Complete Guide to Fiberglass Cable Trays



Overview

Learn fiberglass cable tray types and specs. Compare trough, tray, ladder and epoxy composite systems to choose the right cable support for industrial projects.

Key Takeaways

Fiberglass cable trays are lightweight, corrosion-resistant, and electrically insulating systems used to support, route, and protect cables in industrial, telecom, and outdoor environments.

Advantages of Fiberglass Cable Trays

Fiberglass, or glass-reinforced plastic (GRP), offers several benefits over traditional metal trays: it is non-conductive, reducing the risk of electrocution, resistant to corrosion and chemicals, lightweight for easier installation, and requires low maintenance while providing long-term durability. Fiberglass trays also come in various colors and smooth finishes, allowing them to blend with architectural designs.

Preparation and Planning

Before installation, review construction drawings and conduct on-site inspections to determine the tray route, installation height, support spacing, and layer structure. For complex environments, pre-measure bends, ramps, and T-junctions to ensure proper alignment. Verify that the tray load capacity matches the cable quantity to prevent deformation or loosening.

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Cutting and Drilling

Fiberglass is easy to work with using ordinary hand tools, but care is needed to avoid excessive pressure, which can dull tools or damage the resin. Field cutting can be done with a circular saw with an abrasive cut-off wheel or a hack saw. Drill using standard twist drills, and seal any cut or drilled surfaces with a compatible resin to maintain strength and corrosion resistance.

For large quantities, carbide-tipped saw blades and drill bits are recommended.

Support and Installation

Support spacing: Ensure each tray section is equal to or greater than the support span, with splices ideally located at quarter spans. Hanging and clamps: Use appropriate clamps (e.g., B-Line BFPU751 series) and fully engage all-thread rods to meet load ratings. Torque: A snug torque of 3–4 ft.-lbs. is sufficient for thread rod nuts.

Trapeze spacing: Maintain spacing between supports according to splice plate distances. Load safety factor: Design with a 3: 1 safety factor to ensure structural integrity.

Tray Types and Applications

Fiberglass trays come in ladder, trough, covered, and channel styles, suitable for industrial, telecom, marine, and outdoor installations. Covered trays protect cables from rain, debris, and sunlight, while ladder trays allow better ventilation. Tray geometry, wall thickness, and resin system influence performance, fire behavior, and UV durability.

Maintenance and Safety

Fiberglass trays require minimal maintenance due to their aging resistance and non-corrosive properties. Their non-conductive nature enhances electrical safety, and proper installation ensures long-term reliability. Always verify that the tray system complies with NEMA FG-1 standards and local electrical codes.

By following these guidelines, fiberglass cable trays can be effectively used to organize, protect, and support cables in a wide range of environments, combining safety, durability, and aesthetic appeal.

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FG 1, Fiberglass Cable Tray Systems Covers construction and test requirements for continuous, complete nonmetallic systems of ladder, ventilated, solid bottom cable trays, or channel type trays,

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