

Flat steel inside the cable tray



Overview

Cable tray installed in a hazardous location must contain only those cables that are appropriate for this type of environment as defined in Chapter 5 of the NEC.

Key Takeaways

Flat steel can be used along cable trays to provide structural support, distribute load, and serve as a mounting surface for cables and accessories.

Purpose of Flat Steel in Cable Tray Installations

Flat steel is often laid along cable trays to enhance mechanical support, especially for heavy or multiple cables. It helps prevent sagging, maintains tray alignment, and provides a stable surface for securing cables with cleats, ties, or saddles. In some installations, flat steel also serves as a grounding or bonding path, ensuring electrical continuity along the tray system.

Installation Guidelines

Support Spacing: Flat steel should be supported at intervals consistent with the cable tray's load rating. Typically, cable tray supports are spaced at 1.2 meters (4 feet) maximum for standard runs, with additional support at bends, branches, or offsets.

Attachment: The flat steel can be fixed to the tray supports using bolts, clamps, or welded connections, depending on the tray type and material. Ensure that the steel is aligned with the tray edges to avoid interference with cable routing.

Surface Protection: If the flat steel is exposed to moisture or corrosive environments, it should be galvanized, stainless, or coated to prevent corrosion.

Material Considerations

Steel Type: Mild steel, pre-galvanized steel, or stainless steel are commonly used. Stainless steel (e.g., AISI 316L) offers superior corrosion resistance, especially in industrial or outdoor environments. **Thickness:** The thickness of the flat steel should be sufficient to support the expected cable load without excessive deflection.

Heavy-duty trays may require thicker steel or additional reinforcement.

Practical Tips

Ensure clearance for cable pulling and future maintenance when laying flat steel along the tray. Use insulating pads or spacers if the flat steel is in direct contact with cables to prevent abrasion or damage to cable jackets. For long runs, consider continuous flat steel strips or overlapping sections with splice plates to maintain structural integrity.

By following these guidelines, flat steel can effectively enhance the strength, stability, and safety of cable tray installations in commercial and industrial settings.

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