

FILTRATION SYSTEMS FOR TRANSPORTATION AND INDUSTRIAL APPLICATIONS

eLearning courses designed to increase productivity and profits



Learning Made Simple, Visual, and Interactive

The THORS *Filtration Systems for Transportation and Industrial Applications* course introduces the learner to the filtration system components, filter elements, and media materials. The course covers various filtration principles, key performance attributes, and filtration system types. Presented in THORS' visually engaging format, this course will equip the learner with an in-depth understanding of filtration systems.

Credit Hours **2.5**

Learning Objectives

- Define filtration systems.
- Describe the types of filter elements.
- Identify the different types of media.
- Explain various filtration principles.
- Identify the key performance attributes used to rate the performance of a filter.
- Recognize the types of filtration systems.

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I. Filtration System Components

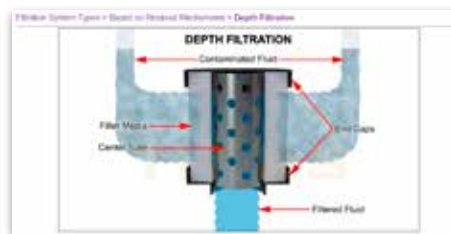
- Filters
- Filter Element
 - Panel Style
 - Cylindrical
 - Direct Flow
 - Channel Flow
- Media
 - Sintered Metal Media
 - Porous Ceramics Media
 - Fabric Media
 - Screen
 - Cellulose Media
 - Porous Plastic Media
 - Resin Bonded Media
 - Unconsolidated Media
 - Membrane Media

II. Filtration System Operation

- Filtration Principles
- Contamination Sources
- Key Performance Attributes
 - Efficiency
 - Contaminant Capacity
 - Flow Rate
 - Flow Restriction
 - Micron Rating
 - Duty Cycle
- System Maintenance

III. Filtration System Types

- Based on Filtration Methods
 - Mechanical Filtration
 - Chemical Filtration
 - Biological Filtration
- Based on Removal Mechanisms
 - Surface Filtration
 - Depth Filtration
- Based on Applications
 - Air Filtration
 - Hydrocarbon Filtration
 - Hydraulic Fluid Filtration
 - Water Filtration

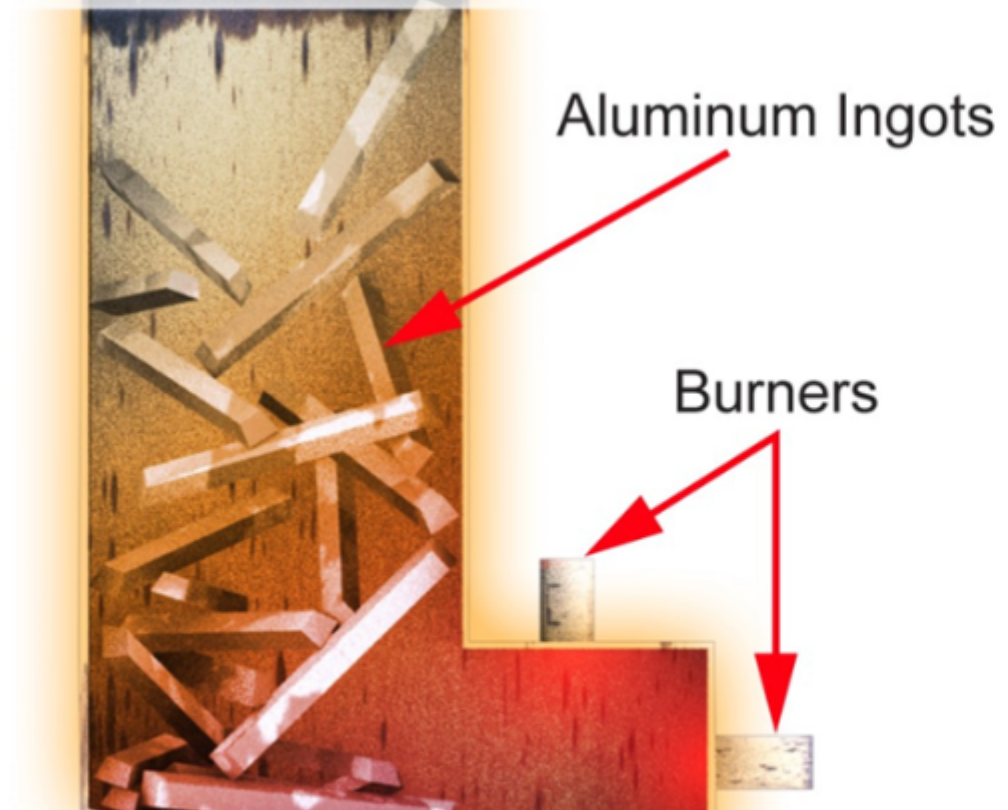


Wet Bath Furnaces

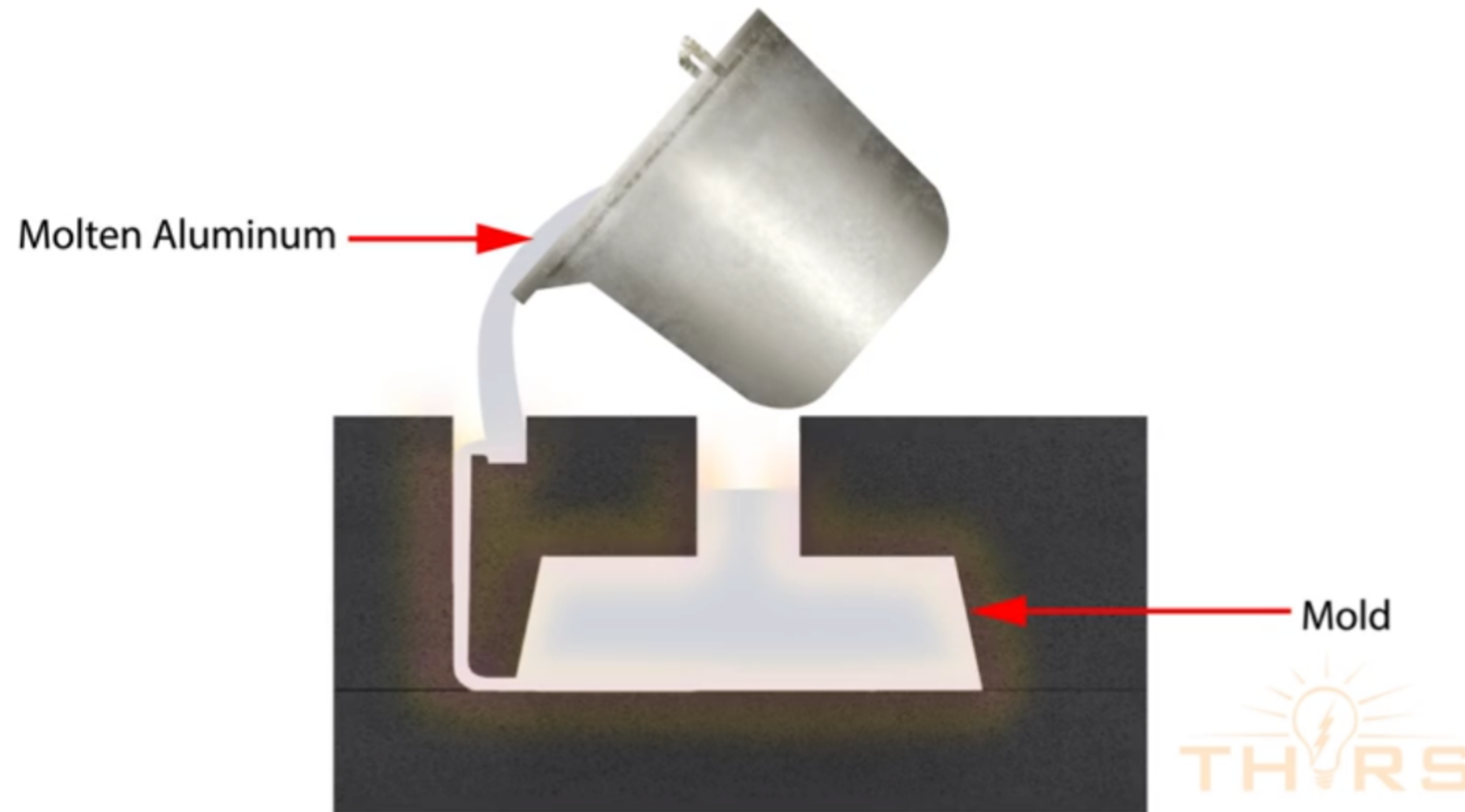
Dry Hearth Furnaces

Dry hearth furnaces, also known as vertical shaft furnaces, if oriented vertically, have a brick-lined hearth that slopes down into a secondary holding furnace. The charge material is designed to melt directly on the hearth, leaving its primary oxide skin on the hearth. The liquid metal escapes the oxide skin and trickles down the slope to join the melt. Meanwhile, the collapsed skins remain on the hearth and can then be raked off periodically through a side door.

DRY HEARTH FURNACE



ALUMINUM CASTINGS



Narration

Aluminum castings are used in many industries, such as food processing, aerospace, and many others.

The production of castings involves heating the metal to its melting point and pouring it into molds of various shapes, sizes, and materials, depending on the application.

Various processes, such as sand casting and permanent mold casting, are utilized to produce aluminum castings.

After solidifying, the castings are removed from the molds, and various finishing operations, such as machining, shot blasting, and anodizing, can be performed.

Aluminum alloys are typically chosen for their lightweight and high strength properties, such as their excellent machinability and good corrosion resistance.

The mechanical properties of aluminum castings are determined by the alloy composition and the casting process used.