

Article Overview

Large-span cable trays require careful planning of support spacing, load capacity, cable bending radii, and material selection to ensure safe and efficient installation.

Key Considerations for Large-Span Cable Trays

1. **Tray Type and Material** Ladder cable trays are preferred for large-span installations because they provide maximum airflow, reduce heat buildup, and minimize dust accumulation, which is critical for power cables and instrumentation systems . Materials typically include steel, stainless steel, or aluminum, with galvanization or protective coatings to resist corrosion in industrial environments . Solid-bottom trays may be used for EMI/RFI shielding but require drainage provisions to prevent moisture accumulation .

2. **Load Capacity and Support Spacing** The wider the tray and the heavier the cables, the more critical it is to consider load reduction. For large-span trays, rung spacing of 9 to 18 inches is recommended to support heavy power cables while maintaining proper bending radii . Support elements such as wall brackets, suspended supports, or center suspensions should be installed according to the tray manufacturer's specifications to prevent sagging or structural failure .

3. **Cable Management and Bending Radius** Cables must be laid without violating the manufacturer's minimum bending radius. For large-diameter power cables, wider rung spacing or field modifications (removing or repositioning rungs) may be necessary to maintain proper curvature . Bundling and balancing cables at the center of the tray helps distribute weight evenly and reduces stress on the tray structure .

4. **Accessories and Safety** Use pre-punched holes and compatible accessories for attaching junction boxes, covers, or cable protection rings without drilling, which maintains structural integrity . Cable trays are designed to support cables, not personnel, so avoid using them as walkways. Ensure compliance with standards such as BS EN 61537 for cable trays and BS 6946 for channel support systems .

5. **Environmental and Mechanical Considerations** Large-span trays must withstand environmental factors such as wind, snow, vibration, and temperature variations. Proper galvanization or coating protects against corrosion, and solid covers or ventilated trays can be selected based on heat dissipation and dust accumulation requirements . Outdoor or humid installations may require weep holes in solid-bottom trays to prevent water retention .

6. **Installation Best Practices**

- o Plan the tray route to minimize sharp bends and vertical transitions.
- o Use horizontal and vertical bends, T-pieces, and crossovers to maintain cable organization .
- o Ensure all supports are level and aligned to prevent uneven loading.
- o Verify that the tray system is compatible with the cable types and quantities being installed . By following these guidelines, large-span cable trays can be installed safely, maintain cable integrity, and provide long-term reliability in industrial and commercial electrical systems.



Laying of large-span cable trays

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

However, in the context of a complete cable ladder or cable tray system the main importance of the fixed beam configuration is that

Cable ladder and cable tray systems The following recommendations are intended to be a practical guide to ensure

A professional guide to installing electrical cable tray systems per NEC Article 392. Covers support,

3. Cable Tray Support Locations Cable tray supports should be strategically positioned so that connectors between horizontal

Long-Span Cable Tray | Heavy Load Cable Support for Large Distances Long-span cable trays have a

9.3 Tray Rigidity: For pipe racks, building steel, or tee-structure mountings for which support spacing is determined by others, tray

2. Purpose This method statement for the Installation of Cable Tray, Trunking, and Accessories shows and explains

Fabricated in numerous styles (wiremesh, ladder, ventilated trough, channel, and solid-bottom) and sizes, cable tray provides the

Cablofil wire mesh tray and sup-ports are designed to support any cable load allowed by the NEC when supports are spaced on 8"

Cable Installation: Lay the cables on the tray, distributing weight evenly. Cable Management: Use straps to secure

In accordance with its continuous impro-vement policy, Legrand reserves the right to change the specifications and illus-trations

Learn how to install cable trays for large-scale projects with our professional, step-by-step guide covering industry

This publication is intended as a practical guide for the proper and safe* installation of cable ladder systems, cable tray systems,

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

Laying of large-span cable trays

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

Web: <https://kremgroup.co.za>

