

How long should cable trays be designed with expansion joints



Article Overview

Cable trays should be fitted with expansion joints approximately every 128 feet for steel trays and every 65 feet for aluminum trays under a 100°F temperature differential.

Recommended Spacing

The spacing of expansion joints in cable trays depends primarily on the material of the tray and the expected temperature variation. According to NEMA Standards Publication VE 1, for a 100°F temperature differential (typical winter-to-summer range):

- Steel cable trays: expansion joints every 128 feet
 - Aluminum cable trays: expansion joints every 65 feet
- These distances ensure that thermal expansion and contraction do not cause bending, distortion, or damage to the tray or its supports.

Installation Considerations

- Support placement: Supports should be located within 2 feet of each side of the expansion joint splice plate. The tray should not be clamped too tightly to allow free movement .
- Anchoring: The tray should be anchored at the support closest to the midpoint between expansion joints, with expansion guides at other supports to allow sliding...

Article Content

May 28, 2026

Best Practice Guide to Cable Ladder and Cable Tray Systems

These guidelines will be particularly useful for the design, specification, procurement, installation and maintenance of these systems.

Dec 01, 2025

Cable Tray Thermal Expansion Guidelines | PDF

Thermal expansion and contraction of cable trays must be accounted for through the use of expansion joints. Proper installation of

Jun 24, 2026

Cable Tray Installation Guidelines for Engineers

Cable trays shall be fastened to the support system using guides that allow for longitudinal movement. Expansion connectors shall

Jan 20, 2026

Managing Thermal Expansion and Contraction in Cable Tray Systems

Learn how to manage thermal expansion and contraction in cable tray systems with expert tips on expansion joints,

Mar 22, 2026

Cable Tray Installation and Cable Handling Method Statement

Expansion connectors must be provided at building expansion joints and in long runs of outdoor trays at intervals of 30 m (100 ft) or

Feb 13, 2026

Fiberglass Cable Tray Thermal Expansion Data

Technical data on fiberglass cable tray thermal expansion, contraction, installation, and gap settings. Includes tables and diagrams.

May 13, 2026

CTI-S65001_A01

Thermal Expansion and Contraction of Cable Tray All materials expand and contract due to temperature changes. It is important that

Jul 28, 2025

Cable tray expansion joint setting method

When crossing building expansion joints and settlement joints, the expansion joints should be set within 500mm on

Apr 07, 2026

Cable Tray Installation and Cable Handling Method Statement

Cable trays should be fastened to the support system using guides that allow for longitudinal movement. 5.4.4 Expansion Connectors

Nov 14, 2025

INSTALLATION GUIDE

At the midpoint between two expansion joints the tray should be secured (no longitudinal movement). At all other support locations,

Sep 05, 2025

392.44 Expansion Splice Plates.

2020 Code Language: N 392.44 Expansion Splice Plates. Expansion splice plates for cable trays shall be provided where necessary

May 20, 2026

NEMA Standards Publication VE 2-2006

The cable tray should be anchored at the support nearest to its midpoint between the expansion splice plates and secured by

Nov 09, 2025

Thermal Contraction and Expansion of Cable Tray

VE 1 Table 6-1 shows the allowable lengths of steel and aluminum cable tray between expansion joints for the temperature

Sep 22, 2025

Cable Tray Expansion Joint Installation: Comprehensive Guide

Expansion joints must be installed at regular intervals along the cable tray system, especially in areas where

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Cable Tray Thermal Expansion Guidelines | PDF

NEMA standards provide guidelines for placement of expansion joints based on expected temperature ranges and material type.

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Cable Tray Installation Guidelines and Best Practices: Complete ...

Expansion joints should be installed at calculated intervals depending on temperature variation and tray material.

Jun 09, 2026

Cable tray (expansion joints) | Information by Electrical Professionals ...

NEMA has a free PDF installation guide that gives you the information needed to calculate how many expansion joints

Mar 17, 2026

Cable Tray Thermal Expansion Guidelines

2) Factors like material, temperature range, and installation temperature determine the required gap size and spacing of expansion

May 10, 2026

Cable tray (expansion joints) | Information by Electrical Professionals ...

Is there anywhere else in the NEC book that says cable tray has to have an expansion splice plate every so many

Aug 07, 2025

Cable tray manual

Where cable tray wiring systems with current carrying conductors are installed in a dust environment, ladder type cable trays should

Jun 16, 2026

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

SOLID-BOTTOM CABLE TRAY Providing additional cable protection, solid-bottom cable tray is sometimes preferred to support and

Oct 06, 2025

Thermal Contraction and Expansion of Cable Tray

There are expansion joint splice plates and bonding jumpers available from cable tray manufacturers. A cable tray support should be

Sep 14, 2025

Design Consideration we follow | powersolution.

Where earth continuity is an important consideration in a cable tray or ladder system, bonding jumper leads should be used. Cable

Oct 26, 2025

B-Line series Cable Tray Design Considerations

Is your cable tray system optimized for safety, dependability, space and cost savings? Cable tray (or cable ladder) systems are a

Apr 29, 2026

Expansion Splice Plates. Legrand Cable Tray

Supports should be located within 600 mm (2 ft) of each side of the expansion splice plates. Expansion splice joints should be

Jan 17, 2026

What is Expansion Joint Cable Tray Installation

Learn the essentials of expansion joint cable tray installation and how they ensure safe and durable cable tray

May 08, 2026

Thermal Expansion and Contraction of Cable Tray

A cable tray system may be affected by thermal expansion and contraction, which must be taken into account during installation. To

Contact Us

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