

Expansion Joint for Cable Trays in Factory Buildings



Article Overview

Cable tray expansion joints are essential to accommodate thermal expansion and contraction, prevent structural stress, and ensure long-term system reliability.

Purpose of Expansion Joints

Cable trays in factory buildings are subject to thermal expansion and contraction due to temperature fluctuations. Without proper expansion joints, trays can bend, tear from supports, or cause bolt elongation, leading to misalignment or system failure . Expansion joints absorb these movements, maintaining the integrity of both the tray and the cables.

Material Considerations

- Aluminum trays expand and contract more than steel, requiring more frequent expansion joints. Aluminum is lightweight and corrosion-resistant but highly sensitive to temperature changes .
- Steel trays are heavier and more stable, requiring fewer joints but stronger supports .
- Fiberglass trays have different thermal properties and may allow longer spacing between joints .

Placement and Spacing...

Article Content

Jul 26, 2025

CTI-S65001_A01

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

May 16, 2026

INSTALLATION GUIDE

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

Oct 26, 2025

Thermal Contraction and Expansion of Cable Tray

It is important that cable tray installations incorporate features which provide adequate compensation for their thermal

Jan 30, 2026

US8534613B2

An expansion joint is disclosed for a cable tray apparatus for a people mover system. An expansion joint is inserted or positioned

Oct 02, 2025

Cable Tray Expansion Joint Installation: Comprehensive Guide

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

Nov 01, 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

Aug 30, 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

Sep 27, 2025

Cable Tray Spacing Standards for Installation and Safety

Why is considering future expansion and maintenance important for cable tray spacing?

Aug 12, 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

Apr 27, 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

Apr 13, 2026

Guide to cable support systems

A cable support system consists of cable support lengths and system components, such as cable support fittings, support elements,

May 14, 2026

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

Feb 12, 2026

Cable Tray Thermal Expansion Guidelines | PDF

1) Cable trays need expansion joints to allow for thermal contraction and expansion due to temperature changes. The NEC requires

May 02, 2026

Thermal Contraction and Expansion of Cable Tray

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

Oct 29, 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

Jul 14, 2026

B-Line series Cable Tray Design Considerations

Available in 3, 4, and 6-inch widths with ventilated or solid bottoms, channel cable tray is ideal for smaller instrumentation cables and

Feb 13, 2026

Cable Tray Thermal Expansion Guides | TechLine Mfg

Our thermal expansion guides are recommended to provide longitudinal movement from a fixed point. Two guides should be used

Feb 03, 2026

Cable Tray Ladder Trunking Wire Basket Installation Guidelines

Make expansion connections wherever cable tray and trunking are crossing building expansion joints. Cable trays are to be made

May 18, 2026

Managing Thermal Expansion and Contraction in Cable

Learn how to manage thermal expansion and contraction in cable tray systems with expert

Mar 07, 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

Jan 19, 2026

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

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

May 09, 2026

Expansion joint

The CEI EN 61537 standard states that the maximum acceptable longitudinal inflexion is 1/100 of the distance between supports, and

Feb 27, 2026

Design Consideration we follow | powersolution.

The cable ladders & trays should be anchored at the support nearest to its midpoint between the expansion splice plates and

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.chromadecksigns-eastrand.co.za>

Email: sales@chromadecksigns-eastrand.co.za

Phone: +32 2 318 5792

Address: Avenue Louise 500, 1050 Brussels, Belgium

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