

# Cable tray assembly expansion



## Article Overview

Cable tray systems must incorporate expansion joints, guides, and proper anchoring to accommodate thermal expansion and contraction, preventing deformation or damage.

### Understanding Thermal Expansion in Cable Trays

All cable tray materials, including steel, aluminum, and fiberglass, expand and contract with temperature changes. If not properly accounted for, this movement can cause trays to bend, tear from supports, or elongate bolt holes at splice plates. The degree of expansion depends on the material and the temperature differential at the installation site. For example, a 100-foot aluminum tray can expand approximately 2 inches with a 100°F temperature change.

### Expansion Joints and Splice Plates

Expansion joints are installed in cable tray runs to allow longitudinal movement. The number and spacing of expansion joints depend on the length of the tray run, material type, and temperature differential. According to NEMA VE-2 standards, maximum spacing for a 70°C differential is approximately 102 feet for steel, 52 feet for aluminum, and 133 feet for fiberglass. Expansion splice plates are used at these joints, and the gap between plates must be set during installation to accommodate expected thermal movement.

### Anchoring and Expansion Guides...

## Article Content

Mar 21, 2026

### Fiberglass Cable Tray Thermal Expansion Data

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

Dec 07, 2025

### Microsoft Word

For a 100° F differential (winter to summer), a steel cable tray will require an expansion joint every 128 feet and an aluminum cable

Apr 22, 2026

### Full cable tray systems specification document

1.04 SUBMITTALS A. Submittal Drawings: Submit drawings of cable tray and accessories including clamps, brackets, hanger rods,

May 24, 2026

### Cable Tray and Reels | Wire and Cable Management

Fast installation with dependable support. Everything you need to build a cable management system, including Cablofil wire mesh

Dec 12, 2025

### Thermal Contraction and Expansion of Cable Tray

Bridges and some other structures have expansion joints. Installing expansion joints in the cable tray runs only at the structure

Aug 30, 2025

### 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

Jan 12, 2026

### Cable tray manual

INTRODUCTION The B-Line series Cable Tray Manual was produced by our technical staff. We recognize the need for a complete

Jun 21, 2026

## CABLE TRAY INSTITUTE

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

Jul 30, 2025

### Cable Tray Expansion Joint Installation: Comprehensive Guide

Discover best practices for cable tray expansion joint installation to accommodate thermal changes, ensuring

Jan 18, 2026

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

Sep 18, 2025

### Thermal Contraction and Expansion of Cable Tray

The cable tray needs to be anchored at the support closest to the midpoint between the expansion joints with hold down clamps and

Mar 20, 2026

## GUIDE CABLE TRAYS TECHNICAL

For consistency with the corrosion resistance of accessories and cable trays, and minimise corrosion breaking lines due to the

Apr 15, 2026

### B-Line series Cable Tray Design Considerations

Cable tray must be capable of supporting not just the weight of the cable, but also the weight of any equipment or materials attached

Apr 20, 2026

### The impact of cable tray thermal expansion and contraction

All materials expand and contract due to temperature changes, including cable tray systems. Understanding where

Sep 20, 2025

### Electrical cable Tray Installation Details with Support Systems

Comprehensive technical drawing illustrating various cable tray installation details for electrical systems. The document includes

May 31, 2026

## Cable Trays

Cable trays are systems that distribute bundles of insulated electrical cables from power supplies to electrical equipment, consisting

Jan 26, 2026

## Cable tray manual

These documents: ANSI/NEMA VE-1, Metal Cable Tray Systems; NEMA VE-2, Cable Tray Installation Guidelines; and NEMA FG-1,

Apr 15, 2026

## Best Practice Guide to Cable Ladder and Cable Tray Systems

This guide covers cable ladder systems, cable tray systems, channel support systems and associated supports intended for the

Aug 22, 2025

## Cable Tray Ladder Trunking Wire Basket Installation Guidelines

What Are Cable Trays? An assembly of units/sections with associated fittings that form a rigid structural system to securely fasten or

May 28, 2026

## Expansion Splice Kit

Cablofil's Wiremesh Cable Tray concept is based on performance, safety, and economy. These three qualities make

Mar 03, 2026

## Cable Tray SHIB NAL

Cable trays are not raceways, but they are treated as a structural component of a facility's electrical system. Cable trays are a part of

Feb 26, 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,

Jan 09, 2026

## Microsoft Word

CTI TECHNICAL BULLETIN Number 2: A publication of the Cable Tray Institute Thermal Contraction and Expansion of Cable Tray

## Contact Us

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