

Article Overview

Pipe trays are commonly supported using rigid supports, hangers, clamps, and adjustable brackets to ensure stability, load distribution, and safe thermal movement.

Types of Pipe Tray Supports

1. Rigid Supports Rigid supports are structural elements that prevent vertical movement and directly transfer the load of the pipe tray to the supporting structure. They are typically used where thermal expansion is minimal. Examples include:

- o Pipe shoes and saddles: Provide stable seating for trays and pipes.
 - o Clamps and brackets: Secure trays to beams or walls.
 - o Welded supports: Fixed connections to structural steel for heavy or long-span trays .
2. Hangers and Rod Supports Hangers suspend pipe trays from ceilings or overhead structures, allowing for flexibility in height and alignment. They can be:
- o Rigid hangers: Prevent vertical movement, suitable for short spans.
 - o Spring or adjustable hangers: Accommodate thermal expansion or vibration, maintaining load distribution over long spans .
3. Adjustable and Modular Supports These include telescopic or adjustable brackets and supports that allow fine-tuning of tray height and alignment. They are useful in retrofits or areas with space constraints .
4. Combination Supports Some installations use a combination of supports and restraints, such as a shoe support with a guide, which both supports the tray weight and limits lateral or thermal movement .

Design Considerations

- o Load Capacity: Supports must handle the weight of the tray, pipes, insulation, and fluid contents.
- o Spacing: Proper spacing between supports ensures minimal deflection and vibration.
- o Thermal Expansion: Flexible supports or guides may be required to accommodate expansion and contraction.
- o Accessibility: Supports should allow maintenance access and not obstruct other equipment .

Common Materials

Pipe tray supports are typically made from structural steel, stainless steel, or corrosion-resistant alloys, depending on environmental conditions and load requirements. Plastic or composite supports may be used for lighter trays or chemical resistance needs . By selecting the appropriate combination of rigid, flexible, and adjustable supports, engineers can ensure that pipe trays remain stable, safe, and functional under all operating conditions.

Common support for pipe trays

A practical guide to product selection and installation This guide for engineers and installers has been developed by ABB as a

A main pipe rack is defined as a structural system that supports and routes interconnecting process pipelines and utility headers

The document covers the design and selection of pipe supports, including layout considerations. It defines common support

Constant effort support Constant effort supports are used to support pipe lines subjected to large vertical movements

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Common support for pipe trays

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