Mesh Cable Tray Binding Process

Article Overview

The mesh cable tray binding process involves wire feeding, welding, mesh forming, bending, and proper bonding/grounding to ensure mechanical strength and electrical safety.

Manufacturing and Assembly Process

o Linear Wire Feeding The process begins with feeding straight wires into a linear feeding system, which positions the wires accurately for welding. Servo motors control the feed rate to ensure precision and consistent spacing between wires .

o Horizontal Wire Placement Horizontal wires are inserted into a blanking system, where SMC cylinders control precise placement. This ensures the mesh grid maintains uniform dimensions and alignment .

o Automatic Welding Welding electrodes, controlled by automated cylinders, join the intersecting wires at each node. This step creates a strong, durable mesh panel suitable for supporting electrical cables .

o Mesh Forming After welding, the mesh panels are formed into cable tray sections. Two panels can be welded simultaneously to increase production efficiency. The mesh structure allows flexibility for routing cables in multiple directions .

o Bending and Shaping The welded mesh panels are placed in a bending system to create the required tray shapes, including straight sections, bends, and branches. Proper bending ensures the tray fits installation requirements without compromising structural integrity .

Bonding and Grounding Process

o Tray Bonding Metallic mesh trays must be electrically continuous. Bonding is achieved at splice points and connections to building steel using clamps, threaded rods, or specialized connectors. This ensures a low-resistance path for fault currents .

o Grounding Conductor Installation If the tray serves as an Equipment Grounding Conductor (EGC), the grounding conductor must meet NEC minimum cross-sectional area requirements. For non-EGC trays, a separate grounding conductor is installed to maintain electrical safety .

o Verification of Electrical Continuity After bonding, installers verify continuity across the entire tray run. Proper bonding prevents shock hazards, equipment malfunction, and ensures compliance with NEC Article 392 .

Key Considerations

o Material and Coating: Powder-coated or galvanized trays may reduce conductivity at connection points, so bonding integrity must be checked .

o Support Placement: Supports should be installed before cable loading, especially at bends and coupler locations, to prevent deflection and maintain load capacity .

o Cable Compatibility: Different cable types (power vs. data) influence bonding and grounding requirements due to varying fault current potentials . By following this process flow, mesh cable trays achieve both

mechanical stability and electrical safety, making them suitable for commercial, industrial, and data center installations .

Installing wire mesh cable trays is a straightforward process when done correctly. By

Per NEC 392, the national electrical code section for cable tray, all cable tray systems must be properly BONDED, per section

How to install wire mesh cable trays like a pro with this comprehensive guide. Our team helps with installation preparations and pro

A bare copper equipment grounding conductor should not be placed in an aluminum cable tray due to the potential for electrolytic

Wire Mesh Cable Tray Installation Notice: Bends, Risers, T Junctions, Crosses and Reducers can be made from wire mesh cable

CABLOFIL WIRE MESH TRAY Cablofil, the inventor of wire mesh cable tray is a revolutionary cable management system that

Cable tray sections, fittings, and connected raceways are bonded in accordance with 250.96, using bolted mechanical connectors or

INTRODUCTION The B-Line series Cable Tray Manual was produced by our technical staff. We recognize the need for a complete

Wire Mesh Cable Tray Manage cables with an open overhead system that"s designed to handle heavy

Grounding and bonding of cable trays There are three wiring options for providing an EGC in

1. OverviewThis report describes the manufacturing and mechanical bending process of

Welcome to our step-by-step guide on installing cable trays! In this video, we"ll explore the

The final drawings for a cable tray wiring system may be completed and sent out for bid or construction more quickly

Recent claims have suggested a field cut (modification) to cable tray for the creation of bends and turns will cause that system to lose

? Precision Press Brake Forming for Wire Mesh Cable Trays The press brake

If an EGC cable is installed in or on a cable tray, it should be bonded to each or alternate cable tray sections via grounding clamps

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