

Introduction to the Fabrication of Various Bends in Cable Trays

Article Overview

Cable tray bends, including 90° horizontal, vertical, tees, offsets, and cross junctions, can be fabricated on-site using proper marking, cutting, bending, and reinforcement techniques.

Types of Common Bends

- o Horizontal 90° Bend (Flat Bend) - Changes the cable tray direction on a horizontal plane.
- o Vertical Bend (Up/Down Bend) - Allows the tray to rise or drop vertically.
- o Tee (T-Junction) Bend - Creates a branch from the main tray run.
- o Cross Bend (4-Way Junction) - Connects four tray sections at a single point.
- o Offset Bend (Side Shift) - Shifts the tray laterally to avoid obstacles .

Materials and Tools Required

- o Materials: Galvanized steel or aluminum sheets (commonly 1.6 mm thick), wire mesh trays, metal strips for reinforcement.
- o Tools: Measuring tape, marker or scribe, angle grinder or metal shear, bolt cutter, pliers, hand gloves, drill machine, rivets or nuts & bolts, manual or hydraulic press brake, welding machine (optional), .

Fabrication Process

- o Marking the Bend: Determine the required angle (commonly 45° or 90°) and mark the centerline and sides of the tray. Divide the curve into equal segments to ensure a smooth radius .
- o Cutting Side Walls: For sheet metal trays, cut triangular or rectangular sections on the side walls to allow bending without deforming the tray. Wire mesh trays may not require cutting due to their flexibility .
- o Forming the Bend: Gradually bend each segment using a manual bender, press brake, or hand tools. Ensure uniform bending to maintain structural integrity and proper cable support .
- o Rejoining and Reinforcement: After bending, rejoin any cut sections using welding, bolting, or riveting with metal strips. For wire mesh trays, bends are often self-supporting without additional reinforcement .
- o Safety and Accuracy: Always wear gloves and protective gear, measure accurately, and maintain the minimum bend radius to prevent cable damage .

Additional Considerations

- o Bend Radius: Maintain a radius that prevents cable stress and allows easy cable pulling.
- o On-Site Flexibility: Wire mesh trays allow easy on-site modification without expensive fittings, while solid or perforated trays may require pre-fabricated bends .
- o Professional Finish: Proper cutting, bending, and reinforcement ensure a neat installation and long-term durability . By following these steps, electrical installers can fabricate custom bends efficiently, ensuring safe

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and organized cable routing while minimizing the need for additional fittings or accessories.

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Forming the Bend: Use a manual bender or press brake to bend each section slightly to

The scope of this report covers the primary mechanical designs and bend configurations of cable tray systems used in

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In this video they are producing 90 degrees bend in steel cable tray. The learners fabricate

Includes a full demonstration on how bend steel cable tray using a crimping to. You can

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The document provides instructions for forming various bends and joints in electrical trunking and cable trays. It describes: 1) How to

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This document provides information about cable trays and accessories, including straight cable trays, perforated trays, returned edge

You can buy a manufactured 90 degree bend or make one on a cable tray bending

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Trays with various loading diameters safely carry up to 260 lines while maintaining the proper bend radius for optimal cable

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