

UPCOMING EVENTS

Secondary Steelmaking Refractories –
A Practical Training Seminar

6–7 October 2020
Virtual Meeting

Continuous Casting – A Practical Training
Seminar

13–15 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



SHEET PROCESSING AND FINISHING LINES

A PRACTICAL TRAINING SEMINAR

28 SEPTEMBER–1 OCTOBER 2020
Virtual Meeting



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ABOUT THE PROGRAM

This seminar will provide a comprehensive overview of process lines, including pickling, annealing, galvanizing, cleaning, plating, painting, skinpass rolling, leveling, slitting and special processes. This seminar will also focus on terminal equipment for the entry and exit sections, strip quality assessment, industrial hygiene, safety, environmental concerns, overview of modeling for design and line control, operations, maintenance, and factors to consider in configuring a new process line. There will be many opportunities to discuss issues and solve problems during the question-and-answer periods.

WHO SHOULD ATTEND

Those who would like to expand their knowledge and understanding of process lines: new and transferred employees of steel producers; mechanical, electrical, process and metallurgical engineers; software and process control personnel; maintenance personnel; operators; and quality assurance specialists. Equipment manufacturers, employees from steel processors and steel service centers, suppliers, and customers of steel producers will also benefit from this seminar.

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 25 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for this course. This course is not approved for PDH credits in New York, Florida, North Carolina and Oklahoma.

ORGANIZED BY

AIST's Rolling and Processing Technology Division

REGISTRATION INCLUDES

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

AIST MEMBERS

US\$345

NON-MEMBERS

US\$495

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



Monday, 28 September 2020

8 a.m. EDT
Overview and Definition of General Terms
Chad Donovan, SMS group Inc.

8:45 a.m. EDT
Question and Answer/Break

9 a.m. EDT
Take Control of Safety
Wendy Selph, Steel Dynamics Inc. – Flat Roll Group Heartland Division
Proactively identifying and controlling incidents that have the potential to cause significant injuries or fatalities.

9:30 a.m. EDT
Question and Answer/Break

10 a.m. EDT
Process Line Design Fundamentals
Dave Withrow, Allor Manufacturing Inc.
To ensure the success of a process line, its performance requirements must be integrated fully with its setting, and the strip driving power must be ample.

10:45 a.m. EDT
Question and Answer/Break

11 a.m. EDT
Incoming Material
Mark Zipf, SMS group Inc.

Noon
Question and Answer and Lunch Break

1 p.m. EDT
Control Basics
John Ingram, Primetals Technologies USA LLC
This presentation will describe programmable logic control of various actuators within processing lines. Human-machine interface and safety concepts will also be discussed.

1:30 p.m. EDT
Question and Answer/Break

1:45 p.m. EDT
Coil Joining Using Resistance Welding
Matt Keller, Taylor-Winfield Technologies Inc.
This presentation gives an overview of processes and equipment utilized in the coil joining process in sheet processing and finishing lines, including resistance seam and spot, plasma and metal inert gas (MIG).

2:10 p.m. EDT
Question and Answer/Break

2:25 p.m. EDT
Laser Welding for Coil Joining
Deni Bellai, Hugo Miebach GmbH
The presentation will cover coil joining using a laser for welding. It will look at key difference for this type of welding machine from other types available, and will provide details on the process and the benefits it provides over other technologies.

2:50 p.m. EDT
Question and Answer/Break

3:05 p.m. EDT
Weld Inspection
Alexandre Nadeau, Tecnar Automation
This presentation will cover the various methods used for weld inspection (electromagnetic acoustic transducer ultrasonic testing (UT), laser UT, pyrometry, profilometers). The advantages and inconvenience of using these technologies will be explained. The presentation will also cover the type of welds for which they are more useful. Finally, an approximate budget range for purchase and operation will be presented.

3:30 p.m. EDT
Question and Answer/Break

3:45 p.m. EDT
Pickling – Carbon and Stainless Steel
Jay Kremm, Danieli Corp.

4:15 p.m. EDT
Question and Answer/Break

4:30 p.m. EDT
Predictive and Preventive Maintenance
David Fulford, Steel Dynamics Inc. – Flat Roll Group Heartland Division
Equipment reliability is essential to any successful business, particularly in the steel industry. Thousands of dollars per hour are lost when steel processing equipment fails. This presentation will summarize preventive and predictive maintenance practices adopted at Steel Dynamics Inc. – Flat Roll Group Heartland Division to maximize equipment reliability.

Tuesday, 29 September 2020

8 a.m. EDT
The Chemical Process of Steel Strip Cleaning and How to Enhance Performance
Stephanie Williamson, Quaker Houghton
Steel strip undergoes cleaning for the removal of process fluids, metal fines and surface residue prior to various downstream processing and finishing applications. A clean metal surface is necessary for these applications, which include annealing, metallic coating and painting. Before enhancing cleaning performance, it's important for operating personnel to understand the general framework for chemical and mechanical strip cleaning. Once this general framework is learned, ways to optimize cleaner performance through solution chemistry control and equipment design will be discussed.

8:45 a.m. EDT
Question and Answer/Break

9 a.m. EDT
Clean Section Process Technology
David Thiemann, Atlantech Process Technology Inc.
This presentation will describe in detail each unit and its process function in the cleaning section.

9:30 a.m. EDT
Question and Answer/Break

9:45 a.m. EDT
Annealing
Bill Lucas, Fives ST
This session will consider various aspects of steel annealing as it pertains to strip. The reasons for annealing, along with the physical results possible with different thermal cycles, will be covered. Equipment employed along with methods of heating, cooling and strip conditioning will be reviewed in greater detail. A brief discussion of materials used and how they influence equipment lifetime and maintenance is included. Processing atmospheres, equipment control methods and safety considerations are also discussed.

10:45 a.m. EDT
Question and Answer/Break

11 a.m. EDT
Skinpass/Temper Rolling
Mark Zipf, SMS group Inc.
This presentation provides an overview of skinpass and temper rolling, with an emphasis on “why we are doing this” and “how all this works.” Starting with a study of the material's yielding and deformation behavior, the strip's surface structure, and the concepts of profile, shape and flatness, an understanding of the key factors is established, warranting the rolling deformation process and governing its objectives. Next, classical rolling mill arrangements are reviewed, and the discussion examines the force-loaded conditions/reactions occurring within the roll bite (in both the longitudinal and transverse directions), leading to how these actions impart certain transformations of the material's geometry, surface condition and mechanical properties. The mill's equipment is then dissected with a focus on the general arrangement and roll gap/shape actuators, combined with the mill's control strategies and systems. Methods of performance measurement/quality evaluation are introduced, along with an examination of problems and shortcomings that are often experienced. The presentation closes with a comparison of differing mill formats and a review of recent developments in enhanced quality and productivity.

Noon
Question and Answer and Lunch Break

1 p.m. EDT
Automated Surface Inspection of Sheet and Finished Product
Greg Gutmann, ISRA Surface Inspection
Gain an understanding of automated surface inspections; what a system consists of, what it does that a human cannot do and the benefits of deploying a system. Receive a basic introduction to camera technologies of line and area scan and how defects are detected and defined. Learn how an automated inspection system can be deployed in the production environment of sheet processing and finishing lines. Understand new technologies that are being developed to deploy automated inspection systems where they have previously been blocked by space or the environment.

1:45 p.m. EDT
Question and Answer/Break

2 p.m. EDT
Flatness Measurement and Control
Brian Smith, ANDRITZ Herr-Voss Stamco
This presentation gives an introduction into the overall shape/flatness control problem.

2:45 p.m. EDT
Question and Answer/Break

3 p.m. EDT
Conversion Coatings: Oiling, Phosphate, Chromate, Plating, Acrylic
Stephanie Williamson, Quaker Houghton

3:45 p.m. EDT
Question and Answer/Break

4 p.m. EDT
Continuous Hot-Dip Galvanizing
Gary Dallin, International Zinc Association
Presentation on the coating section of a modern hot-dip zinc coating line, including bath control, zinc wiping practices and galvanneal production.

5 p.m. EDT
Networking Breakout Sessions

Wednesday, 30 September 2020

8 a.m. EDT
Paint Lines
Nikhil Kulkarni, Steel Dynamics Inc. – Flat Roll Group Jeffersonville Plant

8:30 a.m. EDT
Question and Answer/Break

8:45 a.m. EDT
Slitting and Sidetrimming
Greg Santillo, ANDRITZ Herr-Voss Stamco

9:30 a.m. EDT
Question and Answer/Break

9:45 a.m. EDT
Slitting Mechanics and Slitter Tooling for Modern Metal Processing
Brian Shaw and Jim Robbins, ANDRITZ ASKO
The practical application of basic engineering principles to sidetrimming and slitting all gauges and grades of steel ranging from interstitial-free steel to advanced high-strength steel. This presentation will equip attendees with the knowledge to be able to evaluate a cut metal edge with respect to a customer's quality requirements and understand what knife adjustments are needed to meet those requirements.

10:15 a.m. EDT
Question and Answer/Break

10:30 a.m. EDT
Cut-to-Length/Leveling Lines
Greg Santillo and Tom Uhrig, ANDRITZ Herr-Voss Stamco

11:15 a.m. EDT
Question and Answer/Break

11:30 a.m. EDT
Packaging of Coils and Sheets
Dan Abrell, Fleetwood-Signode, a division of Signode Industrial Group
This presentation will outline the methods of packaging historically and how they have changed. Discuss will briefly focus on the typical mill package, but will primarily focus on service centers.

Noon
Question and Answer and Lunch Break

1 p.m. EDT
Duty Cycle and Other Considerations
Rich Warriner, Virginia Crane - Foley Material Handling Co. Inc.
There are a number of factors to be considered when specifying the correct crane design for each application. This paper reviews those criteria.

1:30 p.m. EDT
Question and Answer/Break

1:45 p.m. EDT
Strip Quality Panel Discussion
Moderator, Mark Marietti, AK Steel – Dearborn Works
Panelists:
Stavros Fountoulakis, ArcelorMittal Global R&D
Nikhil Kulkarni, Steel Dynamics Inc. – Flat Roll Group Jeffersonville Plant
Kevin Siebeneck, United States Steel Corporation

2:30 p.m. EDT
Question and Answer/Break

2:45 p.m. EDT
Networking Breakout Sessions
All attendees can choose any of these breakout rooms for further discussion
1. Operations Breakout Session
2. Maintenance Breakout Session
3. Quality Assurance Breakout Session