Methods for constructing cable trays in factory buildings



Overview

Cable Tray Technical Guide A practical guide to product selection and. The choice of method should be discussed with a local inspector. The best decision.

Key Takeaways

Proper cable tray installation in factory buildings requires careful planning, route marking, material preparation, secure mounting, and organized cable laying to ensure safety, accessibility, and compliance with standards.

Planning and Preparation

Before installation, review the approved shop drawings to determine tray routes, lengths, and locations in electrical rooms, plant rooms, and service corridors. Conduct a site survey to ensure the area is clean, free of debris, and ready for installation. Verify that all materials, including trays, ladders, trunking, and accessories, meet approved specifications and are free from damage.

Store trays horizontally on flat surfaces with timber supports at intervals of about one meter, and protect them from moisture and sunlight.

Route Marking and Layout

Mark the horizontal and vertical tray routes according to the approved drawings, ensuring no clashes with other services. Maintain sufficient clearance for cable pulling, ventilation, and future maintenance. Plan for proper load distribution and separation of different voltage or signal cables to prevent interference and overheating.

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Tray Selection and Sizing

Select the appropriate tray type based on the environment and cable requirements: ladder trays for airflow and easy cable entry, perforated trays for lighter loads, and solid-bottom trays for protection against dust or liquids. Calculate tray width and depth to accommodate the cable count without exceeding 40% of tray capacity, ensuring proper heat dissipation and compliance with design standards.

Mounting and Support

Install supports using brackets, clamps, or hangers, spaced typically 1. 5 to 3 meters apart depending on tray type and load. Ensure trays are level, straight, and securely connected using appropriate fittings.

For long runs, use cable tray rollers to prevent kinks and damage during cable laying. Inspect all supports and connections for stability and alignment before proceeding.

Cable Laying and Organization

Lay cables neatly within the trays, using cable ties or straps to separate by voltage, function, or type. Avoid excessive bending and maintain proper slack for expansion or future adjustments. Install markers for cable identification to facilitate maintenance and troubleshooting.

Ensure compliance with fire safety requirements when passing through walls or floors.

Safety and Quality Assurance

All personnel should attend safety induction and demonstrate competency in cable tray installation. Supervisors must monitor work, correct unsafe conditions, and ensure adherence to QA/QC procedures, including inspection checklists and test plans. Use proper lifting equipment, scaffolding, and handling tools to prevent injuries and material damage.

Final Checks

After installation, verify that all trays are secure, level, and free from obstructions. Confirm that cable fill, spacing, and identification meet design and safety standards. Document inspections and maintain records for future reference.

By following these methods, factory buildings can achieve safe, organized, and maintainable cable tray systems that comply with technical standards and support long-term operational efficiency.

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