

Should cable trays be fitted with expansion joints



Article Overview

Cable trays are not always equipped with expansion joints; they are installed only where necessary to accommodate thermal expansion and contraction.

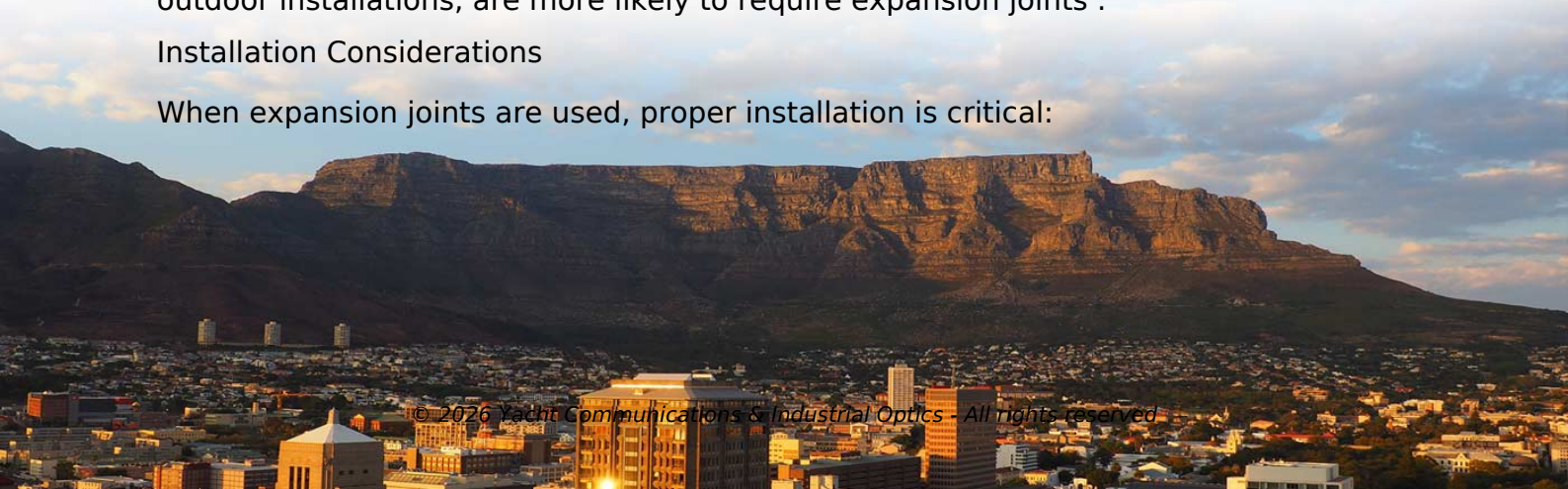
When Expansion Joints Are Required

Expansion joints in cable trays are used to absorb thermal expansion and contraction caused by temperature fluctuations, preventing deformation, misalignment, or damage to the tray and cables. According to the National Electrical Code (NEC) Section 300-7(b), raceways, including cable trays, must have expansion joints where necessary, but there is no requirement to install them in every tray run. The need depends on factors such as:

- Material of the tray: Aluminum expands nearly twice as much as steel for the same temperature change.
- Length of the tray run: Longer runs are more susceptible to thermal movement. NEMA VE-1 and VE-2 standards provide tables for maximum lengths between expansion joints based on material and temperature differential.
- Environmental conditions: Areas with large temperature swings, such as rooftops or outdoor installations, are more likely to require expansion joints.

Installation Considerations

When expansion joints are used, proper installation is critical:



Article Content

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The choice of method should be discussed with a local inspector. The best decision may be to extend only the cables, creating a

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

INSTALLATION GUIDE

All tray items whether stored outside or indoors, should be placed on sufficient dunnage to enable future mechanical lifting. Trays

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

RECOMMENDED SPECIFICATIONS OF JUNCTION BOX AND CABLE TRAY

Based on current industry practice, the straight type cable trays are more commonly used in offshore structures and units, so this

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

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

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

B-Line series Cable Tray Design Considerations

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

INSTALLATION GUIDE

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

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

Thermal Contraction and Expansion of Cable Tray

A cable tray support should be located within 2 feet of each side of the expansion joint splice plates position. The cable trays must

Cable Tray Thermal Expansion Guidelines

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

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

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

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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

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

Contact Us

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