

What You Will Learn

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, maintenance and reliability, and new technology. 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, and tours will be offered of sheet and plate rolling operations.

Who You Will Meet

Anyone who would like to expand their 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; management; commercial; and those responsible for quality assurance and safety. Equipment manufacturers and service suppliers would also benefit from this course.

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

Hotel Information

A block of rooms has been reserved at Courtyard by Marriott Starkville MSU at The Mill Conference Center. Please call the hotel at +1.662.338.3116 by 19 August 2022 to secure the AIST discount rate of US\$145 per night for single/double occupancy.

Upcoming Events

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

The Making, Shaping and Treating of Steel: 101
2-3 November
Syracuse, N.Y., 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

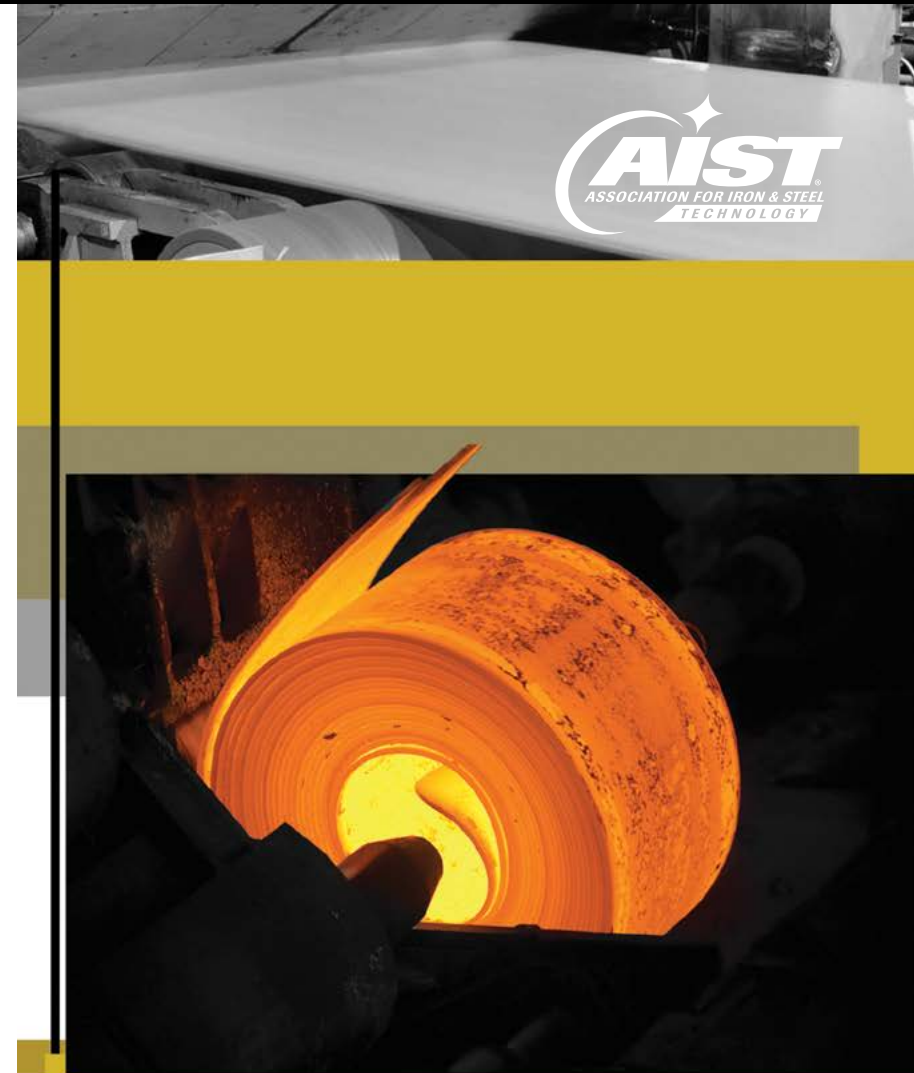
US\$1,195	US\$1,295
Before 8 August 2022	After 8 August 2022

Non-Members

US\$1,440	US\$1,540
Before 8 August 2022	After 8 August 2022



SCAN FOR MORE
INFORMATION



Hot Sheet and Plate Rolling Fundamentals

Practical Training Seminar

19-22 September 2022

Courtyard by Marriott Starkville MSU at The Mill Conference Center
Starkville, Miss., USA

aist.org

Sunday, 18 September 2022

4-6 p.m. Registration

Monday, 19 September 2022

7 a.m. Registration and Breakfast

8 a.m. Keynote Presentation, Jeff Jackson, Nucor Steel West Virginia

8:30 a.m. Supporting a Safety Culture, Robert Brock, Steel Dynamics Inc. – Flat Roll Group Columbus Division

This presentation provides a review of practices that contribute to a healthy safety culture.

9:15 a.m. Group Discussion on Safety, Moderator, Robert Brock, Steel Dynamics Inc. – Flat Roll Group Columbus Division

9:45 a.m. Break

10:10 a.m. Overview of Rolling, Nancy Hake, NLMK Indiana

11 a.m. 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.

Noon Lunch

1 p.m. Review of Metallurgical Basics, Nilesh Kumar, University of Alabama

Metallurgical fundamentals relevant to hot rolling and hot-rolled products will be presented.

2 p.m. Break

2:15 p.m. Application of Fundamentals to Hot Rolled Processing/Products, Nilesh Kumar, University of Alabama

3 p.m. The Reheat Furnace, Matt Druciak, Tenova Inc.

The presentation will discuss the various types of reheat furnaces used in the steel industry. It will briefly describe major design elements of each furnace type and their use and application. It will also give some typical performance data for each type.

4 p.m. Roughing Mill Area Equipment, Frank Beddings, Primetals Technologies USA LLC

An overview of Roughing Mill Equipment from the exit of the Reheat Furnaces to the entry of the Finishing Mill

5 p.m. Reception

Tuesday, 20 September 2022

7 a.m. Breakfast

8 a.m. Introductions and Safety Share

8:30 a.m. Flatness With Profile Control, Eugene Nikitenko, U. S. Steel Research and Technology Center

Presentation will cover the following topics: 1. Flatness definition, measurements and ASTM standards. 2. Fundamentals of strip buckling under applied compressive stress. 3. Relationship between flatness and strip profile. 4. Profile and flatness control.

9:45 a.m. Break

10 a.m. Roll Design Concepts, Chris Hrizo, WHEMCO Inc.

Roll performance is critical for production of high-quality hot band and plate. Evolving mechanical design features of modern rolling mills that address processing requirements of advanced flat roll products also govern innovation

in roll technology. Roll metallurgy for hot rolling applications optimizes important performance characteristics such as wear resistance, thermal response and damage tolerance.

11 a.m. Roll Failure, Possible Issues and Mitigation

Noon Boxed Lunch

1 p.m. Plant Tour of Steel Dynamics Inc. – Flat Roll Group Columbus Division or Nucor Steel Tuscaloosa Inc. 🏠

5:30 p.m. Reception

Wednesday, 21 September 2022

7 a.m. Breakfast

■ ■ HOT SHEET ROLLING TRACK

8 a.m. Introductions and Safety Share

8:15 a.m. 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 Downcoiler.

9:30 a.m. Break

9:45 a.m. Finishing Mill Operations and Temperature Control, Rajat Bathla and Cliff Chatman, Cleveland-Cliffs Burns Harbor

10:45 a.m. Mini-Mills, Jennifer, Grzyb, SMS group Inc.

This presentation will describe how mini-mill flat rolling technology originated and developed in concert with some corresponding developments in both steelmaking and casting technologies. It will go on to show how additional technological developments have enabled the production capabilities of flat products mini-mills to grow to where they are now able to produce broad ranges of steel grades with production volumes that are comparable to those of integrated hot strip mills

11:45 a.m. Lunch

12:45 p.m. Hot Strip Mill Surface Defects, Kevin Skero, Nucor Steel-Berkeley

An overview of the common defects created during the hot rolling process.

1:45 p.m. Break

2 p.m. Hot Strip Mill Surface Defects (cont'd), Kevin Skero, Nucor Steel-Berkeley

3 p.m. Continued Developments in Hot Rolling, Jennifer, Grzyb, SMS group Inc.

Marketplace demands for greater dimensional, property and surface characteristics of hot-rolled sheet continue to drive new equipment and operational developments in the hot strip mill. This presentation will provide an overview of a number of recent and some relatively new technologies that have been developed to enable hot strip mills to meet specific new product requirements.

4:15 p.m. Question-and-Answer Session

■ ■ PLATE ROLLING TRACK

8 a.m. Plate Rolling Introduction and Safety Share

8:15 a.m. Introduction to Coil and Discrete Plate Rolling, Tanya Ros, Cleveland-Cliffs Research & Innovation Center

Introduction to discrete plate manufacturing and mill configurations. Description of plates characteristics, properties, requirements and applications. Types of rolling practices, cooling technology, metallurgical phenomena occurring during plate hot rolling, process control and examples.

9:30 a.m. Break

9:45 a.m. Steckel Rolling – Equipment, Michael Cooke, SSAB Iowa Inc.

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

mill operation.

10:45 a.m. Steckel Rolling – Process, Michael Cooke, SSAB Iowa Inc.

11:45 a.m. Lunch

12:45 p.m. Plate Finishing Equipment, Qiulin Yu, Nucor Steel Tuscaloosa Inc.

1:45 p.m. Break

2 p.m. Practical Aspects of Plate Leveling

3 p.m. Plate Heat Treatment, B.J. Austin, Ebner Furnaces Inc.

4 p.m. Question-and-Answer Session

Thursday, 22 September 2022

7 a.m. Breakfast

8 a.m. Introductions and Safety Share

8:30 a.m. Gauge and Width Control for Hot Rolling Mills, Reg Snyder, TMEIC Corp. Americas

This instructional presentation is an overview of the concepts and control methods used in hot strip mills and plate mills for control of width and thickness. Practical considerations for quality issues in various mill configurations are provided.

10 a.m. Break

10:15 a.m. 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.

11:30 a.m. Lunch

12:30 p.m. Maintenance and Reliability, Ken Hutter, Belden-Hutter Inc.

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

1:30 p.m. Descaling, Roll Cooling and Spray Issues in Hot Rolling, Lesli Peterson, Spraying Systems Co.

This presentation covers spray nozzle basics for descaling and roll cooling.

2:30 p.m. Break

2:45 p.m. Runout Table Cooling Technology, Stuart Hardcastle, Hatch Associates Inc.

An introduction to runout table cooling technologies, features, challenges and defects.

3:45 p.m. Hot Strip Mill Downcoilers – Practical Considerations for Operation and Maintenance, Jose DeJesus, Xtek Inc.

This presentation includes discussion of basic downcoiler operation and the equipment in the downcoiler. The impact of maintenance practices on the machine and its function are also examined.

4:45 p.m. Question-and-Answer Session and Conference Adjourn

