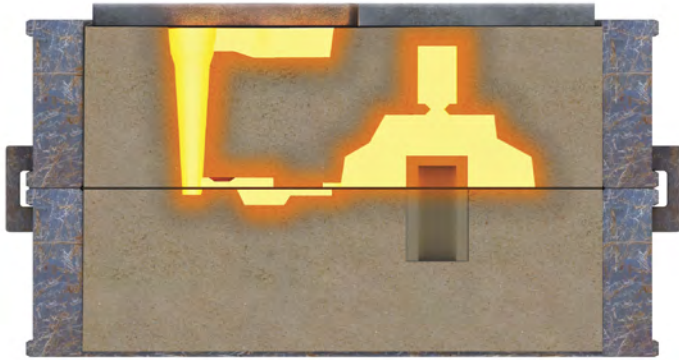


BONDED SAND FUNDAMENTALS

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

Bonded Sand Fundamentals is an introduction to bonded sand molding processes, including the mold and core preparation, pouring, solidification, and separation of metal parts. Presented in THORS' highly visual and interactive learning format, this course will help foundry employees become familiar with the important equipment and terminology associated with their profession.

Credit Hours **2**

Learning Objectives

- Recognize some of the basic equipment used in bonded sand foundries.
- Recall basic terminology and phrases associated with foundry processes.
- Identify the equipment and processing steps applied to mold and core making.
- Recall the various steps involved in properly pouring bonded sand molds.
- Understand the primary steps carried out to castings after solidification.

Table of Contents

I. Mold Making

- **Types of Bonded Sand Molding**
 - o Clay Bonded Sand (Green Sand) Molding
 - o Chemically-Bonded Sand Molding
 - o Shell Bonded Sand Molding
- **Parts of the Mold**
 - o Mold Halves
 - o Filling System
 - o Feeding System
 - o Additional Features
- **Sand Related Equipment**
- **Mold Making Equipment**
 - o Jolt Squeeze Machines
 - o Cope and Drag Machines
 - o Vertically-Parted Molding Machines

II. Core Making

- **Core Making Materials**
- **Core Making Equipment**
- **Core and Mold Accessories**
- **Hot Box Core Making**
- **Cold Box Core Making**
- **Shell Box Core Making**
- **Core Setting**
- **Mold Closing**

III. Pouring and Separation

- **Melt Processing Time**
 - o Melting Time
 - o Tapping Time
 - o Holding Time

• Pouring

- o Pouring Methods
- o Pouring Techniques

• Solidification Factors

- o Inoculation for Cast Iron
- o Deoxidation for Steel
- o Silicon Modification for Aluminum
- o Grain Refinement

• Separation and Cleaning

- o Shakeout
- o Blast Cleaning
- o Casting Cleaning

