How to make trapezoidal bends in cable trays

Overview

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

Key Takeaways

Bends in trapezoidal cable trays can be made using pre-manufactured fittings, cable tray bending machines, or manual on-site techniques with simple tools like metal bars and bolt cutters.Pre-Manufactured Fittings

The easiest method is to use factory-made 90° bends, tees, or offsets that match the tray size. These fittings ensure proper bend radius and maintain structural integrity while complying with standards such as IEC 61537 and NEC 392, which require the tray bend radius to be at least equal to the minimum cable bend radius, calculated using the largest cable diameter in the tray .

Cable Tray Bending Machines

For on-site fabrication, a cable tray bending machine can create precise bends. The process involves:

• Marking the bend location on the tray.

• Positioning the tray in the bending machine.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

• Applying controlled force to form the desired angle (e.g., 45° or 90°). This method is suitable for steel or metallic trays and allows consistent, smooth bends without damaging the tray or cables .

Manual On-Site Bending

When a bending machine is unavailable, manual methods can be used:

• Metal Bar Technique: Insert a sturdy metal bar along the tray section to act as a lever. Gradually bend the tray to the desired angle while ensuring the bend radius meets cable requirements .

• Bolt Cutter Method: For wire mesh or perforated trays, partially cut the tray wires at the bend line using a bolt cutter. This allows the tray to flex and form a bend. After bending, file sharp edges and ensure the tray lip is supported to maintain strength .

Calculating Bend Radius

To maintain cable integrity:

• Identify the largest cable diameter in the tray.

• Multiply by the bending factor recommended for the cable type.

• Ensure the tray bend radius meets or exceeds this value. This prevents cable damage and ensures compliance with electrical standards .

Types of Bends

• Horizontal 90° Bend (Flat Bend): Used for turning the tray left or right.

• Vertical Bend (Up/Down): For changing elevation between levels.

• Tee (T-Junction) and Cross (4-Way): For branching or multi-direction routing.

• Offset Bend: To avoid obstacles or structural elements .

Safety and Best Practices

• Always mark the bend area before cutting or bending.

• Wear safety gloves and eye protection.

• Avoid sharp bends that exceed cable bend limits.

• Support the tray at the bend to prevent deformation.

• Use rubber caps or protective coatings on cut ends to prevent injury and corrosion .

By combining these methods, electricians and contractors can create precise, safe, and professional bends in trapezoidal cable trays directly on-site without relying solely on pre-fabricated fittings.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Article Content

Bending Cable Tray

You can buy a manufactured 90 degree bend or make one on a cable tray bending machine but in this video I show

How to Bend Cable Tray

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

How to Create Bends in Wire Mesh Cable Trays (Step

Creating bends in wire mesh cable trays is simple, fast, and cost-effective when done correctly. With

Horizontal 90° Cable Tray Bend – Fabrication Method

Horizontal 90° Cable Tray Bend – Fabrication Method #CableTray #90DegreeBend #ElectricalWork

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

Cable Tray Bend and Offset Formulas | PDF | Galvanization | Screw

The document discusses Metstrut cable tray systems, including their configuration, materials, dimensions, and compliance with

Assembly Guide

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

How To Bend Cable Tray

Discover the best techniques and tools to bend cable tray easily and efficiently. Learn step-by-step instructions and

Bending Cable Tray

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

Cable Tray Fitting creation (Elbow Bend)

In the real world, to make a 45 elbow, we need two segments, to make a 90 elbow, we need three segments I''ve also

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

How to make a bend on an open cable tray

This video shows you how easy it is to form and bend an open cable tray from SILTEC -

How To Bend Cable Tray

Discover the best techniques and tools to bend cable tray easily and efficiently. Learn step-by-step instructions and

90° Cable Tray Bend Installation Guide | PDF

90° Cable Tray Bend Installation Guide The document provides instructions for the installation of 90° short radius bends for wire

Make a (45-45) 90 Gusset Bend in Electrical Cable Tray In One Piece

The Easy Guide to... How to make a 90 electrical cable tray bend to measurement with a

How to Bend Cable Tray Students trading aid on how best to

Includes a full demonstration on how bend steel cable tray using a bending machine.

Bending Cable Tray

Bending Cable Tray - NO Fancy Tools Required Students trading aid on how best to put

Configuration methods

Bend side wires on both sides of the tray and reassemble using adjustable clamps to attach side rail edge and universal splices to

TIPS HOW TO BEND CABLE TRAY USING X.80 FORMULA ANY SIZES OF CABLE TRAY ...

How to bend 22.5 degree of cable tray 3 layer with the same distance and gap • HOW

How to Create an Internal 90 Bend in Cable Tray | TikTok

Learn the step-by-step process to make an internal 90 bend in cable tray. Ideal for electricians and contractors looking to enhance

HOW TO FABRICATE (INSIDE ELBOW)AND (OUTSIDE ELBOW)

How to bend 22.5 degree of cable tray 3 layer with the same distance and gap • HOW TO

Make a 90 Gusset Bend in Cable Tray with Two Pieces

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

How to make a 90 electrical cable tray bend to measurement with a gusset of your choice. Great if you are new or just

How to Bend FLEXTRAY Wire Basket Cable Tray

The tray can be cut and bent, allowing cable runs to be adjusted on the jobsite. The market-preferred "T" weld safety

How to construct a flat 90° bend for Cable Trays

The first step is to mark out the tray (A). Construction of a flat 90° bend (A) The amount of tray lip to be removed is

HOW TO FABRICATE (INSIDE ELBOW)AND (OUTSIDE ELBOW)

How to bend 22.5 degree of cable tray 3 layer with the same distance and gap • HOW TO

Make a 90 Gusset Bend in Cable Tray with Two Pieces

How to make a 90 electrical cable tray bend to measurement with a gusset of your

How to Bend FLEXTRAY Wire Basket Cable Tray

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

How to construct a flat 90° bend for Cable Trays

The first step is to mark out the tray (A). Construction of a flat 90° bend (A) The amount of tray lip to be removed is

How to create a set bend in cable tray

261 Share 106K views 12 years ago How to create a set bend in cable tray -

How to Bend Cable Tray Students trading aid on how best to

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

How to Bend Cable Tray

Includes a full demonstration on how bend steel cable tray using a bending machine and

The Practical Skills Series: Cable Tray

Full video content: Introduction, considerations for using tray - 4 mins The Easy Bend - 19

How to fabricate a swept 90 degree bend in cable tray

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

How to fabricate a swept 90 degree bend in cable tray pyrosym 1.37K subscribers 559

cable tray and trunking for electricians (Page 1) / Help Me ! / Math Is ...

the cable tray is 3 metres in length, this doesnt matter but i think the width does. it is 150mm across. i know that for a

90 Degrees Bends in Cable Tray

In this video they are producing 90 degrees bend in steel cable tray. The learners fabricate (make) flat, internal and

Connecting Cable Trays: Your Guide to Secure and Easy Joins

Learn common methods for connecting cable trays safely and efficiently. Our guide covers splice plates, quick

Putting a 90 degree bend into Cable Tray

He is going to show you how to use EzyStrut''s ET/ET3/ET5 Radius plate to create a 90 degree bend in a piece of

Flextray installation guide

90° Horizontal Bends (Short Radius) • Make your own field cut horizontal bends using CLEANSHEARTM to make safe, smooth cuts

How to make a bend on an open cable tray

This video shows you how easy it is to form and bend an open cable tray from SILTEC -

How To Bend Cable Tray

Discover the best techniques and tools to bend cable tray easily and efficiently. Learn step-by-step instructions and

90° Cable Tray Bend Installation Guide | PDF

90° Cable Tray Bend Installation Guide The document provides instructions for the installation of 90° short radius bends for wire

Make a (45-45) 90 Gusset Bend in Electrical Cable Tray In One Piece

The Easy Guide to... How to make a 90 electrical cable tray bend to measurement with a

How to Bend Cable Tray Students trading aid on how best to

Includes a full demonstration on how bend steel cable tray using a bending machine.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Bending Cable Tray

Bending Cable Tray - NO Fancy Tools Required Students trading aid on how best to put

Configuration methods

Bend side wires on both sides of the tray and reassemble using adjustable clamps to attach side rail edge and universal splices to

TIPS HOW TO BEND CABLE TRAY USING X.80 FORMULA ANY SIZES OF CABLE TRAY ...

How to bend 22.5 degree of cable tray 3 layer with the same distance and gap • HOW

How to Create an Internal 90 Bend in Cable Tray | TikTok

Learn the step-by-step process to make an internal 90 bend in cable tray. Ideal for electricians and contractors looking to enhance

HOW TO FABRICATE (INSIDE ELBOW)AND (OUTSIDE ELBOW)

How to bend 22.5 degree of cable tray 3 layer with the same distance and gap • HOW TO

Make a 90 Gusset Bend in Cable Tray with Two Pieces

How to make a 90 electrical cable tray bend to measurement with a gusset of your choice. Great if you are new or just

How to Bend FLEXTRAY Wire Basket Cable Tray

The tray can be cut and bent, allowing cable runs to be adjusted on the jobsite. The market-preferred "T" weld safety

How to construct a flat 90° bend for Cable Trays

The first step is to mark out the tray (A). Construction of a flat 90° bend (A) The amount of tray lip to be removed is

Bending Cable Tray

You can buy a manufactured 90 degree bend or make one on a cable tray bending machine but in this video I show

How to Bend Cable Tray

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

How to Create Bends in Wire Mesh Cable Trays (Step

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Creating bends in wire mesh cable trays is simple, fast, and cost-effective when done correctly. With

Horizontal 90° Cable Tray Bend – Fabrication Method

Horizontal 90° Cable Tray Bend – Fabrication Method #CableTray #90DegreeBend #ElectricalWork

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

Cable Tray Bend and Offset Formulas | PDF | Galvanization | Screw

The document discusses Metstrut cable tray systems, including their configuration, materials, dimensions, and compliance with

Assembly Guide

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

How To Bend Cable Tray

Discover the best techniques and tools to bend cable tray easily and efficiently. Learn step-by-step instructions and

Bending Cable Tray

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

Cable Tray Fitting creation (Elbow Bend)

In the real world, to make a 45 elbow, we need two segments, to make a 90 elbow, we need three segments I''ve also

Bending Cable Tray

You can buy a manufactured 90 degree bend or make one on a cable tray bending machine but in this video I show

How to Bend Cable Tray

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

How to Create Bends in Wire Mesh Cable Trays (Step

Creating bends in wire mesh cable trays is simple, fast, and cost-effective when done correctly. With

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Horizontal 90° Cable Tray Bend – Fabrication Method

Horizontal 90° Cable Tray Bend – Fabrication Method #CableTray #90DegreeBend #ElectricalWork

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

Cable Tray Bend and Offset Formulas | PDF | Galvanization | Screw

The document discusses Metstrut cable tray systems, including their configuration, materials, dimensions, and compliance with

Assembly Guide

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

How To Bend Cable Tray

Discover the best techniques and tools to bend cable tray easily and efficiently. Learn step-by-step instructions and

Bending Cable Tray

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

Cable Tray Fitting creation (Elbow Bend)

In the real world, to make a 45 elbow, we need two segments, to make a 90 elbow, we need three segments I''ve also

Related Video Reference

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

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Contact Us

Continue your research online:

Website: https://alfa-pro.co.za
Technical inquiry: https://alfa-pro.co.za/contact.html

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

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved