ZITHA TECH SPECIALTY CABLES (Pty) Ltd

How to install and fix a trapezoidal cable tray



Overview

Here is a step-by-step guide on how to install a standard metal cable tray system (e.g., ladder or perforated type).

Key Takeaways

Installing and fixing a trapezoidal cable tray requires careful planning, proper support, precise alignment, and adherence to load and safety standards.Planning and Preparation

Before installation, plan the tray route based on your site layout, cable types, and future expansion needs. Mark the path using a chalk line or laser level, and identify locations for bends, tees, or risers. Ensure the area is clear of obstructions such as pipes, HVAC ducts, or other equipment .

Tools and Materials

Essential tools include a power drill, wrench set, measuring tape, level, hacksaw or angle grinder, and a file for deburring. Materials include trapezoidal cable trays, couplers (splice plates), mounting brackets, threaded rods, anchor bolts, and grounding straps . Personal protective equipment (PPE) such as gloves, safety glasses, and a hard hat is mandatory.

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Mounting and Support
• Support spacing: Typically, supports are installed every 1.5 to 3 meters depending on tray load and manufacturer specifications. Center-hung supports allow easier cable installation .

• Load capacity: Ensure the tray does not exceed its maximum load, usually around 318–340 kg per hanger for standard trays .

• Alignment: Align trays straight and level. Use connectors and fittings to join sections securely. Avoid sagging by checking level frequently during installation .
Installation Steps
• Mark support points along the planned route.

• Install brackets or struts on walls, ceilings, or floors.

• Place the trapezoidal trays onto the supports and secure with bolts or clamps.

• Connect tray sections using couplers or splice plates, ensuring a tight fit.

• Install bends, tees, or risers as needed, maintaining proper alignment.

• Ground the tray system according to electrical code requirements.
Fixing and Maintenance
• Sagging trays: Check support spacing and add additional hangers if necessary.

• Loose connections: Tighten bolts and clamps at joints and supports.

• Damaged sections: Replace bent or corroded tray sections; ensure new sections match the existing system.

• Cable management: Reorganize cables to prevent overfilling (max 50% fill ratio recommended) and maintain separation for heat dissipation .

• Regular inspection: Periodically check for corrosion, loose fasteners, and proper grounding to ensure long-term performance . By following these steps, a trapezoidal cable tray system can be installed safely, remain structurally sound, and provide efficient cable management for years to come.

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INSTALLATION GUIDE

To ensure that the complete ladder tray wiring system performs as designed, it is important that it is properly installed. Personal

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Proper planning for installing cable tray includes calculations based on loading, support systems, cable/wire fill and spacing,

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