Fiberglass cable tray I-beam type



Overview

The I-beam design is the most common cable tray construction. Our aluminum, I-beam ladder cable trays feature 3-inch tangents and are using connectable with our fittings and accessories.

Key Takeaways

Fiberglass I-beam cable trays combine corrosion-resistant FRP construction with high structural strength, suitable for heavy-duty and harsh environment applications.

Overview

Fiberglass cable trays, also known as FRP (Fiber Reinforced Plastic) trays, are made from fiber-reinforced polyester or vinyl ester resin, offering high corrosion resistance, long service life, and low maintenance compared with traditional steel trays. The I-beam design is a side rail style that provides enhanced load-bearing capacity and allows for flexible placement of hold-down clips and expansion guides either inside or outside the tray. This design is particularly effective for heavy-duty applications, supporting over 100 pounds per foot on spans up to 30 feet in some aluminum I-beam trays, and similar structural principles apply to fiberglass variants.

Structural Characteristics

Fiberglass I-beam trays function as beams under uniformly distributed loads, with the side rails acting as the main structural members. Key beam configurations include: Simple Beam: Supported at both ends but free to deflect under load. Fixed Beam: Ends rigidly attached to supports, increasing load capacity.

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Cantilever Beam: One end fixed, the other unsupported, often used for wall-mounted brackets. The I-beam shape enhances rigidity and resistance to bending, making it suitable for industrial, marine, and corrosive environments.

Applications

Fiberglass I-beam cable trays are ideal for: Marine and offshore installations, meeting ABS standards for harsh environments. Industrial plants and substations, where heavy power cables require strong support. Vertical installations and areas with chemical exposure, due to FRP's corrosion resistance.

The open I-beam design allows for easy cable positioning, ventilation, and heat dissipation, while still providing structural strength comparable to metal trays.

Advantages

Corrosion resistance: FRP resists chemicals, moisture, and saltwater exposure. High strength-to-weight ratio: Supports heavy cable loads without excessive weight. Low maintenance: No need for painting or anti-corrosion treatments.

Flexible installation: Hold-down clips and expansion guides can be positioned inside or outside the I-beam. Compatibility with accessories: Fittings, bends, tees, reducers, and covers are available for complete system assembly.

Summary

Fiberglass I-beam cable trays are a robust, corrosion-resistant solution for routing and supporting electrical and instrumentation cables in demanding environments. Their beam-like structural behavior, combined with FRP material advantages, makes them suitable for heavy-duty, marine, and industrial applications, offering both strength and long-term durability.

Article Content

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Polymer Cable Trays

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