Bending process of trough-type cable trays



Overview

This installation guide provides comprehensive instructions for the assembly, cutting, and installation of the Trough (P31) cable tray system.

Key Takeaways

Trough-type cable trays are bent using controlled mechanical methods to maintain structural integrity, proper cable support, and safe installation.

Overview of Trough-

Type Cable TraysTrough-type cable trays are designed for larger cable diameters or multiple cable gangs, providing robust support and protection. They typically have depths ranging from 50mm to 100mm and are constructed from materials such as mild steel, aluminum, or stainless steel with thicknesses from 1. 0mm up to 2.

3mm depending on duty requirements. The trays are often perforated to allow ventilation and reduce weight, and all edges are smoothed to prevent cable damage. Bending ProcessPre-Bending ConsiderationsEnsure the tray is free from sharp edges and all perforations are accounted for.

Verify the material type and thickness, as steel, aluminum, and stainless steel have different bending tolerances. Determine the required bend angle and radius, keeping in mind the minimum bend radius for cables to prevent insulation damage. Mechanical BendingTrough-type trays are typically bent four times along their cross-section to form the trough shape, compared to channel trays which are bent twice.

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Bending is performed using press brakes, rollers, or specialized bending machines to ensure uniformity and avoid deformation. For perforated trays, bends should occur in unperforated sections when possible, and cut edges should be treated with zinc-rich paint to prevent corrosion.

Post-

Bending Handling

After bending, all edges must be smoothed to prevent cable insulation damage and ensure installer safety. Bends should maintain the structural integrity of the tray, avoiding cracks or excessive thinning of the material. Pre-fabricated bends and turns are often available as stocked items, minimizing on-site fabrication and ensuring precision.

Installation Considerations

Support brackets should be evenly spaced to limit deflection to 1/175 of the span. Covers and snap-in components should fit precisely to maintain cable protection and aesthetics. Ventilated designs help reduce heat buildup and prevent moisture accumulation within the tray.

By following these steps, trough-type cable trays can be bent and installed safely, providing durable, professional cable management while protecting cables from mechanical stress and maintaining compliance with installation standards.

Article Content

GUIDE CABLE TRAYS TECHNICAL

NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian Electrical Code, Part I and the National Electrical Code®

Cable Tray Technical Guide A practical guide to product selection and ...

In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and any additional loading that may be applied to the cable tray system (e.g.,

AF_UnifiedCat_Interior_PRINT

PDF file

Cable tray manual - 2014 version - Eaton

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Quality Type TC, Type PLTC, or Type ITC small diameter multiconductor control and instrumentation cables will not be damaged due to the cable tray rung spacing selected, but the installation may not

Legrand Trough P31 Trough / Cable Tray Installation Guide

This installation guide provides comprehensive instructions for the assembly, cutting, and installation of the Trough (P31) cable tray system.

Trunking Cutting Techniques Guide | PDF | Metalworking | Tools

The document provides instructions for forming various bends and joints in electrical trunking and cable trays. It describes: 1) How to mark and cut a right-angle internal bend in a section of trunking,

Full cable tray systems specification document

A. General: Except as otherwise indicated, provide metal cable trays, of types, classes and sizes indicated; with splice plates, bolts, nuts and washers for connecting units.

LEGRAND CABLE TRAYS TECHNICAL GUIDE

Not all cable trays are equivalent. The mechanical and electrical characteristics, tests, certifications, overall quality management, recommendations mentioned in this technical guide only apply to our

Document DICOS

To install the cable tray supports, first find the required elevation from the floor to the bottom of the cable tray and establish a level line with a laser or a nylon string.

CABLE TRAY SYSTEMS GUIDE

The Ladder Tray features light, rugged, tubular steel construction. It is designed for mechanical support and strain relief in long runs of cable and creates a smooth gradual bend for cable. Rail and stringer

Types of Bends in Wire Mesh Cable Trays: A Detailed

Wire mesh cable trays are widely used in industrial and commercial installations to support and manage cables effectively. One of their greatest

Cable Tray Roll Forming Machine

Perforated Type Cable Tray Machine Perforated cable trays feature uniform holes that offer effective ventilation and protection for cables against external damage.

IEC Standard for Cable Tray: Complete Technical Guide

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IEC Standard for Cable Tray: Complete Technical Guide The International Electrotechnical Commission (IEC) provides detailed guidelines for

Full cable tray systems specification document

B. Cable tray systems are defined to include, but are not limited to straight sections of [ladder type] [trough type] [solid bottom type] [channel type] cable trays, bends, tees, elbows, drop-outs, supports

Cable Tray Technical Guide A practical guide to product selection and ...

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a practical reference regarding cable tray

Cable tray manual

Nearly every aspect of cable tray design and installation has been explored for the use of the reader. If a topic has not been covered sufficiently to answer a specific question or if additional information is

Exploring the Different Bending Types for Wire Mesh

Wire mesh cable trays have become a vital component in modern electrical installations, offering flexibility, durability, and easy customization for

Best Practice Guide to Cable Ladder and Cable Tray Systems

Cable ladder systems and cable tray systems are designed for use as supports for cables and not as enclosures giving full mechanical protection. They are not intended to be used as ladders, walk ways

Cable Trays Selection Guide: Types, Features, Applications

Cable trays are components of support systems for power and communications cables and wires. A cable tray system supports and protects both power and signal cables and facilitates upgrading,

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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