How to use steel straps in cable trays

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

Steel straps are used to securely fasten cable trays to support structures, ensuring stability and compliance with electrical installation standards.

Materials and Tools Needed

Steel straps (banding) suitable for the tray size and loadStrap tensioning tool or banding toolSeal or buckle for securing the strapCable tray system (ladder, perforated, or mesh type)Support structure (ceiling, wall, or steel beam)Protective equipment: gloves, safety glasses, and hard hat Step-by-Step ProcedurePlan the Installation Determine the cable tray route, support points, and spacing. Standard support intervals are typically 1. 5 to 2 meters, but always follow the manufacturer's specifications.

Identify locations for bends, tees, or risers. Position the Cable Tray Place the tray on the support structure. Ensure it is level using a laser or spirit level.

Align the tray sections and couplers properly to maintain continuity. Wrap the Steel Strap Loop the steel strap around the tray and the support element (e.g., threaded rod, ceiling strut, or wall bracket). Ensure the strap is flat against the tray to avoid damaging cables or the tray surface.

Insert the Seal or Buckle Thread the strap through a buckle or seal designed for steel banding. This will hold the strap in place while tensioning. Tension the Strap Use a strap tensioning tool to tighten the steel strap securely.

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The strap should be tight enough to hold the tray firmly without deforming it. Avoid over-tightening, which can damage the tray or cables. Secure the Strap Crimp the seal or buckle using the appropriate tool to lock the strap in place.

Cut off any excess strap and file sharp edges to prevent injury or cable damage. Inspect the Installation Check that the tray is level, stable, and properly supported. Ensure that all straps are secure and that there is no interference with cables or other equipment.

Additional Considerations

Corrosion Protection: Use galvanized or stainless steel straps in environments prone to moisture or chemicals. Load Capacity: Ensure the strap and support system can handle the weight of the tray and cables, including any dynamic loads. Safety Compliance: Follow local electrical codes and standards such as BS EN 61537 or NEC for cable tray installations.

By following these steps, steel straps can be effectively used to secure cable trays, providing a safe and durable installation that meets industry standards.

Article Content

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General Installation Guidelines:

Cable tray systems are to be installed so that they are accessible. If possible, leave 12” of space minimum free above and to the side of the tray to allow for cable installation and maintenance.

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Cable ladder systems and cable tray systems are designed for use as supports for cables and not as enclosures giving full mechanical protection. They are not intended to be used as ladders, walk ways

5 Steps to Learn How to Install Cable Trays

Installing a cable tray system requires careful planning to ensure it can support the weight of the cables and adheres to electrical safety codes.

Cable Trays

Cable trays distribute bundles of electrical cables from power supplies to electrical equipment and components throughout the plant. Cable tray systems consist of insulated electrical cables layered

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