

Straight and Bend Cable Tray Fabrication



Overview

Cable Tray Design and Components Guide This document provides information about cable trays and accessories, including straight cable trays, perforated tray.

Key Takeaways

Cable tray fabrication involves forming straight sections and bends using roll forming, press brakes, CNC punching, or manual bending techniques, depending on tray type and production volume. Straight Cable Tray Fabrication

Straight sections of cable trays, whether ladder, perforated, or solid-bottom, are typically produced from galvanized steel, stainless steel, or aluminum. The process begins with decoiling and leveling metal sheets, followed by punching holes or slots for mounting and cable access using a CNC punching machine. For high-volume production, roll forming lines shape the metal into U-channel, C-channel, or ladder profiles continuously, with a flying shear or fixed-length shear cutting sections to the desired length. Straight sections are often 2-3 meters long and can be finished with protective coatings or rubber end caps to prevent damage to cables during installation .

Bending and Fitting Fabrication

Bends, elbows, tees, crosses, and reducers are essential for routing cable trays around obstacles. These are usually fabricated using:

- Press brake machines: Flat blanks are bent into precise angles for elbows, tees, and reducers. This method ensures repeatable accuracy for custom fittings .

- Manual bending: On-site adjustments can be made using metal bars, crimping tools, or bolt cutters for wire mesh trays. Rubber caps or zinc drag from bolt cutters protect cut ends from corrosion .
- Cable tray bending machines: Specialized machines allow internal or external 90-degree bends without deforming the tray, suitable for ladder or solid-bottom trays . For ladder trays, smooth gradual bends are preferred to prevent cable strain, and modular fittings can be used to maintain structural integrity and load capacity .

On-Site Fabrication Tips

- Wire mesh trays can be bent live at the project using bolt cutters and simple hand tools, making them flexible for custom installations .
- Ladder trays require careful alignment during bending to maintain the tray's structural support and ensure proper cable management .
- Protective measures, such as rubber end caps or zinc-coated edges, prevent damage to cables and maintain corrosion resistance .

Machine Selection for Fabrication Shops

For manufacturers producing both straight and bent sections:

- Roll forming lines are ideal for high-volume straight tray production.
- Press brake-centric setups offer flexibility for custom bends, elbows, and project-specific fittings.
- CNC punching machines handle repeated patterns, mounting holes, and slots efficiently.
- Laser cutting or hydraulic shearing can prepare blanks for bending . Choosing between a high-speed roll line and a flexible press brake setup depends on production volume, tray variety, and tolerance requirements.

Summary

Effective cable tray fabrication combines straight section production with precise bending techniques. High-volume operations rely on roll forming and CNC punching, while on-site or custom installations use manual bending, crimping, or press brake forming. Proper tooling, protective measures, and adherence to design specifications ensure structural integrity, cable safety, and efficient installation .

Article Content

Cable Tray Design and Components Guide

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

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Assembly Guide

Guide for making bends, tees, crosses, risers and reducers from straight sections of wire basket cable trays live at the project.

Working with EzyTrays

EzyStrut offers useful product installation and fabrication information for their range of EzyTray cable tray products.

B-Line series cable ladder support system catalog for the ...

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Flextray wire basket section of NEMA cable tray

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How To Bend Cable Tray

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90 Degrees Bends in Cable Tray

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

Cable Tray Technical Guide A practical guide to product selection

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

Cable Tray Fabrication: Step-by-Step Channel Processing

This short shows key steps: cutting sheet metal to size, punching or slotting for wire access, bending edges to form

CABLE TRAY INSTITUTE

The Cable Tray Institute (CTI) was founded in 1991 to support the cable tray industry by engaging in research, development,

Cable trays

We offer a wide range of cable tray systems to support tubing, electrical cables and instrumentation. Our cable trays are produced in

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wire mesh cable tray fitting: A fitting for wire mesh cable tray systems, fabricated from wire mesh cable tray straight sections. The

How to construct a flat 90° bend for Cable Trays

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

Related Video Reference

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