Weight per meter of tray cable tray

Article Overview

The weight per meter of a tray-type cable tray depends on the material, tray type, and dimensions, typically ranging from 5-25 kg/m for standard steel or aluminum trays.

Factors Affecting Tray Weight
o Material:
o Mild/galvanized steel: ~7850 kg/m3
o Stainless steel (SS304/SS316): ~7930-8000 kg/m3
o Aluminum alloy: ~2700 kg/m3
o FRP (fiber-reinforced plastic): ~1800-2000 kg/m3

o Tray Type:
o Solid-bottom trays: Heavier due to full metal coverage.
o Perforated trays: 15-30% lighter than solid trays because material is removed for ventilation while maintaining structural strength .
o Ladder trays: Weight depends on rung spacing (typically 200-300 mm) and rail dimensions; generally lighter than solid trays but heavier than perforated trays of similar width .

o Dimensions:
o Width and side rail height: Larger trays require more material, increasing weight.
o Sheet thickness: Small increases in thickness (e.g., 1.6 mm to 2.0 mm) can increase weight by ~25% for the same profile .
o Covers and flanges: Adding covers or flanges increases total weight by 1-4% depending on coating and material .

Typical Weight Ranges
Tray TypeMaterialApprox. Weight per MeterLadder trayGalvanized steel7-15 kg/mLadder trayAluminum3-6 kg/mPerforated trayGalvanized steel5-12 kg/mSolid-bottom trayGalvanized steel10-25 kg/mSolid-bottom trayAluminum4-10 kg/mStainless steel traySS3048-20 kg/m
These values are typical manufacturer estimates; actual weight may vary depending on rung spacing, perforation pattern, welding method, and coating .

Calculation Method

The weight per meter can be calculated using: Weight (kg/m) = Material Density x Tray Volume per Meter Where tray volume is determined by the cross-sectional area of the tray (bottom + side rails + rungs) multiplied by 1 meter of length. For perforated trays, reduce the volume by 15-30% to account for openings .

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Practical Considerations

o Always verify with manufacturer datasheets for exact weights.
o Include coating weight (e.g., hot-dip galvanizing adds ~0.8-1.5 kg/m2).
o Consider support spacing and dynamic loads; heavier trays require closer support intervals.
o For planning, separate tray self-weight from cable fill weight to ensure structural safety . By using these guidelines, engineers and installers can accurately estimate the weight per meter for tray-type cable trays and plan supports, brackets, and installation logistics accordingly.

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

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

FDG CABLE TRAY FDG Cable Tray is designed to continuously support cable systems including; Power, Data, and Audio Visual. A

ET CABLE TRAY ET EZYTRAY CABLE TRAY 45 Contact EzyStrut for Load Capability information. Supplied in 3m lengths Pre

Step 1: Define Cable Inventory List cable types, diameters, and weights per metre. Group by power, control, and data.

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

Cable Tray Weight Calculator Estimate cable tray self weight quickly for planning and procurement accurately. Choose materials and

Calculate Size of Cable Tray for Following Cable Schedule. Cable Tray should be perforated and 20% spare Capacity.

I recently came across a situation where there were several large cables (42 500MCM cables) being run in a single

Cable trays and ladders are standardly produced in 3-meter lengths but can also be manufactured in 6

It lists the cable types, sizes, and quantities for each area. It then calculates the total cable outside diameter,

weight per meter, and

Explore standard sizes by tray type, understand width and depth limits, and see how to calculate and choose compliant

The document describes a cable tray system. A cable tray system is an assembly of metallic cable tray sections and accessories that

We calculate cable tray weight using the formula: Volume × Material Density. For accurate results, use our cable tray weight

The document provides pricing information for ladder cable tray and perforated cable tray in Indian rupees per meter for various tray

Proper tray and ladder sizing ensures safe, efficient, and maintainable electrical installations in all engineering applications. IEC

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