

Long-span cable trays and trough-type cable trays

Article Overview

Trough-type long-span cable trays are robust, open-bottom or V-shaped steel systems designed to support and protect cables over extended distances with minimal intermediate supports.

Overview

Trough-type cable trays, also known as V-trough or solid-bottom trays, are engineered to provide strength, durability, and cable protection in industrial, commercial, and data center environments . They are particularly suitable for long-span installations, where support intervals can range from 14 to 40 feet, depending on load and environmental conditions . These trays are ideal for managing power, control, instrumentation, and fiber optic cabling while maintaining accessibility and safety.

Design and Construction

- o Material: Typically constructed from high-strength steel, sometimes with coatings like galvanized or PVC for corrosion resistance .
- o Shape: V-trough or U-trough designs provide structural rigidity and help maintain cable alignment. Rolled top edges enhance strength and safety by eliminating sharp edges .
- o Ventilation: Many trough trays feature ventilated designs to reduce heat buildup in cable bundles and prevent moisture accumulation .
- o Covers: Optional covers can be added for complete cable protection and security, especially in sensitive or high-traffic areas .

Long-Span Considerations

- o Support Spacing: Long-span trough trays are supported at intervals of 14 to 20 feet, with extra-long spans exceeding 20 feet for outdoor or road-crossing applications . Proper support placement is critical to maintain tray strength and prevent sagging.
- o Load Capacity: The tray must be selected based on cable weight, environmental loads (wind, snow, ice), and the chosen support span . Corrugated or reinforced bottoms increase stiffness and load-bearing capacity .
- o Splice Plates: For long spans, splice plates connect tray sections and ensure structural continuity. Their placement is crucial to maintain strength over extended runs .

Advantages

- o Durability: Steel construction provides long-term reliability and resistance to mechanical damage .
- o Accessibility: Open or ventilated designs allow easy cable installation, inspection, and future expansion .

Long-span cable trays and trough-type cable trays

- o Safety: Rounded edges and optional covers protect both cables and installers .
- o Flexibility: Available in various widths, depths, and finishes to suit different cable types and installation environments .

Applications

Trough-type long-span cable trays are commonly used in:

- o Data centers for fiber optic and copper cabling .
 - o Industrial plants for power and control cables .
 - o Commercial buildings where long, uninterrupted cable runs are required .
 - o Outdoor installations crossing roads or open areas, reducing the need for multiple supports .
- In summary, trough-type long-span cable trays combine strength, accessibility, and safety, making them ideal for extended cable runs in demanding environments. Proper selection of material, support spacing, and load capacity ensures reliable performance and long-term protection of critical cabling systems .

Some applications may require the cable tray to support the weight of a single, dead object in addition to the cable loads.

Explore various cable tray types and sizes for electrical installations. Learn about ladder, perforated, solid-bottom, wire mesh, and

Selecting the correct cable tray type is not arbitrary--it depends on a combination of cable characteristics,

Cablofil steel trough trays provide the strength and security required when the need to limit cable access is of primary importance.

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

One industry standard that is strongly recommended is that only one cable tray splice be placed between support spans and, for long

NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules

Conclusion Understanding the different types of cable trays and their applications is crucial

Long-span cable trays and trough-type cable trays

Cable trays for industrial and marine use. Includes distribution trays, cable routes and NATO-type models. Request a quote directly

Delivering engineered solutions in cable management ABB manufacturers a comprehensive range of cable tray systems and

Explore the essential cable tray support spacing requirements for safe and efficient

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

We offer a wide range of cable tray systems to support tubing, electrical cables and instrumentation. Our

Trough cable tray: Moderately ventilated trays with cable support, available metallic and non

The Cable Tray Institute (CTI) was founded in 1991 to support the cable tray industry by engaging in research, development,

If cable trays are being installed where working space is a problem, hand access through the cable tray bottom may help to facilitate

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

