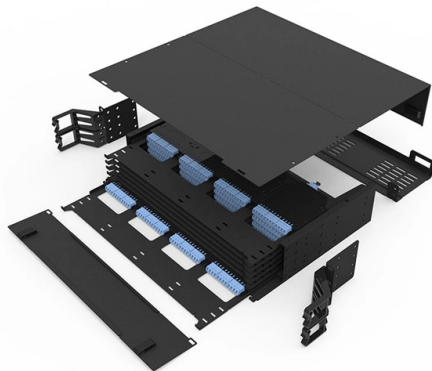


Bending stainless steel cable trays



Overview

Adding chrome ($\pm 13\%$) to the iron creates a certain sheen and the metal becomes more corrosion-resistant.

Key Takeaways

Stainless steel cable trays can be bent using specialized machinery or pre-fabricated bends, with careful attention to maintaining corrosion resistance and structural integrity. Methods for Bending

1. Pre-fabricated Bend Trays: For many installations, using pre-bent stainless steel trays such as 90° elbows, "C" or "U" shaped channels, or ladder-style bends is the simplest approach.

These trays are manufactured to precise angles and maintain full structural support for cables, preventing sagging or stress points.

2. Manual or Machine Bending: Manual bending is possible for lightweight or narrow trays but requires skill to avoid deforming the tray or damaging the protective oxide layer.

Automatic bending machines are commonly used in manufacturing. These machines feed the tray and bend it at precise angles, ensuring uniformity and strength. They reduce labor, improve safety, and maintain the tray's shape and rigidity.

Machines often use servo motors and ball screw drives for accurate positioning.

Material Considerations

Stainless steel forms a protective chromium oxide layer that prevents corrosion. Bending can disrupt this passive layer, creating oxygen-poor pockets that may lead to localized corrosion. To restore corrosion resistance: Pickling and passivating the bent tray removes impurities and re-establishes the protective oxide layer.

Degreasing before pickling ensures contaminants from bending or machining are removed. Types of Stainless Steel Trays 304 and 316 grades are commonly used. 316 offers higher corrosion resistance, especially in harsh environments.

Ladder-style trays, wire mesh trays, and solid-bottom trays can all be bent, but the method may vary depending on tray type and load requirements.

Practical Tips

Use pre-fabricated bends whenever possible to reduce on-site labor and maintain structural integrity. For on-site bending, ensure proper tools or machines are used to avoid kinks or deformation. After bending, inspect the tray for surface damage and perform passivation if necessary to maintain corrosion resistance.

Consider weight and cable load; ensure mounting brackets are spaced appropriately to prevent sagging after bending. By following these methods and precautions, stainless steel cable trays can be bent safely while preserving their durability, corrosion resistance, and cable support functionality.

Article Content

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