

Customization of long-span cable trays is supported



Overview

Supporting Heavy Power Cables in Long-Span Installations Learn how to effectively support heavy power cables in long-span installations. Discover load distr.

Key Takeaways

Long-span cable trays require careful customization of support spacing, tray strength, splice plate placement, and material selection to ensure structural integrity and reliable cable management. Support Span and Tray Strength Long-span cable trays are typically supported at intervals of 14 to 20 feet, with 20 feet being the most common, while extra-long spans exceed 20 feet and can reach 20 to 40 feet for outdoor installations such as road crossings. The distance between supports directly affects tray strength, so the tray must be selected and designed to handle the specific span and expected load.

Matching tray length to support span helps control splice locations and maintain structural integrity.

Splice Plate Placement

Splice plates connect two tray sections and are critical in long-span installations. Only one splice plate should be placed between support spans to maintain strength and electrical grounding. Innovative designs, such as Eaton's KwikRail system, feature splice-retention grooves that simplify installation and secure the splice with minimal hardware.



Material and Environmental Considerations

Material selection depends on the installation environment. Common materials include steel, stainless steel, and aluminum, with various finishes to resist corrosion, extreme temperatures, and outdoor exposure. Aluminum is particularly valued for its corrosion resistance in atmospheric conditions, while steel may require galvanization or protective coatings.

For outdoor or harsh environments, extra-long spans reduce the number of expensive supports while maintaining durability.

Load Capacity and Cable Type

The load class of the tray defines its ability to support cables over a given span. Long-span trays must be rated for the expected weight of power, instrumentation, and data cables. Rung spacing, typically 6 to 9 inches, ensures proper support for small instrumentation and control cables.

Ventilated or solid-bottom trays may be selected based on heat dissipation and electromagnetic interference considerations.

Installation Best Practices

Align tray length with support span to minimize splice plates. Ensure proper grounding and bonding at splice locations. Use modular systems for flexibility in routing and future expansion.

Consider thermal expansion and contraction in outdoor or temperature-variable environments. Verify compliance with relevant standards such as NEC, IEC, or DIN EN 61537 depending on location.

Summary

Customization of long-span cable trays involves careful planning of support intervals, tray strength, splice placement, material selection, and load capacity. Proper design ensures safety, reliability, and cost efficiency, particularly in industrial, commercial, and outdoor applications where spans are extended and environmental conditions are challenging.

Article Content

Supporting Heavy Power Cables in Long-Span Installations

Learn how to effectively support heavy power cables in long-span installations. Discover load distribution strategies, ladder cable trays, and structural solutions from Hutaib Electricals.

B-Line series Cable Tray Design Considerations

Our wind certification report provides you with list of acceptable B-Line series cable tray supports, fittings and covers based off of the environmental conditions, cable loading, and type of cable tray in your

Guide to cable support systems

The load capacity of the cable trays according to the support width can be read off in the diagram using load curves – here, shown as an example for a cable tray with the tray widths 100 to 600 mm.

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

Cable tray length is selected based on the load to be supported, the distance between the supports (also referred to as the span), and handling and installation constraints.

Long-Span Cable Tray | Heavy-Duty Support for Large Industrial

Long-span cable trays have a larger support span than ordinary cable trays, with a more sophisticated structural design and greater load-bearing capacity.

Long Span Cable Tray

Long Span Cable Tray The long span cable tray is suitable for long support spans and high cable load capacity, and conforms to the load/span design specified in IEC 61537. The long

CABLE TRAY SYSTEMS GUIDE

Commonly called the Load Class, this defines the load-carrying capability of the tray for a specific support span distance. The design and cost of the cable tray is greatly affected by this designation.

GUIDE CABLE TRAYS TECHNICAL

NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian Electrical Code, Part I and the National Electrical Code®

construction long span cable tray: Durable & Customizable

Looking for construction long span cable tray with heavy load capacity? Explore customizable, corrosion-resistant options from verified suppliers. Click to find the best industrial

PRODUCT BROCHURE T&B® Cable Tray Specialty aluminum solutions

Technical specifications Load ratings: 1.5 safety factor. All tray sections will support an additional 200 lb concentrated load on any portion of tray (side rail, rung, etc.) above and beyond published load class.

An In-depth Analysis for Optimal Cable Tray Support Span

The constructability for the longer span obtained from finite element analysis has been validated in view of manual handling of the cable tray.

PRODUCT BROCHURE T&B® Cable Tray Specialty aluminum solutions

40-foot spans reduce support requirements For cable tray applications lacking sufficient space for the number of supports required for standard-length sections, choose T&B Cable Tray long-span AH1-8

Resources for Cable tray and ladder systems

Featured resources Cable tray design considerations guide Our cable tray design considerations guide details key factors to consider when designing cable tray systems for industrial and commercial

What Are Long Span Cable Trays

What are long span cable trays? Learn how they reduce support points, save costs & suit stadiums, factories. UK expert guide with FAQs.

Long-Span Channel Cable Tray System

The long-span cable tray adopts the structure of a strengthened side plate, which greatly increases the load capacity of the bridge. The product is suitable for the installation of long-span lines.

26 05 36 Cable Trays for Electrical Systems

In addition to the uniformly distributed load the cable tray shall support 200 lbs. concentrated load at mid-point of span. Load and safety factors specified are applicable to both the side rails and rung

Cable Tray Installation Guidelines for Engineers

Cable tray installations shall be installed so connectors are not located in center points of span between supports or directly on supports. Cable trays shall be fastened to the support system using guides

Guide to cable support systems

I support systems for cable support structures are used to bridge large loads and support spacings and to cre-ate complex section routes. The systems allow large support spacings of wide span systems

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