



Continuous Casting

A Practical Training Seminar

8–11 October 2018

DoubleTree by Hilton Hotel Detroit – Dearborn
Detroit, Mich., USA

Featured Plant Tour: AK Steel – Dearborn Works



Registration Includes

Registration fee includes breakfast and lunche Tuesday and Wednesday, reception Wednesday, breakfast Thursday, plant tour with bus transportation, and a course workbook or flash drive including presentations.

Hotel Accommodations

A block of rooms has been reserved at the DoubleTree by Hilton Hotel Detroit - Dearborn. Please call the hotel at +1.800.222.8733 by 21 September 2018 to secure the AIST discount rate of US\$139 per night for single/double occupancy.

AIST Members

US\$845

by 27 August 2018

US\$945

after 27 August 2018

Non-Members

US\$1,060

by 27 August 2018

US\$1,160

after 27 August 2018



Featured Plant Tour

AK Steel – Dearborn Works

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 14.5 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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Schedule of Events

Monday, 8 October 2018

4–6 p.m.
Registration

Tuesday, 9 October 2018

7 a.m.
Registration and Breakfast

8 a.m.
Historical Perspective of Continuous Casting
Jack Young
A review of the historical development of continuous casting and the solidification process.

9 a.m.
Break

9:15 a.m.
Continuous Casting Design and Technology (Slab and Long Products)
Dewey Humes, Primetals Technologies
USA LLC
A general review of machine design for continuous casting with a brief discussion regarding automation models.

10 a.m.
Break

10:15 a.m.
Principles of Mold Flux Technology — An Operator's Guide to Continuous Casting Flux
Darrell Sturgill, Imerys Steelcasting
USA Inc.
Participants will receive an overview of continuous casting fluxes from production through their end use. Included is continuous casting flux selection criteria.

11 a.m.
Initial Solidification and Oscillation Mark Formation
Brian Thomas, Colorado School of Mines

Noon
Lunch

1 p.m.

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.

2 p.m.
Break

2:15 p.m.
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.

3:15 p.m.
Break

3:30 p.m.
Caster Quality Defects and Their Potential Causes — Slab and Billet Quality
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.
Adjourn

Schedule of Events (cont'd)

Wednesday, 10 October 2018

7 a.m.
Breakfast

8 a.m.
Mold Copper Alloys, Design and Influence of Operating Factors on Performance

Ian Bakshi, KME America Inc.

Information will be given on the requirements that molds must fulfill when used on a steel continuous casting machine, the copper alloys commonly used, details of their design, various operating factors that affect mold life, and typical mold problems.

9 a.m.
Break

9:15 a.m.
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.

10:15 a.m.
Break

10:30 a.m.
Caster Roll Maintenance and Overlay Technologies

Jeff Brower, Primetals Technologies Metallurgical Services Maintenance

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.
Lunch

12:30 p.m.
Plant Tour of AK Steel – Dearborn Works 

4 p.m.
Panel Discussion

Panelists: Yury Krotov, Steel Dynamics Inc. – Flat Roll Group Butler Division; Rick Besich, ArcelorMittal Indiana Harbor; Ian Deeks, Nucor Steel–South Carolina; Ron O'Malley, Missouri University of Science and Technology

5 p.m.
Reception

Thursday, 11 October 2018

7 a.m.
Breakfast

8 a.m.
Billet and Bloom Caster Operations and Maintenance

Ian Deeks, Nucor Steel–South Carolina, and Bill Schlichting, United States Steel Corporation

This presentation will describe past experiences with operations and maintenance of billet and bloom casting machines.

9 a.m.
Break

9:15 a.m.
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.

10 a.m.
Break

10:15 a.m.
Caster Secondary Cooling and Water Treatment and Spray Nozzles for the Steel Industry

Stephen Swoope, Delavan Spray Technologies, and Eric Rosenow, NALCO Water, An Ecolab Company

This paper will provide a very basic and high-level overview of secondary cooling water treatment. In support of secondary cooling, this is a basic overview of spray nozzles used in the steel industry. This presentation will be a part of the overall water quality and system operation and maintenance for continuous casting with all steel products.

11:15 a.m.
Caster Bearings – Types of Bearings, Failure Modes and Preventive Maintenance

Paul Brda, NSK Corp.

Typical bearing types in casters, failure modes with analysis and normal maintenance practices.

Noon
Conference Adjourn

