



DY-KAST Supply & The Foundry Way Learning Center are proud to partner in offering

ALUMINUM CASTING AND METALLURGY (2-Day Hands-on Course)

Course Overview

This course covers the aluminum casting process from material selection through processing, inspection, and controls with key areas are covered in detail. Hands-on casting, metallurgy, and inspection techniques are employed in many segments of the course to ensure participants leave with a lasting understanding of critical processes and terminology.

Who Does the Course Benefit? -

- Anyone who wishes to understand the process, process control, and terminology of the Aluminum Foundry.
- **Aluminum Foundries** – Critical for supervisors, quality personnel, and management. Beneficial for purchasing agents, accounting staff.
- **End Users of Castings** – This course is beneficial for purchasing agents, quality engineers and all personnel interacting with aluminum casting suppliers.

Course Outline

- **Aluminum Ingot and Alloys** – Differences, Reasons for selection
- **Foundry Terminology** - From Ingot through production and finished product
- **Foundry Processes** – Green Sand, Dry Sand, P-mold, Die Casting, Plaster Mold & Squeeze cast
- **In-Process Operations** – Molds, Cores, Chills, Gating & Pouring
- **Finish Operations** – Shake-out, core removal, trim, Heat Treat, Targeting
- **Casting Defects** – Types, Causes & Cures ****Hands-on****
- **Foundry Safety** – Critical safety information for working with molten aluminum
- **In-Process Inspection and Quality Controls** – Hydrogen gas checks, Visual inspection, Chemical Analysis, Hardness Testing, Penetrant Inspection, X-ray, ****Hands-on****
- **Alloy Strength vs Physical Structure** – Grain size, Dendritic Cell Size, Si Modification, Alloying Elements ****Hands-on****
- **Mechanical Properties** – Tensile, Yield, Elongation, Hardness - ****Hands-on****
- **Understanding Heat Treatment** – Critical Variables, Effect on microstructure and mechanical properties, Heat Treat Controls
- **Hot Isostatic Press (HIP)** – Understanding the process, uses, and benefits
- **Weld Repair** – When to use, Requirements and Controls

Details

- **Length of Class** – 2 days. 10am to 5pm on day 1 and 8am to 3pm on day 2. Working Lunch provided.
- **Number of Participants** – In order to ensure the maximum learning experience and meet the needs of each participant, class size is limited to 8. Note - **Classes fill quick so register now.**
- **Location** – Foundry Way, 5100 River Valley Rd, Milford, OH
- **Cost** – \$1,200.00 per person
- **Meals** – Lunch is provided both days. Dinner with the instructors is provided at the end of Day 1.

Facility – Our state-of-the-art classroom is situated adjacent to our metallurgical laboratory and inspection facility, providing us the unique ability to integrate classroom instruction with hands-on learning.