

Fireproof Cable Trays Fire-resistant Cable Trays Galvanized Cable Trays

Article Overview

Fireproof cable trays are designed to resist high temperatures and prevent fire propagation, while galvanized cable trays primarily offer corrosion protection and structural support.

Material and Construction

Fireproof Cable Trays: These trays are typically made from steel or aluminum and coated with fire-resistant materials such as intumescent coatings, cementitious layers, or special fireproof paints. They are engineered to maintain structural integrity during a fire, preventing cables from falling and limiting fire spread. Fireproof trays are often used in critical infrastructure, tunnels, hospitals, and industrial plants where fire safety is paramount. **Galvanized Cable Trays:** Galvanized trays are made from steel coated with zinc to resist corrosion. They can be pre-galvanized (coated before fabrication) or hot-dip galvanized (immersed in molten zinc after fabrication), with hot-dip trays offering thicker, more durable coatings and superior corrosion resistance. Galvanized trays are widely used in commercial and industrial environments where moisture or mild corrosive conditions exist, but fire resistance is not a primary requirement.

Corrosion Resistance

- o Fireproof trays may include corrosion-resistant coatings, but their primary function is fire protection, not corrosion prevention. In highly corrosive environments, additional protective layers may be required.
- o Galvanized trays provide excellent corrosion resistance in moderate environments. Hot-dip galvanized trays outperform pre-galvanized trays in harsh conditions due to the thicker zinc layer.

Fire Safety

- o Fireproof trays are specifically designed to withstand high temperatures and prevent fire propagation along cable runs. They are tested according to fire safety standards and can maintain cable support during a fire.
- o Galvanized trays do not inherently provide fire resistance. While steel can tolerate heat to some extent, galvanized coatings may degrade at high temperatures, and the tray may fail under fire conditions.

Mechanical Strength and Durability

- o Fireproof trays are engineered to maintain structural integrity under fire, often reinforced to handle thermal expansion and weight of cables during emergencies.
- o Galvanized trays offer robust mechanical strength for normal operational loads, with hot-dip galvanized trays providing better resistance to bending and twisting than pre-galvanized trays.

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Cost Considerations

- o Fireproof trays are generally more expensive due to specialized coatings and fire testing requirements.
- o Galvanized trays are more cost-effective, especially pre-galvanized types, making them suitable for standard installations where fire risk is low .

Ideal Applications

Tray Type Best Use Cases
Fireproof Hospitals, tunnels, power plants, chemical plants, critical infrastructure where fire safety is essential
Galvanized Commercial buildings, industrial plants, outdoor installations with moderate exposure to moisture or corrosive elements

Key Takeaways

- o Choose fireproof cable trays when fire safety is critical and maintaining cable integrity during a fire is required.
- o Choose galvanized cable trays when corrosion resistance and cost-effectiveness are priorities, and fire risk is minimal.
- o For environments requiring both corrosion and fire protection, fireproof trays with additional corrosion-resistant coatings or stainless steel fireproof trays may be considered .

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The following charts give the number of 3M pillows needed to completely firestop an opening that cable tray passes through.* Two

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