



CONTINUOUS CASTING

A PRACTICAL TRAINING SEMINAR

13-14 OCTOBER 2020
Virtual Meeting

ABOUT THE PROGRAM

Developed and presented with the talented resources of the Continuous Casting Technology Committee, this informative program targets the heart of steelmaking: the frontline operator. The key focus of the program is to discuss the practical aspects of casting slabs, billets and blooms, while introducing the theoretical concepts. By achieving the proper teaching balance, attendee understanding of the process is ensured without the need for a technical background. This course is a must for the progressive, informed and educated steelmaker of the future!

WHO SHOULD ATTEND

This training seminar has been designed for the frontline casting employee. It would also be beneficial to individuals newly assigned to work in the casting area, suppliers of casting consumables and services, as well as others wishing to review major variables that impact the quality of as-cast products. The presentations will be geared toward general casting principles, with all machine types represented.

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 13.5 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credits in New York, Florida, North Carolina and Oklahoma.

ORGANIZED BY

AIST's Continuous Casting Technology Committee.



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UPCOMING EVENTS

Secondary Steelmaking Refractories –
A Practical Training Seminar
6–7 October 2020
Virtual Meeting

Environmental Solutions: Meeting EPA Air
Emission Requirements
19–20 October 2020
Virtual Meeting

Steel Mill Combustion and Thermal Systems
27–28 October 2020
Virtual Meeting

The Making, Shaping and Treating of Steel: 101
4–5 November 2020
Virtual Meeting



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REGISTRATION INCLUDES

Live virtual instruction via individual link; electronic access to course material; networking opportunities; and live Q&A with instructors

AIST MEMBERS

US\$295

NON-MEMBERS

US\$445

ATTENTION NON-MEMBERS

Non-member registration fees include membership in AIST through 31 December 2021. Membership is not automatic. A completed membership application must be returned to AIST.

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SCHEDULE OF EVENTS



Tuesday, 13 October 2020

8 a.m. EST

Historical Perspective of Continuous Casting with Design & Technology of Slab and Long Products
Jack Young, Hatch Ltd.

9:15 a.m. EST

Break

9:30 a.m. EST

EMS and EMBR Technology for Billets, Blooms and Slabs

Chris Curran and Joakim Andersson, ABB

This presentation provides an overview of how electromagnetic devices are implemented for productivity and quality improvements on the continuous caster.

10 a.m. EST

Break

10:15 a.m. EST

Principles of Mold Flux Technology – An Operator's Guide to Continuous Casting Flux

Darrell Sturgill, IMERYS Steelcasting USA Inc.

Attendees will receive an overview of the design, production and application of continuous casting fluxes.

11 a.m. EST

Initial Solidification and Oscillation Mark Formation

Brian Thomas, Colorado School of Mines

Noon

Lunch Break

1 p.m. EST

Mold and Copper Maintenance and Coating Technologies

Chad Donovan, SMS group Inc.

Discussion of the various types of continuous caster molds and proper maintenance practices, including a variety of mold coating options available to the industry.

2 p.m. EST

Break

2:15 p.m. EST

Sources of Reoxidation and Why To Avoid

Ron O'Malley, Missouri University of Science and Technology

To produce high-quality cast products, steel must be protected from reoxidation. Reoxidation can occur in the ladle, at secondary ladle metallurgy operation, and also in the transfer operations from ladle to tundish and tundish to the mold. Various techniques will be described that can be used to minimize reoxidation.

3:15 p.m. EST

Break

3:30 p.m. EST

Caster Quality Defects and Their Potential Causes

Ron O'Malley, Missouri University of Science and Technology

The surface and internal quality of continuously cast slabs and billets is intimately linked to the caster design and to the operating and maintenance practices employed in the continuous casting process. Common causes for five classes of continuous casting defects (longitudinal cracking, transverse cracking, slivers and lamination defects, internal cracking, and segregation defects) will be reviewed and linked to these design and practice influences.

5 p.m. EST

Adjourn

Wednesday, 14 October 2020

8 a.m. EST

Breakouts and Their Prevention

Bill Emling, SMS group Inc.

This presentation is based on the chapter in *The Making, Shaping and Treating of Steels, Casting Volume*. A review will be given of various causes for caster breakouts and the systems used to alarm and prevent breakouts.

9 a.m. EST

Break

9:15 a.m. EST

Caster Bearings – Types of Bearings, Failure Modes and Preventive Maintenance

Paul Brda, NSK Corp.

Types of bearings used in casters, common failure modes and maintenance best practices.

10:15 a.m. EST

Break

10:30 a.m. EST

Caster Roll Maintenance and Overlay Technologies

Jeff Brower, Primetals Technologies USA LLC

Caster roll and segment life can be significantly increased through the use of customized weld overlays and base materials. This session details the operational impact on caster rolls and technologies developed to improve roll performance.

11:30 a.m. EST

Lunch Break

12:30 p.m. EST

Panel Discussion and Reception

Moderator: Jeff Brower, Primetals Technologies USA LLC; Panelists: Ian Deeks, Nucor Steel–Arkansas, Rick Besich, ArcelorMittal Indiana Harbor, and Brian Thomas, Colorado School of Mines

1:30 p.m. EST

Break

1:45 p.m. EST

Billet and Bloom Caster Operations and Maintenance

Ian Deeks, Nucor Steel–Arkansas

Lessons learned in the operations of billet and bloom casters.

2:45 p.m. EST

Break

3 p.m. EST

Caster Hydraulics – Failure Modes and Preventive Maintenance

Mark Cook, Yates Industries Inc.

This discussion will cover cylinders used in casters, failure modes, preventive maintenance and effective cylinder reconditioning programs.

4 p.m. EST

Caster Secondary Cooling and Water Treatment

Stephen Swoope, Delavan Spray Technologies and John Cioffi, NALCO Water, An Ecolab Company

Overview of spray nozzles used in the casting processes with detailed technical support on selection and maintenance of products used for cooling steel. Using fluid dynamics and heat dispersion to ensure a quality product with the highest productivity rate available today. This presentation will offer basic nozzle types and function. It will also include a look at primary and secondary cooling water leading indicators and best practices for implementation of a successful treatment program.

5 p.m. EST

Conference Adjourn