

Thickness of zinc coating on outdoor galvanized cable trays



Overview

Galvanized Cable Tray Zinc Coating Standards and The standard stipulates that the zinc coating thickness for electro-galvanized trays and Galvanized Cable.

Key Takeaways

The zinc coating on galvanized cable trays typically ranges from 18-55 microns for electro-galvanized trays and 45-85 microns for hot-dip galvanized trays, depending on steel thickness and environmental exposure. Galvanizing Methods and Thickness

1. Electro-galvanized (EG) cable trays:

- Zinc is deposited via electrolysis, producing a thin, bright, and uniform layer.
- Typical thickness: 18-20 μm (corresponding to a coating mass of $\sim 275 \text{ g/m}^2$ for Z275 steel) for standard tray sheets .
- Provides moderate corrosion resistance, suitable for indoor or less aggressive environments .

2. Hot-dip galvanized (HDG) cable trays:

- Steel is submerged in molten zinc, forming a zinc-iron alloy layer and a pure zinc layer.
- Local thickness for tray sheets (1.5-3 mm thick): $\geq 45 \mu\text{m}$ (coating mass $\geq 325 \text{ g/m}^2$).
- Heavier components like brackets or supports ($> 3 \text{ mm}$) require $\geq 55 \mu\text{m}$.

- Offers superior corrosion resistance, ideal for outdoor, coastal, or industrial environments .

Standards and Compliance

- GB/T 13912-2020: Specifies hot-dip galvanized coatings on fabricated steel articles, including local thickness and mean coating mass .
- GB/T 26941.1-2011: Defines requirements for electro-galvanized cable trays .
- ISO 1461 / UNI EN ISO 1461: International standard for hot-dip galvanizing, recommending $\geq 85 \mu\text{m}$ for steel thicker than 6 mm and providing measurement methods .

- IEC 61537: Defines performance classes for cable trays; HDG products are typically Class 6, while high-resistance coatings can reach Class 8 .

Measurement Methods

- Magnetic thickness gauges: Non-destructive, measure at multiple points to ensure local thickness compliance .
- Gravimetric (stripping and weighing): Determines mean coating mass for arbitration .
- Optical microscopy: Cross-sectional measurement of zinc layer .

Practical Considerations

- The coating should be continuous, uniform, and smooth; minor dull or light grey areas are acceptable, but defects like bare spots, blisters, or excessive zinc dross are not .
- Zinc protects steel both as a physical barrier and via sacrificial corrosion, forming a protective zinc carbonate layer over time .
- Thicker coatings extend service life, especially in aggressive environments, while thinner coatings are sufficient for indoor or low-corrosion areas . In summary, hot-dip galvanized cable trays require a minimum zinc thickness of 45–55 μm depending on component thickness, while electro-galvanized trays typically have 18–20 μm , with all measurements guided by relevant standards to ensure corrosion protection and durability.

Article Content

Galvanized Cable Tray: Types, Standards, Coating Thickness and

Learn the difference between pre-galvanized and hot dip galvanized cable trays, including coating thickness standards (ASTM A123,

Hot dip galvanized cable tray applications

This article explains where hot-dip galvanized cable trays perform best, how engineers should select appropriate zinc coating

The Professional Buyer's Guide to Selecting Galvanized Cable Trays

In case of heavy protection, find the ISO 1461 standard. This normally implies that the zinc is 65-85 microns thick. At

What is the acceptable thickness for galvanized cable trays

Galvanized cable trays require a steel thickness typically between 1.5 mm and 3 mm, with a minimum zinc coating of 45 µm for

12-SDMS-06

Cable tray shall be fabricated either from corrosion resistant metal such as aluminum alloy or carbon steel with corrosion resistant

HDG Cable Tray Specification Guide

How is the minimum zinc coating thickness for hot-dip galvanized cable trays ensured during manufacturing, and why is this

Technical specifications CT15 (Cable Tray perforated)

First, the steel is chemical cleaned and roughened in order to achieve a good bond. After the dipping process, the surplus zinc is

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Galvanised cable trunking, also known as Electro-Galvanised Cable Trunking, is a durable, versatile, and cost-effective cable tray

Types of Cable Tray According to Coating Type

Types of Cable Tray According to Coating Type. Explore the different types of cable trays based on coating types, including

Galvanized Cable Tray: Durable Industrial Solutions

Can galvanized cable trays be installed outdoors? Yes — especially hot-dip galvanized trays with thicker zinc coatings

Hot dip galvanized cable tray applications

A hot-dip galvanized cable tray is fabricated first and then fully immersed in molten zinc. During this process, a metallurgically

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The document provides technical specifications for perforated galvanized iron (GI) cable trays with tray covers. It outlines 5 key

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Galvanized cable bridges, also known as cable trays or cable ladders, are essential components in electrical and data

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The document provides a technical data sheet for cable trays including ladder and perforated types. It lists specifications for material,

Ultimate Guide To Choosing Right Galvanized Cable Tray

1.5 Durability and Corrosion Resistance The galvanized coating protects the underlying steel from corrosion, ensuring the tray can

Materials Used & Finishing Of A Cable Tray

Hot-Dip Galvanized: After the steel cable tray has been manufactured and assembled, the whole tray is immersed

GUIDE CABLE TRAYS TECHNICAL

Potential scale (mV) Stainless steel Zinc Zinc cable tray and stainless steel accessory Galvanic corrosion must be taken into account

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