

Methods for applying anti-corrosion coating to cable trays



Article Overview

Cable trays are protected from corrosion primarily through galvanization, zinc-rich coatings, painting, powder coating, and anodizing, with the choice depending on environmental conditions and standards compliance.

Galvanization

Hot-dip galvanization (HDG) is the most widely used method for steel cable trays. It involves immersing the tray in molten zinc at approximately 450°C, forming a robust zinc-iron alloy layer topped with pure zinc. This provides excellent adhesion and superior corrosion resistance, making it ideal for harsh environments such as outdoors, coastal areas, and heavy industry. The coating thickness is critical; for typical tray sheet metal (1.5–3 mm), the zinc layer should be at least 45 µm, corresponding to a coating mass of 325 g/m², in compliance with GB/T 13912-2020 standards. Electro-galvanization deposits a thin, uniform zinc layer via electrolysis. While it offers a bright finish, its corrosion resistance is lower than HDG, making it suitable for less aggressive environments.

Zinc-Rich Coatings

Zinc-rich coatings provide sacrificial protection, where zinc oxidizes before the steel corrodes. These coatings can be applied by spraying or centrifuging at lower temperatures (around 280°C), which is suitable for small parts or thin elements that cannot withstand HDG thermal shock

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Corrosion of metal is a main factor that affect cable tray lifespan. Therefore choice of surface treatment or the type of steel is very

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

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Cable tray coating breakthrough

Cable tray coating breakthrough Anti-Corrosion Methods and Materials ISSN: 0003-5599 Article publication date: 1 April

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Materials for Corrosion-Resistant Cable Trays Choosing the right material is crucial for corrosion protection. Common

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