

How to make a 90-degree horizontal bend in a cable tray

Article Overview

A 90-degree horizontal bend in a cable tray can be achieved using either pre-fabricated horizontal elbows or by fabricating a bend from a straight tray section, ensuring proper bend radius and structural support.

Using Pre-Fabricated Horizontal Elbows

Pre-fabricated 90-degree horizontal elbows are available for ladder and I-beam cable tray systems. These fittings are designed to maintain cable organization, support, and ventilation while allowing a smooth directional change. They come in various materials such as galvanized steel, stainless steel, or aluminum, and are compatible with different NEMA classes and tray sizes . Installation typically involves bolting the elbow to the existing tray using splice plates and hardware included with the fitting .

Fabricating a 90-Degree Bend

If a pre-fabricated fitting is not used, a straight tray section can be converted into a 90-degree bend through a mitered or fabricated method:

- o Mark the Center Line: Determine the bend location and draw a line across the tray base.
- o Cut 45-Degree Angles: Measure and mark 45-degree cuts on both sides of the center line, corresponding to the tray width.
- o Cut Side Channels: Cut the tray flanges at the 45-degree angles, stopping at the base.
- o V-Notch the Base: Remove V-shaped sections from the base to allow the sides to close together.
- o Bend the Tray: Bend the tray at the center point so the V-cuts close, forming a 90-degree angle.
- o Secure the Joint: Drill holes through overlapping sides and fasten with bolts, washers, and nuts. Additional bracing or connecting plates may be used for larger trays.
- o Finish the Surface: Apply cold galvanizing spray to exposed metal to prevent corrosion .

Technical Considerations

- o Bend Radius: Ensure the internal radius of the bend meets the minimum bend requirement of the cables to prevent damage .
- o Material and Load: Choose a material and thickness suitable for the cable load and environmental conditions.
- o Ventilation: Ladder-type trays allow airflow to prevent overheating of cables.
- o Alignment: Ensure the bend aligns with the overall tray layout to maintain a professional and safe installation. By following these methods, you can achieve a reliable and structurally sound 90-degree horizontal bend in your cable tray system, whether using pre-fabricated fittings or fabricating the bend on-site.



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I am an apprentice electrician and looking knowledge on how to create a 90° bend on a cable tray suitable for SWA. I understand we

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The tray can be cut and bent, allowing cable runs to be adjusted on the jobsite. The

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The assembly guide below will help the cable tray installer make the bends and others without difficulty even he had never installed

This is a step by set guide on how to make (fabricate) a 90 degree bend in metal cable

Construction of a flat 90° bend (E) Then bend the tray to 90° and bolt the two parts together (F)
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