How to weld angle steel for cable trays

Overview

Four different mesh cable tray types are available, depending on the requirements, area of application and cable quantity.

Key Takeaways

Angle steel supports for cable trays are typically welded to existing steel structures or fabricated MS supports using proper welding techniques, ensuring structural stability, load-bearing capacity, and electrical safety.

Selecting and Preparing Angle Steel Supports

Material: Use mild steel (MS) angles, commonly 50 x 50 mm with 6 mm thickness, or as specified for the load requirements. Surface Preparation: Clean the steel surfaces to remove rust, paint, or oil. For galvanized steel, grinding or chemical cleaning may be required at the weld points.

Cutting and Layout: Cut the angle steel to the required lengths and mark positions according to the cable tray layout. Supports are typically spaced at 1-meter intervals for wall-mounted or suspended installations.

Welding Procedure

Welding Type: Fillet welding is commonly used to attach angle steel to existing MS structures or C-channels. Ensure the weld size matches the load requirements. Positioning: Secure the angle steel in place using clamps or temporary fixtures to maintain alignment before welding.

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Welding Technique: Use shielded metal arc welding (SMAW) or gas metal arc welding (GMAW/MIG) depending on site equipment and steel type. Maintain proper electrode selection and amperage for 6 mm thick steel. Safety: Follow standard welding safety practices, including protective gear, ventilation, and fire prevention.

Ensure the work area is free from combustible materials.

Post-

Welding Considerations

Inspection: Check welds for continuity, penetration, and absence of cracks or porosity. Ensure the support is level and aligned with the cable tray route. Corrosion Protection: Apply primer and enamel paint (e.g., Siemens grey enamel over red oxide primer) to welded areas to prevent rust.

Load Testing: Verify that the welded supports can handle the intended cable load, including any additional mechanical or environmental forces.

Installation of Cable Trays

Once the angle steel supports are welded and painted, mount the cable trays using high-tensile bolts, washers, and nuts. Use coupler plates for joining tray sections and ensure proper isolation with G-10 or FRP sheets where required.

Best Practices

Angle steel supports are preferred in industrial environments for their structural stability and wide load-bearing range. Ensure all welding and installation work is performed by competent personnel familiar with electrical and structural safety standards. Consider future maintenance and adjustments; welded supports are permanent, so precise layout and alignment are critical.

By following these steps, angle steel supports can be securely welded to provide a durable and safe foundation for cable tray systems in industrial or commercial installations.

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Article Content

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The document discusses the weld design for connections of different sized cable trays. It provides maximum and minimum force calculations for beams of various cross sections, including PFC

Cable Tray Installation Procedure | PDF | Metal Fabrication ...

This document outlines the procedures for installing cable trays, including surveying the work area, installing supports every 1.5 meters, fabricating supports using cutting, grinding, tacking,

Technical Specification for Cable tray installation and cable laying work

Contractor has to fabricate wall mounted support of MS angles (size 50 x 50 mm, 6mm thickness) for cable tray length ~ 150 M (layout as per Fig 1) at ~10M height as stated in the drawing at interval of

Guide to cable support systems

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GUIDE CABLE TRAYS TECHNICAL

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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In designing supports for a cable tray system, consideration should be given to the loads associated with future cable additions and any additional loading that may be applied to the cable tray system (e.g.,

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Learn about the different types of cable tray support, including rod supports and angle steel supports, and how to choose the right one for your electrical installation needs.

Cable tray support and its welding method

As described above, the cable tray support and the welding method according to an embodiment of the present invention can weld the welding area by the operator alone while the joint...

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