

UPCOMING EVENTS

DRI & HBI: Logistics, Production and Utilization Seminar
1-3 March 2021
Virtual Seminar

The Making, Shaping and Treating of Steel: 101
24-25 March 2021
Virtual Meeting

Long Products Rolling – A Practical Training Seminar
1-13 May 2021
Sheraton Gunter Hotel
San Antonio, Texas, USA

Digital Transformation Forum for the Steel Industry
17-20 May 2021
Omni William Penn Hotel
Pittsburgh, Pa., USA

Maintenance Solutions: Fundamentals and New Frontiers
21-23 September 2021
Embassy Suites San Antonio Riverwalk
San Antonio, Texas, USA

HOT SHEET AND PLATE ROLLING FUNDAMENTALS

A PRACTICAL TRAINING SEMINAR

VIRTUAL SEMINAR

8-11 FEBRUARY 2021
Virtual Seminar

**AIST**
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ABOUT THE PROGRAM

This seminar provides a comprehensive overview of hot rolling steel strip and plate. The course covers fundamentals, metallurgical and quality requirements, equipment, rolling theory, control, rolls, temperature control, measurement, safety, and new technology. A new module on maintenance and reliability has been included by popular demand. Attendees will leave this course with a better understanding of the basic metallurgy involved; the different types of products and their attributes; the types of rolling mills and equipment; rolling theory; the latest technologies involved in hot rolling; safety aspects; production measures; maintenance practices and much more. There will be opportunities to discuss issues and solve problems during this interactive course. A full-day parallel session will be devoted to discrete plate and Steckel rolling.

WHO SHOULD ATTEND

Anyone who would like to expand his or her knowledge and understanding of hot strip mills, Steckel mills, plate mills and hot rolling. This includes electrical, mechanical, lubrication and metallurgical engineers; maintenance personnel; operators; and those responsible for quality assurance. Equipment manufacturers and service suppliers would also benefit from this course.

ORGANIZED BY

AIST's Hot Sheet Rolling and Plate Rolling Technology Committees.



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YOUNG PROFESSIONAL

Visit [AIST.org/byoyp](https://www.aist.org/byoyp) for more information.

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 26.25 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 credit in New York, Florida, North Carolina and Oklahoma.

REGISTRATION INCLUDES

Virtual event registration includes Zoom link to access live presentations and online link to download conference materials.

AIST MEMBERS
Virtual
US\$895

NON-MEMBERS
Virtual
US\$1,145

AIST.ORG

SCHEDULE OF EVENTS



Monday, 8 February 2021

8 a.m. EST
Introductions, Opening Remarks and Safety Share

8:30 a.m. EST
Supporting a Safety Culture

Robert Brock, Steel Dynamics Inc. – Flat Roll Group Columbus Division

This presentation will provide ideas for supporting the growth of a safety program in an effort to improve the safety performance of the steel industry.

9:30 a.m. EST
Break

9:45 a.m. EST
Overview of Rolling
Nancy Hake, NLMK Indiana

10:45 a.m. EST
Basic Rolling Theory
Yuli Liu, Quad Engineering Inc.

This presentation begins with basic concepts of rolling and then introduces the theories to calculate rolling force, torque and power. A common misunderstanding on gaugemeter control model is rectified. An interactive program will be used to demonstrate basic rolling theories.

11:45 a.m. EST
Lunch Break

12:45 p.m. EST
Metallurgical Basics/Application of Fundamentals to Hot-Rolled Processing/Products

John Speer, Colorado School of Mines

1:45 p.m. EST
Break

2 p.m. EST
Metallurgical Basics/Application of Fundamentals to Hot-Rolled Processing/Products (cont'd)

John Speer, Colorado School of Mines

3 p.m. EST
The Reheat Furnace

Bill Barraclough, Tenova Inc.

The presentation will address the different types of reheat furnaces used in the steel industry. It will cover the design aspects and systems that comprise the furnaces. Also, energy usage and efficiency will be discussed.

4 p.m. EST
Roughing Mill Area Equipment

Frank Beddings, Primetals Technologies USA LLC

An overview of the roughing mill equipment from the exit of the reheat furnaces to the entry of the finishing mill.

5 p.m. EST
Question-and-Answer Session

Tuesday, 9 February 2021

8 a.m. EST
Introductions and Safety Share

8:30 a.m. EST
Flatness With Profile Control

Eugene Nikitenko, U. S. Steel Research and Technology Center

This presentation will cover the following topics: 1. Flatness — definitions and measurements, and ASTM standards. 2. Fundamentals of strip buckling. 3. Relationship between flatness and strip profile. 4. Profile and flatness control.

9:45 a.m. EST
Break

10 a.m. EST
Maintenance and Reliability

Ken Hutter, Belden-Hutter Inc.

Good maintenance and reliability practices improve efficiencies, downtime control and overall cost.

11 a.m. EST
Drivetrain Design

Ken Hutter, Belden-Hutter Inc.

Drivetrain designs are influenced by many forces and interactions. Each component has a purpose along with its own design requirements.

Noon
Adjourn

Wednesday, 10 February 2021

HOT SHEET ROLLING TRACK

8 a.m. EST
Introductions and Safety Share

8:30 a.m. EST
Finishing Mill Equipment 1 and 2

Frank Beddings, Primetals Technologies USA LLC

An overview of finishing mill equipment from the entry of the finishing stands through the downcoilers.

9:45 a.m. EST
Break

10 a.m. EST
Finishing Mill Operations and Temperature Control

Ian Ward, Primetals Technologies USA LLC

A general presentation on the fundamentals of mill operations. Concepts covered are illustrated by examples.

11 a.m. EST

Mini-Mills

Mark Zipf, SMS group Inc.

Noon

Lunch Break

1 p.m. EST
Hot Rolling Defects

2 p.m. EST
Break

2:15 p.m. EST
Hot Rolling Defects (cont'd)

3:15 p.m. EST
Continued Developments in Hot Rolling

Mark Zipf, SMS group Inc.

4:30 p.m. EST
Question-and-Answer Session

PLATE ROLLING TRACK

8 a.m. EST
Plate Rolling Introduction and Safety Share

8:15 a.m. EST
Steckel Rolling — Process

Blane Vines, Nucor Steel Tuscaloosa Inc.

This presentation describes the Steckel mill rolling process.

9 a.m. EST
Steckel Rolling — Equipment

Blane Vines, Nucor Steel Tuscaloosa Inc.

This discussion will focus on the basics of the mill equipment unique to a Steckel mill operation.

9:45 a.m. EST
Break

10 a.m. EST
Discrete Plate Rolling — Process and Equipment

Corey Ivey, Nucor Steel—Hertford County

Noon

Lunch Break

1 p.m. EST
Plate Finishing Equipment

Eric Thokar

Description of equipment and processes used for plate finishing, including plate cooling, shearing, sidetrimming, inspection, marking and piling.

2 p.m. EST
Break

2:15 p.m. EST
Practical Aspects of Plate Leveling

The mechanism of stress realignment to flatten plates and the machines that accomplish that realignment are explained. The particular challenges presented by high-strength plates are addressed.

3:30 p.m. EST
Plate Heat Treatment

Joseph Stubenbort, Tenova Inc.

This presentation will provide an overview of continuing developments regarding heat treating technologies for carbon steel plate. Specific topics will include the basics of carbon steel plate heat treatment, and a description of the type of furnaces needed for the various processes, along with the associated combustion system and automation. The current technology regarding quenching and mathematical quench models will also be discussed.

4:30 p.m. EST
Question-and-Answer Session

Thursday, 11 February 2021

8 a.m. EST
Introductions and Safety Share

8:30 a.m. EST
Gauge and Width Control for Hot Rolling Mills

Reginald Snyder, TMEIC

This presentation is an overview of the concepts and control methods used in hot strip mills and plate mills for control of width and thickness.

10 a.m. EST
Break

10:30 a.m. EST
Descaling, Roll Cooling and Spray Issues in Hot Rolling

Lesli Peterson, Spraying Systems Co.

Topics cover spray nozzles and their role in descaling and roll cooling operations.

11:30 a.m. EST
Lunch Break

12:30 a.m. EST
Hot Strip Mill Downcoilers — Practical Considerations for Operation and Maintenance

Jose de Jesus, Xtek Inc.

A review of the operating sequence of a downcoiler, and the functions of each of the downcoiler components within that sequence. Attention is given to what matters for achieving coil quality and for maintaining the equipment to performance for consistent coil quality.

1:30 p.m. EST
Runout Table Cooling Technology

Stuart Hardcastle, Hatch Associates Inc.

An insight into the history and development of runout table cooling technologies and the challenges brought by today's market requirements.

2:30 p.m. EST
Break

2:45 p.m. EST
Roll Design/Roll Surface Quality

Chris Hrizo, WHEMCO Inc.

3:30 p.m. EST
Roll Shops Maintenance Area — State of the Art of Related Equipment

Alfredo Brambilla, Tenova Inc.

Whereas the core of the roll shop mission is to provide refurbished rolls surfaces, efficiently and accurately, as required by the rolling mill to produce coils with the required quality and productivity, the workflow in the roll shop includes also a number of other auxiliary tasks involving rolls, chocks and bearings handling. Whereas roll grinding is a process highly automatized when state-of-the-art roll grinders are available, other auxiliary tasks engage operators to a number of manually controlled activities, involving handling of and/or around heavy and large mechanical items. Tenova Pomini provides roll shops users with state-of-the-art machines and equipment that perform safely and efficiently such work tasks, which engineering and design are developed and rooted over an accurate risk analysis and respecting the most current industrial safety standards.

4:30 p.m. EST
Question-and-Answer Session and Closing Comments

5 p.m. EST
Conference Adjourn