

Cable tray splicing trench

Article Overview

Cable tray splicing in trenches involves securely joining tray sections using splice plates, proper supports, and grounding to ensure mechanical stability and electrical safety.

Splice Plate and Connection

When installing cable trays in a trench, splice plates are used to connect two sections of tray. These plates are typically bolted across the flanges of adjacent tray sections to maintain alignment and structural integrity. The spacing of supports should follow manufacturer recommendations, often every 1.5 to 3 meters depending on tray type and load, to prevent sagging or deformation under cable weight . Proper alignment ensures smooth cable pulling and reduces stress on the cables.

Material and Environmental Considerations

Cable trays can be made of steel, aluminum, or stainless steel, with finishes selected based on environmental conditions such as moisture, chemical exposure, or corrosive soils . For underground or trench installations, corrosion-resistant materials or coatings are recommended. Aluminum trays should avoid bare copper grounding conductors to prevent electrolytic corrosion; insulated conductors with tin or zinc-plated connectors are preferred .

Grounding and Bonding

All metallic cable trays must be grounded according to electrical codes, even if the tray itself is used as the equipment grounding conductor (EGC), . Grounding clamps can bond the EGC to each tray section, providing both electrical continuity and mechanical anchoring to withstand fault currents. This is particularly important in trench installations where vibration or soil movement could stress connections.

Installation Best Practices

- o Ensure continuous support along the trench to prevent tray deflection.
- o Maintain proper separation of power, control, and data cables to reduce electromagnetic interference (EMC) issues .
- o Use ventilated or solid-bottom trays depending on cable type and environmental exposure .
- o Allow for thermal expansion and contraction by leaving small gaps or using expansion joints in long runs .
- o Verify that all splice bolts are tightened and corrosion-protected to maintain long-term reliability.

EMC and Safety Considerations

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In trench installations, cable trays should be solidly bonded to reduce electromagnetic perturbations and ensure safe operation of sensitive equipment . Proper segregation of cable types and adherence to EMC guidelines helps prevent interference and maintains system reliability. By following these practices, cable tray splicing in trenches can achieve mechanical stability, electrical safety, and long-term reliability for industrial and commercial installations .

Cable Tray Systems Guide HUBBELL Hubbell Wiring Device-Kellems and Hubbell Premise Wiring are divisions of Hubbell

This technical article discusses twelve different methods for laying high voltage cables. Out of

Core rules for selecting, installing, grounding, and filling cable trays--clearances, materials,

A cable tray system is used to support insulated electrical cables used for power distribution, control, and communication. Cable

Metallic cable trays shall be permitted to be used as equipment grounding conductors where continuous maintenance and

The Super-Duty Splice Plate comes complete with all hardware required, for either expansion or mid-span splicing. Kit includes: o 2

Cable Tray, trunking and ladder will be properly supported and stacked in a flat surface. Tray, trunking and ladder will

Eaton's submittal builder tool for B-Line series cable ladder and tray allows you to easily filter, select and download straight section,

Cables are typically arranged in a trefoil pattern. Every meter, a suitable non-corrodable clad

Using cable trays as walkways can cause personal injury and also damage cable tray and installed cables. Performances of cable

Series 2~5 Aluminum Cable Tray The flexible horizontal adjustable splice plates are designed to allow for horizontal direction

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Welcome to our step-by-step guide on installing cable trays! In this video, we'll explore the

Read about the differences between cable trays and cable trenches, their applications, benefits, and how Hutaib

MP Husky's Mid-Span Splice option provides the ability to place a splice at any point within the support span without diminishing the

Trench length should be limited to 20 feet (inside dimension), with the service cable length limited to less than 50" from transformer to

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