Weight of ladder-type cable trays and trough-type cable trays

Article Overview

Ladder-type cable trays typically weigh 10-30 kg/m depending on material and size, while solid-bottom or trough-type trays generally weigh slightly more due to continuous metal surfaces.

Ladder-Type Cable Trays

Ladder trays consist of two side rails connected by cross rungs, usually spaced every 300 mm. The weight per meter depends on:

o Material: Mild steel/galvanized steel (~7850 kg/m3), stainless steel (~8000 kg/m3), aluminum (~2700 kg/m3)
o Tray dimensions: Width, side rail depth, and rung thickness
o Rung spacing: Standard 300 mm spacing reduces material usage compared to solid trays For example, a 6 m run of galvanized steel ladder tray may have a dead weight of ~28 kg, which corresponds to roughly 4.7 kg/m for a small industrial tray, but larger widths and thicker rails can increase this to 10-30 kg/m depending on design and load capacity . Perforated ladder trays are slightly lighter due to material removal, typically reducing weight by 15-20% .

Trough-Type (Solid-Bottom) Cable Trays

Trough or solid-bottom trays have continuous metal surfaces, providing full support for cables. Their weight per meter is generally higher than ladder trays because:

o Continuous metal sheet: No gaps like ladder rungs
o Material thickness: Often 1.6-2.0 mm for steel trays
o Coatings: Hot-dip galvanizing adds ~0.8-1.5 kg/m2 to the base weight Typical weights for steel trough trays range from 15-35 kg/m, depending on width, side height, and material type. Perforated trough trays reduce weight by 15-30% while maintaining structural integrity .

Calculation Method

To calculate the weight per meter:
o Determine the cross-sectional metal area of the tray (side rails, rungs, or solid bottom).
o Multiply by the material density to get weight per meter: Weight (kg/m) = Cross-sectional area (m2) x Material density (kg/m3)
o Adjust for perforations (reduce 15-30%) or coatings (add 0.8-1.5 kg/m2 for HDG steel) as needed .

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Summary

o Ladder trays: 10-30 kg/m (lighter due to rungs and open design)
o Trough/solid-bottom trays: 15-35 kg/m (heavier due to continuous metal)
o Material choice: Aluminum is lighter, steel is heavier but stronger
o Perforations and coatings: Reduce or increase weight respectively These values are typical manufacturer ranges; exact weights vary with tray width, side height, material thickness, rung spacing, and fabrication tolerances .

Husky Ladder Cable Tray Systems: Cable support system constructed from two side rails connected with individual rungs. Husky

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

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

Cable Ladder Trays (Welded & Swaged) Cable Ladder Trays, are designed to meet most requirements of cable and electrical wire

Eaton

Values are applicable to all resin systems, where possible.

Featured resources Cable tray design considerations guide Our cable tray design considerations guide details key factors to consider

Component selection used in the supporting structure is to be based on the allowable load (w) for the ladder tray being used as well

The glass fiber to resin content shall be maintained between 45 to 65 percent by weight in all pultruded components except flat sheet

FRP Cable Trays are non-metallic support systems for routing electrical and data cables in industrial and commercial facilities. Made

Ladder Trays Ladder 3D Drawings Explore our full collection of Metallic Ladder 3D Drawings, including

horizontal fittings, vertical

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

Cable tray is alternatives to wire ways and electrical conduits, which completely enclose cables. Study types of cable

Cable ladder systems and cable tray systems are designed for use as supports for cables and not as enclosures giving full

Cable Ladder Specifications: A. CABLE TRAY DESIGN Cable Tray shall be made of straight sections, fittings and accessories as

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

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