

Length of cable tray bends and tees

Article Overview

When calculating cable lengths for bends and tees in a cable tray system, add extra length for each bend, tee, and service loop, typically 2 feet per bend plus 10% slack for the overall run.

General Guidelines for Cable Tray Bends and Tees

- o Bend Allowance: For each 90° bend in a cable tray, it is standard practice to add approximately 2 feet of extra cable length to accommodate the curvature and maintain the minimum bending radius of the cables . For 45° bends, proportionally less length is required.
- o Tees and Crosses: When a cable run splits at a tee or cross, add 1-2 feet of extra cable for each branch to ensure proper routing and slack for terminations .
- o Service Loops: Leave 6-12 inches of service loop at patch panels, equipment racks, or termination points to allow for future retermination or adjustments .
- o Overall Slack: In addition to bend and tee allowances, plan for 10-20% extra cable length over the measured straight-line distance to account for installation tolerances, routing adjustments, and future expansion .

Practical Calculation Example

Suppose you have a 50-foot straight cable tray run with:

- o 2 bends (90° each)
 - o 1 tee
 - o Service loops at both ends
- Step 1: Base length = 50 feet
Step 2: Add bends = 2 bends x 2 feet = 4 feet
Step 3: Add tee allowance = 2 feet
Step 4: Add service loops = 1 foot (0.5 feet each end)
Step 5: Add slack (10%) = 10% of (50 + 4 + 2 + 1) = 5.7 feet
Total cable length required = 50 + 4 + 2 + 1 + 5.7 = 62.7 feet

Additional Considerations

- o Minimum Bending Radius: Always follow the cable manufacturer's recommended minimum bending radius to prevent damage, especially for power and instrumentation cables .
 - o Tray Width and Fill: Ensure the tray is sized correctly to avoid overcrowding, which can affect bend routing and airflow .
 - o Future Expansion: Include spare capacity in bends and tees to accommodate additional cables in the future .
 - o Support Spacing: The distance between tray supports affects cable sag and bend stress; adjust cable length accordingly .
- By following these guidelines, you can accurately calculate the required cable length for bends, tees, and service loops, ensuring safe, compliant, and maintainable cable tray installations.



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The standard NEMA lengths for cable tray are 12, 20, 24 and 30-feet, although some manufacturers like Eaton offer cable tray in

Tee bends, or junctions, facilitate the branching of cables into multiple directions, providing flexibility in

The document describes the various types, components, and specifications of cable tray systems manufactured by SR Electrical Co.

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been

B. Cable tray systems are defined to include, but are not limited to straight sections of [ladder type] [trough type] [solid bottom type]

In practice, cable tray dimensions are a system of interrelated measurements --width, depth, length, and material

Tables list standard sizes and specifications for straight and bent cable trays, including width, height, thickness, materials, and

The standard lengths for cable trays are 10, 12, 20 and 24 feet - up to 40 foot lengths are available (consult B-Line for the availability

As an industry leader in cable tray, Eaton offers one of the widest ranges of cable management solutions available in the market

To order To order a straight section of cable tray, select the appropriate size and material from the charts below and place those

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

The Flextray™ system is a flexible, field-adaptable way to manage cables throughout your project. The tray can be cut and bent to

Eventually it will be necessary to field cut the cable tray because the length of the cable tray required will be less than standard

Cable trays shall be complete with necessary hot dip galvanized sheet steel accessories such as coupler plates,

Eaton's B-Line Business reserves the right to make changes to the specifications, materials, equipment, prices,

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or the availability of

Cable Trays and Accessories are designed to meet most requirements of cable and electrical wire installations and comply to local

Web: <https://www.millstraining.co.za>

