

Article Overview

Irregular shaped cable trays are produced using a combination of roll forming, CNC punching, and press brake operations, allowing for customized profiles, dimensions, and hole patterns.

Production Overview

Manufacturing irregular shaped cable trays involves a coordinated production line that integrates multiple machines to handle forming, cutting, and finishing operations. The process typically starts with metal coils (galvanized steel, stainless steel, or aluminum) which are decoiled, leveled, and fed into the production line with high precision .

Core Machines and Processes

o Roll Forming Machine

o Continuously shapes metal strips into the desired tray profile, including U-channel, C-channel, ladder, or custom irregular shapes .

o Adjustable roll forming stations allow for different widths, heights, and thicknesses, accommodating complex designs .

o Production speeds range from 10 to 40 meters per minute depending on material thickness and profile complexity .

o CNC Punching System

o Creates mounting holes, ventilation slots, and knockouts for heat dissipation and cable management .

o Intelligent punching units can handle varied hole layouts to optimize structural strength and thermal performance, reducing cable temperature rise by 15-20% .

o Punching design considers hole diameter, spacing, and array mode to balance functionality and mechanical safety .

o Press Brake (Secondary Bending)

o Handles complex bends and flanges that cannot be formed on the roll line .

o Multi-axis CNC press brakes allow precise back gauge positioning for multiple bends per part, essential for irregular shapes and custom fittings .

o Tandem setups can increase throughput for high-volume production.

o Cutting and Shearing

o Flying shears or fixed-length shears cut trays to the required lengths .

o Ensures consistent dimensions for both standard and irregular profiles.

Customization and Automation

Irregular Shaped Cable Tray Production

- o Modern production lines are equipped with PLC intelligent control panels for parameter setting, monitoring, and fault diagnosis .
- o Servo motor-controlled feeders ensure precise and continuous material feeding, critical for irregular shapes .
- o Lines can be semi-automatic or fully automated, supporting batch production, variable lengths, and custom specifications .
- o Thickness, width, height, and hole patterns can be tailored to project requirements, including perforated, ladder, and solid-bottom trays .

Material Considerations

- o Cable trays can be produced from stainless steel, galvanized steel, aluminum, or FRP/GRP composites depending on environmental and load requirements .
- o Material selection affects forming parameters, punching design, and bending tonnage.

Practical Applications

Irregular shaped cable trays are widely used in industrial plants, power stations, offshore installations, and complex building projects where standard trays cannot accommodate unique routing or load requirements . Properly designed production lines ensure high precision, structural integrity, and efficient installation. In summary, producing irregular shaped cable trays requires a flexible, integrated production line combining roll forming, CNC punching, press brake bending, and cutting, with automation and customization capabilities to meet diverse project specifications .

Cable trays come in many sizes and designs - ladder type, ventilated channel type, solid channel type, wire mesh type etc. The

The cable tray production line is an intelligent mechanical integrated system designed for the production of

Every cable tray type produced on our rollforming lines -- from lightweight perforated channel to heavy-duty ladder rungs. All

Roll formed cable trays provide an economical and customizable solution for varied cable

Explore the cable tray manufacturing process, types of cable trays, and important factors. Learn how it all works in an

Cable tray is alternatives to wire ways and electrical conduits, which completely enclose cables. Study types of cable

Irregular Shaped Cable Tray Production

The cable trunking production line is used to safely and neatly route energy and data cables. This production line allows the

This article explains the main requirements and good practices for cable tray systems, including tray types, materials, loading,

HCM-600 Cable Tray Automatic Production Line is a cable tray roll forming line that adopts metal sheet coils as raw material. It forms

Explore the types of cable trays, their advantages, applications, and standard sizes. Learn how they improve cable

We customize according to customer requirements and meet your semi

A Cable Tray Roll Forming Machine is a specialized piece of industrial equipment designed to manufacture cable

A cable tray project should start with the finished tray drawing, not only with a machine list. Before choosing a cable tray roll forming

The final drawings for a cable tray wiring system may be completed and sent out for bid or construction more quickly

Cable Tray Roll Forming Machine can produce cable trays with different sizes, thickness, and from different materials, SS, CR, GI,

The evolution of cable tray production lines reflects the broader trends in manufacturing towards efficiency, automation, and

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