

Suitable weight for trough-type cable trays

Article Overview

The weight of trough-type cable trays varies by material, gauge, width, and ventilation, typically ranging from 5 kg/m to over 25 kg/m for steel models.

Factors Affecting Weight

- o Material: Steel trays are heavier than aluminum or fiberglass trays. Hot-dip galvanized steel adds 0.8-1.5 kg/m² due to coating, increasing total weight by 2-4% . Aluminum trays are lighter but have lower load capacity .
- o Gauge/Thickness: Thicker metal (lower gauge number) increases tray weight and structural strength .
- o Tray Width and Sidewall Height: Wider trays with higher sidewalls contain more metal, increasing weight .
- o Ventilation: Perforated or ventilated bottoms reduce material volume by 15-30%, lowering weight compared to solid-bottom trays .
- o Accessories: Covers, bends, and junctions add additional weight to the system .

Typical Weight Ranges

Material / Type	Width (mm)	Approx. Weight (kg/m)
Steel, solid bottom	1005-7	Steel, solid bottom
Steel, solid bottom	2008-10	Steel, solid bottom
Steel, solid bottom	30012-15	Steel, solid bottom
Steel, ventilated	1004-6	Steel, ventilated
Steel, ventilated	2006-9	Steel, ventilated
Aluminum, ventilated	1003-4	Aluminum, ventilated
Aluminum, ventilated	2004-6	Aluminum, ventilated

These values are indicative; exact weights depend on manufacturer specifications, tray length, and support spacing .

Weight Calculation Method

To calculate the weight of a trough-type cable tray:

- o Determine the cross-sectional metal area (m²) based on tray type and dimensions.
- o Multiply by the tray length to get volume (m³): $\text{Volume} = \text{Area} \times \text{Length}$.
- o Multiply by material density (kg/m³) to obtain weight: $\text{Weight} = \text{Density} \times \text{Volume}$.
- o Apply safety factors (1.5-2x) for dynamic loads, cable weight, and future expansion .

Practical Considerations

- o For heavy cable loads, reduce support spacing to prevent sag and ensure structural integrity .
- o Always consult manufacturer datasheets for precise weight per meter and load capacity.
- o Consider coatings and environmental factors (e.g., corrosion protection) as they slightly increase tray weight . By accounting for these factors, engineers and installers can accurately estimate the total weight of a trough-type cable tray system and design supports accordingly.

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-- One-piece tray Selection guide Ventilated trough o Formed from a pre-punched sheet to produce a one-piece ventilated trough o

MP Husky"s cable tray selector for choosing the correct tray type (ladder, solid bottom, perforated, wire mesh) and size based on

Trough trays - offer continuous support and protection for medium-weight cables. Single-rail trays - space-efficient,

Cable trays are not raceways, but they are treated as a structural component of a facility"s electrical system. Cable trays are a part of

Cable trays are available in different configurations, straight sections are available to route cables in a horizontal or vertical plane.

The only reason to select a ventilated trough cable tray over a ladder type cable tray is aesthetics. No drooping of small cables is

Types of Cable Typically Used in Cable Tray The purpose of a cable tray system is to support, route, and protect cable as part of the

Worried about cable tray capacity? Learn simple cable tray load calculation steps. This guide helps you pick the right

Cable trays feature flexibility unmatched by conduit, as cables are easier to mark, remove and find in cable trays. Cable trays are

Compare cable tray, basket, ladder & trunking systems. Learn the pros, cons, and best uses for each type, with links to our UK

V-Trough cable tray keeps cabling cool, protected and easy to manage. Its high-strength steel construction matches many European

Cable Tray Technical Guide A practical guide to product selection and installation This guide for engineers and installers has been

Considerations: Limited capacity, making them unsuitable for large or heavy cable bundles. Minimal ventilation and protection

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Cable tray systems are defined to include, but are not limited to straight sections of [ladder type] [trough type] [solid bottom type]

The NEC rule requires that the cable cross-sectional areas together may not exceed 50% of the tray area (width x depth = fill).

In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and

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