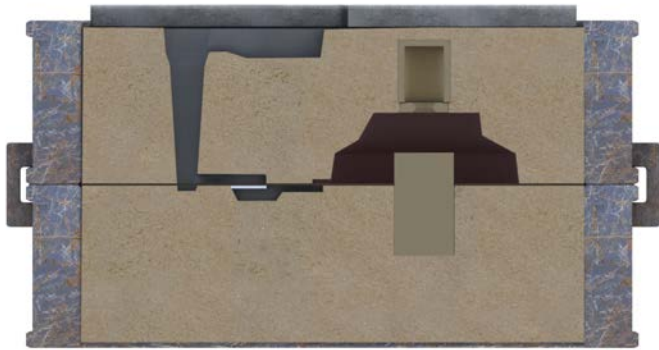


CASTINGS: CHEMICALLY BONDED SAND

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

The Chemically Bonded Sand Basics course is an introduction to the binder systems used in the chemically bonded sand systems. Presented in THORS' highly visual and interactive learning format, this course equips foundry employees with a more robust and comprehensive understanding the physical, chemical, and mechanical properties of foundry grade chemically bonded sand.

Credit Hours **2.5**

Learning Objectives

- Understand the classification of the binder system used in chemically bonded sand.
- Understand the different curing processes of inorganic and organic binder systems.
- Recall the sand types, sand size, sand shapes along with the sand reclamation process.
- Understand the physical properties of the binder system.
- Understand the mixed sand properties.

Table of Contents

I. Binder System Classification

- **Organic Binder System**
 - o Air-Cured
 - Binder Types
 - Advantages and Limitations
 - o Gas-Cured
 - Binder Types
 - Advantages and Limitations
 - o Heat-Cured
 - Binder Types
 - Advantages and Limitations
- **Inorganic Binder System**
 - o Air-Cured
 - Binder Types
 - Advantages and Limitations
 - o Gas-Cured
 - Binder Types
 - Advantages and Limitations

II. Sand Concepts

- **Sand Types**
 - o Silica Sand
 - o Specialty Sand
- **Sand Size**
- **Sand Shapes**
- **Sand Reclamation**
 - o Mechanical Reclamation
 - o Thermal Reclamation
 - o Wet Reclamation
- **Measured Properties**
 - o Sand Distribution
 - o Moisture
 - o Refractoriness
 - o Acid Demand Value
 - o Loss on Ignition
 - o Specimen Weight

III. Binder System Properties

- **Physical Properties**
 - o Viscosity
 - o Density
- **Mixed Sand Properties**
 - o Strength Properties
 - Air-Cured
 - Gas-Cured
 - Heat-Cured
 - o Measured Properties
 - Strip Time
 - Work Life
 - Mold hardness
 - Gas Content

