

Selection of Steel Structures for Cable Tray Supports

Article Overview

Steel for cable tray supports should be selected based on load requirements, environmental conditions, and corrosion resistance, with options including hot-dip galvanized, pre-galvanized, and stainless steel.

Key Considerations for Steel Selection

Load-Bearing Capacity: The steel used must support the weight of the cable tray and its contents without sagging or deformation. Angle steel supports provide robust structural integrity for heavy loads, while rod supports offer adjustable height and sufficient strength for lighter or frequently reconfigured installations .

Environmental Conditions: For indoor, dry environments, standard carbon steel with a protective coating may suffice. In humid, corrosive, or outdoor environments, stainless steel (e.g., AISI 316L) or hot-dip galvanized steel is recommended to resist corrosion, chemical exposure, and temperature extremes .

Corrosion Protection: Galvanization is a common method to enhance steel durability. Pre-galvanized steel is cost-effective for moderate conditions, while hot-dip galvanization provides superior protection in harsh or industrial environments. Stainless steel offers the highest corrosion resistance, particularly in chemical or marine settings .

Support Type Compatibility: Rod supports are ideal for installations requiring frequent height adjustments, such as data centers, due to their ease of installation and flexibility. Angle steel supports are better suited for industrial plants or substations where long-term stability and resistance to vibration or mechanical stress are critical .

Standards and Compliance: Ensure the selected steel and support system comply with relevant standards such as DIN EN 61537, NEC, NEMA, or IEC, which govern mechanical strength, safety, and installation practices .

Practical Recommendations

- o Indoor, light-duty installations: Pre-galvanized carbon steel with rod supports for flexibility.
- o Industrial or heavy-duty installations: Hot-dip galvanized or stainless steel with angle steel supports for maximum stability.
- o Corrosive or outdoor environments: Stainless steel (AISI 316L) with appropriate support type to prevent degradation over time. By considering load, environment, corrosion resistance, and support type, you can select steel that ensures the cable tray system remains safe, durable, and compliant with industry standards .

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Discover how optimizing cable tray structures leads to lighter designs, faster installs, and big

This publication is intended as a practical guide for the proper and safe* installation of cable ladder systems, cable tray systems,

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Learn about the different types of cable tray support, including rod supports and angle steel

Cable tray length is selected based on the load to be supported, the distance between the supports (also referred to as the span),

All changes of direction must be supported in the immediate vicinity of the joints (distance ≤ 150 mm) by an appropriate supporting

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