Standard Thickness of Large-Span Galvanized Cable Trays

Overview

Available in 3, 4, and 6-inch widths with ventilated or solid bottoms, channel cable tray is ideal for smaller instrumentation cables and cable tray runs involving a small number of cables.

Key Takeaways

For large-span galvanized cable trays, the typical steel thickness ranges from 1. 5 mm to 3. 0 mm depending on span, load, and galvanization type.

Material Thickness and Galvanization

The thickness of galvanized cable trays is primarily determined by span length, load capacity, and environmental conditions. For large-span trays (spans exceeding 3 meters), manufacturers typically use steel thickness between 1. 5 mm and 3.

0 mm. Hot-dip galvanized trays generally require slightly thicker steel than electro-galvanized trays to achieve equivalent structural strength and corrosion resistance, as the zinc coating adds a protective layer but does not significantly increase mechanical strength ( ). Standards and ComplianceIEC 61537 specifies mechanical strength, corrosion resistance, and load testing for metallic cable trays, ensuring that trays can safely support cables over long spans ( ).

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NEMA and AST

M standards provide guidance on galvanization thickness and coating quality. Hot-dip galvanization typically results in a zinc layer of 55–85 µm, while electro-galvanization produces thinner coatings around 10–25 µm, influencing the choice of base steel thickness ( ).

Design Considerations for Large Spans

Support spacing: Longer spans require closer support intervals or thicker tray material to prevent excessive deflection ( ). Load capacity: The tray thickness must accommodate the total weight of cables, including future expansion. For heavy-duty industrial applications, thicker steel (2.

0–3. 0 mm) is recommended. Environmental factors: In corrosive or outdoor environments, hot-dip galvanization with thicker steel is preferred for durability ( ).

Practical Recommendations

For spans up to 3 meters, 1. 5–2. 0 mm galvanized steel is generally sufficient.

For spans between 3–5 meters, 2. 0–2. 5 mm thickness is recommended.

For spans exceeding 5 meters or heavy cable loads, 2. 5–3. 0 mm steel ensures structural integrity and compliance with IEC 61537 ( ).

Selecting the correct thickness ensures mechanical stability, safety, and long-term corrosion resistance, which is critical for industrial and commercial electrical installations.

Article Content

GUIDE CABLE TRAYS TECHNICAL

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Solid flanged covers should be used when maximum enclosure of the cable is desired and no accumulation of heat is expected. Louvered flanged covers should be used when heat dissipation is

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

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The data sheet provides specifications for standard cable trays and accessories. Standard cable trays are 2.5 meters in length with a maximum thickness deviation of 0.01mm and dimensional deviation of

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NEMA Standards Publication VE 2-2018

Hot dipped galvanized after fabrication (H.D.G.A.F.) (see ASTM A123) steel, aluminum, and stainless steel cable tray and fiberglass or other non-metallic cable tray can be stored outside without cover

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