Galvanizing Process for Cable Trays



Overview

Galvanization In Cable Tray Manufacturing and InstallationThe Galvanization of Cable Tray has to undergo a thorough process, which includes a proper treatm.

Key Takeaways

Cable trays are primarily protected from corrosion through electro-galvanization or hot-dip galvanization, with hot-dip being preferred for harsh environments. Electro-GalvanizationElectro-galvanization involves depositing a thin, uniform layer of zinc onto the steel surface through electrolysis. This method produces a bright and smooth finish but offers relatively weak corrosion resistance, making it suitable only for indoor or controlled environments.

The typical zinc coating thickness for electro-galvanized trays is ≥12μm, which is insufficient for exposure to marine or highly humid conditions, as it can develop white and red rust within weeks during sea transport or in coastal areas. The primary standard governing this process is GB/T 26941.1-2011 for general cable tray requirements.

Hot-

Dip GalvanizationHot-dip galvanization is the process of immersing steel components into molten zinc, forming a zinc-iron alloy layer topped with a pure zinc layer. This method produces a thicker, more adherent coating with superior corrosion resistance, making it ideal for outdoor, coastal, or industrial environments. The coating thickness typically ranges from 65 to 85μm for heavy-duty applications, and the process is standardized under GB/T 13912-2020.

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Advantages of Hot-Dip Galvanization

Provides sacrificial protection, where zinc corrodes preferentially to protect the steel. Forms a patina of zinc carbonate over time, enhancing long-term corrosion resistance. Coats all edges and corners, ensuring complete protection even after fabrication.

Reduces maintenance and extends service life in harsh environments.

Practical Considerations

For sea freight or coastal storage, trays should use hot-dip galvanized steel with a coating mass of at least 275g/m², corresponding to a zinc thickness of approximately 39μm, to ensure durability during transit. Overly thick coatings can become brittle and peel, while too thin coatings may rust prematurely. Quality control includes magnetic thickness testing and load testing to ensure mechanical integrity and corrosion protection.

Pre-galvanized sheets can be roll-formed into trays, providing a more uniform and dense coating compared to post-fabrication galvanization. SummaryElectro-galvanization: Thin, uniform, suitable for indoor use, limited corrosion resistance. Hot-dip galvanization: Thick, adherent, ideal for outdoor, coastal, and industrial environments, provides long-term protection.

Standards: GB/T 26941.1-2011 for electro-galvanized trays, GB/T 13912-2020 for hot-dip galvanized trays. Best practice: Use hot-dip galvanized trays with adequate coating thickness for harsh or marine environments to ensure longevity and safety. By selecting the appropriate galvanizing method and adhering to coating standards, cable trays can achieve optimal durability and corrosion resistance in their intended application.

Article Content

Galvanization In Cable Tray Manufacturing and Installation

The Galvanization of Cable Tray has to undergo a thorough process, which includes a proper treatment of cable trays.

Galvanized Cable Tray Zinc Coating Standards and

The galvanization process is the primary anti-corrosion treatment for cable trays. The quality of the zinc coating directly determines the tray''s service

Cable Tray Technical Guide A practical guide to product selection and ...

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In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and any additional loading that may be applied to the cable tray system (e.g.,

Cable Tray Hot Dip Galvanizing Processing

Witness the Hot Dip Galvanizing process in action! □□ This technique ensures superior corrosion resistance for metal components, enhancing their durability and longevity. Perfect for industrial...

Hot-dip galvanized steel cable trays | Technical guide for demanding ...

In this article, we explain what makes them different, how hot-dip galvanizing according to EN ISO 1461 relates to EN 61537 for cable tray systems, and in which types of projects it makes

CABLE TRAYS

There is a solution for each type of environment. This white paper compares the High Resistance (HR) and Hot-Dip Galvanising (HDG) solutions and highlights the new High Resistance range, ZnAl

How To Make Custom Galvanized Perforated Cable

Learn how to manufacture custom galvanized perforated cable trays with our professional guide. Master material selection, precision punching, and

Pre_Post_Galv

The steel is punched and formed into the fi nal product e.g. cable tray, cable ladder or basket tray and then immersed in a molten zinc bath for galvanising. Hence the term post-galvanised, galvanised

12-SDMS-06

Cable tray shall be fabricated either from corrosion resistant metal such as aluminum alloy or carbon steel with corrosion resistant coating such as zinc coatings as specified in the data schedule.

Raja Ramanna Centre for Advanced Technology

4.1 Ladder type cable trays shall be fabricated as per drawing No. RRCAT/ ACCEL/PCD/M457. The trays shall be shop fabricated and the fabrication process shall include pressing, punching, slotting,

Why Galvanized Cable Tray is the Best Option for

Galvanized Cable Trays Types Galv cable trays, essential for protecting electrical cables, come in three main types, each defined by its zinc

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Wiremesh Tray Finishes

MILL GALVANIZING When it comes to wire mesh cable tray, there can be some legitimate confusion surrounding the fi nishes that are available. Most wire mesh cable tray is coated with zinc for

Ultimate Guide To Choosing Right Galvanized Cable Tray

Galvanized cable tray, also known as Electro-Galvanized Cable Tray, is a durable, versatile, and cost-effective cable tray system suitable for various cable support

Professional Hot-Dip Galvanizing Process

This video takes you to our specialized partner facility where cable trays and supports undergo the Hot-Dip Galvanizing (HDG) process.

The Advantages of Galvanized Cable Trays | Galvanizers

Galvanization is a proven method that provides adequate and reasonable protection to the cable trays and materials used during construction. The galvanization process means an

Cable Tray Specifications and Guidelines

Accessories for cable trays like bends, tees and reducers are also described. The document also outlines the standard finishes that can be applied to cable trays, such as hot dip

Hot-Dip Galvanized vs. Aluminum | Cable Tray Institute

Increasingly, however, aluminum is becoming the material of choice for cable tray systems. In these days of shrinking construction budgets, why would engineers, contractors, and end users choose

How to Choose the Surface Corrosion Protection for Cable Trays

In the construction of electrical infrastructure, cable trays are essential components for supporting and protecting cables. Their durability and reliability are critical. To ensure that cable trays

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