

What You Will Learn

Secondary steelmaking refractory maintenance is vital to both productivity and safety in a meltshop and caster. It is important for those involved to have a thorough understanding of the basic concepts of refractory system design. Consultants, suppliers and recognized industry experts have developed a curriculum to educate attendees on the following topics: refractory raw material selection; properties of refractories, application and limitations of refractories; theory and application of insulation; design and application of stir plugs, lances and slidegates; free opens, refractory handling, installation and pre-heating; ladle secondary steelmaking – LMF; and casting requirements and wear mechanisms. Presentations will provide data from steelmaking operations, and attendees will benefit from the practical experience of the presenters, including the application of the latest tools and techniques being used. Open discussions will allow participants to gather additional information and network with attendees and instructors.

Who You Will Meet

This conference is intended for steelmaking operations personnel, maintenance and supervisory employees. Refractory suppliers and service suppliers should also attend. The AIST Ladle & Secondary Refining and Refractory Systems Technology Committees strongly believe that this course provides the basic knowledge for a better understanding of secondary steelmaking, refractory and insulating systems.

Professional Development Hour (PDH) credits are available for this training course.

Hotel Information

A block of rooms has been reserved at the Wyndham Garden Lake Buena Vista Disney Springs Resort Area. Please call the hotel at +1.800.624.4109 by 12 September 2022 to secure the AIST discount rate of US\$99 per night for single/double occupancy plus a US\$20 resort fee.

Upcoming Events

Environmental Solutions: Meeting EPA Air Emission Requirements
25–27 October 2022 • Orlando, Fla., USA

Modern Electric Furnace Steelmaking — A Practical Training Seminar
20–24 February 2023 • San Antonio, Texas, USA

Scrap Supplements and Alternative Ironmaking 9
6–8 March 2023 • Orlando, Fla., USA

International Symposium on New Developments in Advanced High-Strength Sheet Steels
20–23 June 2023 • Vail, Colo., USA

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AIST Members
US\$995

Non-Members
US\$1,240



SCAN FOR MORE
INFORMATION



Secondary Steelmaking Refractories Practical Training Seminar 4–6 October 2022

Wyndham Garden Lake Buena Vista Disney Springs Resort Area
Orlando, Fla., USA

Plant Tour: Nucor Steel Florida Inc.

Tuesday, 4 October 2022

7 a.m. **Registration and Breakfast**

8 a.m. **Keynote Presentation**

8:30 a.m. **Introductions, Jimmy Barrett, Allied Mineral Products Inc.**

8:45 a.m. **Raw Materials, Brick and Monolithics, Ruth Engel, Refractory Consulting Services**

The seminar will begin by presenting the raw materials used in the manufacture of refractories, why they are used, their availability and expected characteristics. These raw materials will then be combined to make bricks, and their effect on physical properties will be discussed. This discussion will be extended to castables, where additional parameters such as installation and dry-out will be considered.

9:45 a.m. **Break**

10 a.m. **Brick Manufacturing, Korey Skala, HarbisonWalker International**
Overview of main raw materials, production routes for fired and unfired bricks, quality assurance, and end-use applications.

10:45 a.m. **Break**

11 a.m. **Ladle Construction Design and Insulation, Rob Doty, IMACRO Inc.**

This presentation features a wide-ranging discussion about the many options in ladle refractory design. The basics of heat transfer will then be covered, from molten steel through refractories to ladle shells, followed by insulation choices, how they affect ladle shell temperatures and refractory expansion dynamics.

Noon **Lunch**

1 p.m. **Ladle Pre-Heat and Handling, Rafael Bruch, Gerdau Long Steel North America Midlothian Mill**

Steel ladles will be covered in detail, including pre-heating, refractory wear mechanisms and measuring options.

1:45 p.m. **Break**

2 p.m. **Ladle Free Opening — Practice and Performance, Xin Zhang, Cleveland-Cliffs Indiana Harbor**

Good ladle free opening performance is all about safety, productivity and quality. The root cause of the non-free open and its countermeasures are presented. Introducing process changes often presents new challenges to free opening performance.

3 p.m. **Break**

3:15 p.m. **Tap-to-Cast Operations, Harriet Dutka, SANGRAF International**

This presentation is a brief overview that focuses on answering the “why’s” of certain practices and procedures in steelmaking. If you are new to steelmaking or are in a non-technical role, this presentation will answer many of the questions you would like to ask.

4–5:30 p.m. **Panel Discussion and Reception, Moderator: Jimmy Barrett, Allied Mineral Products Inc.**

Panelists: Rob Doty, IMACRO Inc.; Harriet Dutka, SANGRAF International

Wednesday, 5 October 2022

7 a.m. **Breakfast**

8 a.m. **Secondary Steelmaking Process — LMF, Abhishek Bhansali, Nucor Steel-Berkeley**

Discussion will focus on the basics of secondary metallurgy and refining, and the importance of refractories pertaining to secondary metallurgy.

9 a.m. **Ladle Breakout Failure Investigation, Dave Ehrhart, RHI Magnesita**

This presentation will discuss investigation strategies for ladle and slidegate failure and offer insight on potential root causes.

9:30 a.m. **Break**

9:45 a.m. **Refractory Materials Testing**

10:45 a.m. **Break**

11 a.m. **Infrared Systems Use in Primary Steel Processes, Tom Connors and John Lewis, Connors Industrials Inc.**

This presentation will review pros/cons with infrared systems in primary steelmaking processes affecting ladle refractory performance.

11:30 a.m. **Laser Technology to Measure Refractory Wear, Sean Guy, Process Metrix LLC**

The presentation will center around laser technology to measure refractory wear in steelmaking vessels. This technology can help steelmakers utilize their vessels more efficiently, safely push them longer and help guide their refractory practices.

Noon **Lunch**

1 p.m. **Ladle Stirring Procedures, John Springer and and Jeremiah Brandon, Vesuvius**

This discussion will detail the importance of ladle stirring and the operations associated with the effective use of purge plugs in the ladle bottom.

1:45 p.m. **Break**

2 p.m. **Flow Control Products, Josh Kaser, RHI Magnesita**

This presentation will explain the uses and applications of isostatic refractories as they are used at the caster.

3:15 p.m. **Break**

3:30 p.m. **Tundish Refractory Design, Fred Adkins, HarbisonWalker International**

Discussion on refractory lining layers and options, their makeup, differences and important properties. The presentation will also discuss pre-cast tundish flow modifiers, their purpose and objectives.

4:15 p.m. **Adjourn**

Thursday, 6 October 2022

7 a.m. **Breakfast**

8 a.m. **Plant Tour of Nucor Steel Florida Inc.** 🏠

Noon **Return From Plant Tour and Conference Adjourn**

