

DIY various bends in cable trays



Overview

The document provides instructions for forming various bends and joints in electrical trunking and cable trays.

Key Takeaways

Cable tray bends can be constructed using proper cutting, measuring, and bending techniques to achieve horizontal, vertical, tee, cross, and offset configurations safely and efficiently. Preparation and Safety

Before bending any cable tray, inspect it for dents, cracks, or defects and clean it thoroughly to remove dirt or moisture, ensuring accurate measurements and smooth bends. Use appropriate personal protective equipment such as gloves and eye protection when cutting or grinding metal trays. Select the right bending tools, such as a cable tray bender or a metal bar for manual bending, depending on the tray material and size .

Types of Bends and Construction Techniques

1. Horizontal 90° Bend (Flat Bend)

- Mark the tray where the bend is required.
- Remove part of the tray lip (typically 2/3 of the tray width, split evenly on both sides) using a hand grinder or file.
- Cut along the center line carefully to avoid tray deformation.

- Flatten the tray lip at the bend point with a blunt object.
 - Bend the tray to 90° and bolt the two parts together.
 - Add a gusset by cutting a piece of tray to fit the internal edges and secure it with bolts for reinforcement . 2. Vertical Bend (Up/Down Bend)
 - Similar to a horizontal bend, but the tray is bent along the vertical plane.
 - Ensure the bend angle matches the installation requirements, typically 30°–90°.
 - Cut and flatten the tray edges as needed to prevent stress on cables . 3. Tee (T-Junction) Bend
 - Used to branch a tray into two directions.
 - Cut the tray at the junction point and bend the side section to form a perpendicular connection.
 - Reinforce with gussets or brackets to maintain structural integrity . 4. Cross Bend (4-Way Junction)
 - Allows four-way cable routing.
 - Requires precise cutting and bending of all intersecting trays.
 - Secure each connection with bolts and gussets to prevent deformation . 5. Offset Bend (Side Shift)
 - Used to navigate around obstacles while maintaining the tray's horizontal or vertical alignment.
 - Cut the tray at two points and bend the middle section sideways.
 - Ensure smooth transitions to minimize cable stress .
- Tips for Smooth Bends
- Avoid cutting all wires in wire mesh trays; partial cuts allow controlled bending.
 - Measure twice before cutting to ensure accurate angles.
 - Use a bending machine for large or thick trays to reduce manual effort.
 - Smooth out sharp edges to prevent cable damage.
 - Reinforce bends with gussets or brackets for added strength . By following these steps, you can construct professional, safe, and durable bends in both wire mesh and solid cable trays, optimizing cable routing and installation efficiency.

Article Content

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