Alloy Cable Tray is developed in-house with reference to the NEMA VE1-1979 Cable Tray Systems standard. Designed with simplicity and durability in mind, it offers outstanding corrosion

Aluminum Alloy Cable Tray is Lightweight to Install

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Aluminum alloy cable tray is made of aluminum alloy through extrusion molding. Compared with stainless steel cable trays, aluminum alloy cable trays are much

CableTray Book English

Extra wide aluminum rungs are welded to extruded aluminum I-beam side rails. Every second rung is reversed to allow for easy top or bottom mounting of cable ties and clamps. All edges and welds are

Comparing Electrical Cable Tray Materials-Aluminium,

Aluminium, steel, or plastic? Compare key features of electrical cable tray materials to find perfect match for your building''s requirements.

How to choose aluminum cable tray material (6063-T5

This guide focuses on the four aluminum alloys most commonly discussed in aluminum cable tray applications: 6063, 6061, 5052, and 1060.

What is Aluminium alloy Cable Tray?

Aluminum alloy cable trays have high corrosion resistance. They are suitable for power plant, chemical plant, petrochemical and other fields, especially suitable for the high corrosion...

Aluminium Cable Tray: Durable & Efficient Solutions

Aluminium trays are commonly made from high-grade aluminium alloys with options for anodized or powder-coated finishes. These coatings enhance corrosion resistance and aesthetic

Aluminum Cable Tray, Aluminum Ladder Cable Tray

Aluminum cable trays of NewReach are crafted from high-performance materials from durable aluminum alloys including 6063, robust steel Q235, corrosion

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Comprehensive Analysis of Cable Trays Raw Material

Discover the key aspects of cable trays raw material, including costs, trends, and innovations. Learn how materials like steel, aluminum, and composites shape the industry.

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Voomi Supply Burndy GC2929CT Cast CU Alloy Cable Tray Ground

Product Description The Burndy GC2929CT is a cast copper alloy cable tray ground clamp suitable for conductor sizes between two/0 AWG and two hundred fifty KCMIL. This clamp is designed for direct

Technical Guidelines for Cable Tray Installation and

Outdoor: Hot-dip galvanized or stainless steel trays. Corrosive/High Humidity: Aluminum alloy or fiberglass-reinforced plastic trays. Based on Load Capacity:

Ladder Type Cable Tray for Power Plants

Material Aluminum alloy Type Ladder Tray Side Rail Height 500 mm, 10 mm, 12 mm, 15 mm, 25mm, 75mm, 100 mm, 200 mm, 300 mm, 400 mm Show more

AEONS Premium Monitor Laptop Mount & Under Desk Cable Management Tray ...

Overview Brand : AEONS Color : Black, Silver Material : Polycarbonate Style : Bundle A Product Dimensions : 21.8"L x 16"W About this item CREATE YOUR FAVORITE WORKSPACE: this bundle

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