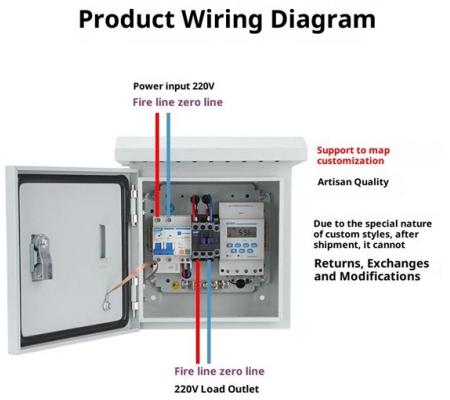
Standard cable tray load



Overview

When selecting cable trays, enterprises often prioritize performance metrics, particularly safe working load.

Key Takeaways

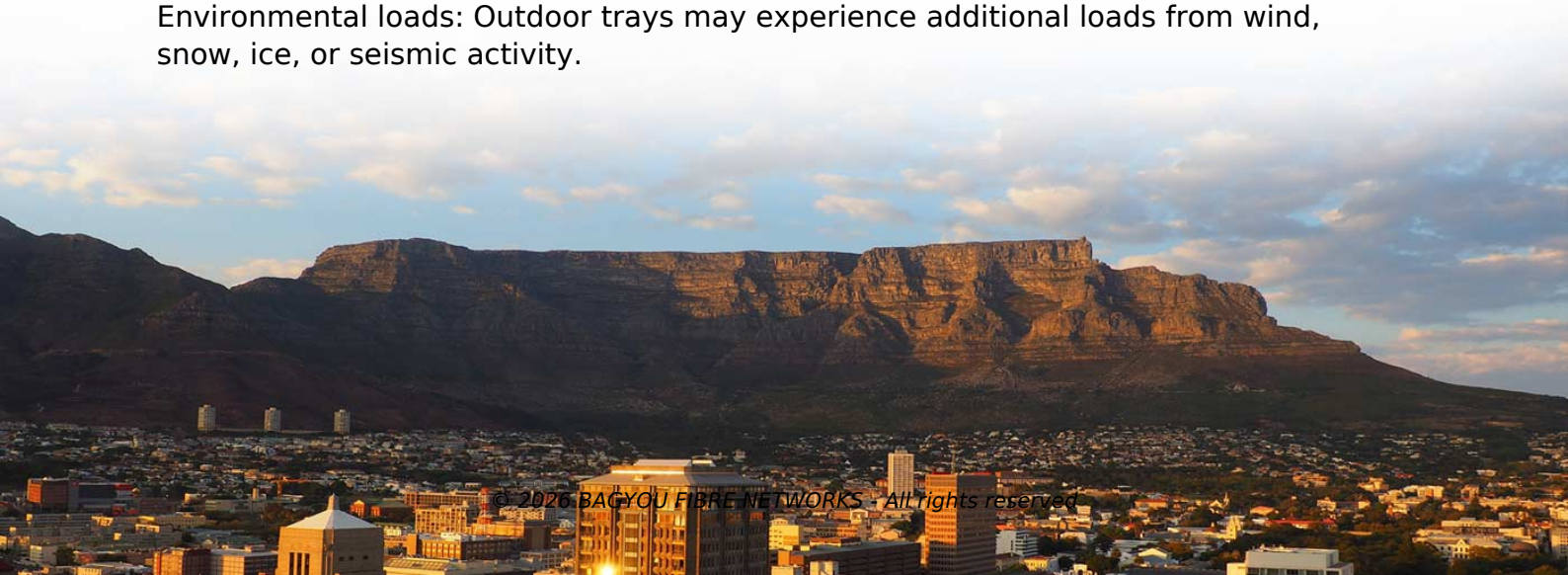
The standard load of a cable tray depends on its type, material, span, and installation environment, typically ranging from 20 to 100 kg/m for common indoor trays, with higher capacities for industrial or outdoor applications.

Factors Affecting Cable Tray Load

Cable tray load is determined by several factors: Cable weight: The primary load comes from the cables themselves. Copper power cables are heavier than aluminum or data cables, and armored cables add extra weight. Tray type and material: Ladder, perforated, or solid-bottom trays have different load capacities.

Steel trays generally support more weight than aluminum or fiberglass. Span length: The distance between supports significantly affects load capacity. Short spans (6–8 ft) can carry more weight than long spans (14–20 ft or more), as tray strength decreases with longer unsupported lengths.

Environmental loads: Outdoor trays may experience additional loads from wind, snow, ice, or seismic activity.



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Typical Load Ranges

Indoor commercial trays: Usually designed for 20–50 kg/m, suitable for data, control, and light power cables. Industrial trays: Can support 50–100 kg/m or more, depending on steel thickness, rung spacing, and support intervals. Special applications: Outdoor or extra-long span trays may require custom engineering to handle combined cable and environmental loads.

Standards and GuidelinesIEC 61537: Provides international guidelines for mechanical strength, load testing, and performance of metallic cable trays.

NE

C (National Electrical Code): Offers load and installation requirements for cable trays in the U. S., including support spacing and fill ratios. Manufacturer specifications: Always consult the tray manufacturer's technical guide, as load ratings vary by material, design, and finish.

Practical Considerations

Ensure tray length ≥ support span to prevent sagging. Consider dynamic loads from maintenance personnel or tools. Use splice plates and proper support spacing to maintain structural integrity.

Avoid overfilling trays; maintain recommended fill ratios for ventilation and heat dissipation. By accounting for these factors, engineers can select a cable tray system that safely supports the intended load while complying with relevant standards and ensuring long-term reliability.

Article Content

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GUIDE CABLE TRAYS TECHNICAL

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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®

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