Technical Collaboration Delivers Insight on Steel Mill Roll Lubrication

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Quaker Chemical Co-Author Selected to Receive AIST Award

CONSHOHOCKEN, Pa., July 15, 2015 /PRNewswire/ -- Quaker Chemical Corporation (NYSE: KWR) introduced roll lubrication to the 4-high Steckel mill at Nucor Steel Tuscaloosa Inc., which resulted in advantages such as significant extension to roll service life and a notable reduction in mill torque.

To further understand the impact of roll lubrication, a trial was performed which yielded the mechanism and advantages of backup roll lubrication in the reversing hot rolling mill:

- Fewer roll changes are needed with lubricated backup rolls, as the normal pressure and friction traction between the backup and work rolls are reduced, which translates to extended roll service lives and lower roll costs
- Roll bite lubrication lowers the mill separating force and torques by increasing the slipping zones and counteracting the length of the breaking zone
- Bite and roll slippage are no longer factors with the presence of lubrication after oiling time is schemed

Amy Beard, Quaker Chemical Key Account Business Analyst, and Qiulin Yu, Nucor Steel Metallurgy and Quality, published the data in a paper, **"Application of Hot Rolling Lubrication on a Reversing Coil/Plate Mill"**. The article was featured in the November 2014 edition of *Iron & Steel Technology* magazine (http://www.quakerchem.com/wp-content/uploads/pdf/about_us/press/hotrolling_platemill_article.pdf) produced by the AIST (Association for Iron & Steel Technology) and was presented at the AISTech Conference and Exposition.

In April 2015, the authors were recognized by the AIST as the recipients of the **2015 Richard J. Fruehan Award**. Established in 2005 to honor Dr. Richard J. Fruehan, a devoted teacher, an outstanding scientist, and a prominent contributor to the steel industry, the award is presented to an author of a process metallurgy technical paper judged to be the best of class by the AIST Metallurgy Technology Division. The award presentation will take place at the Materials Science & Technology Conference in October 2015.

For more information on Quaker Chemical and its full product line offerings for steel applications, please visit http://www.quakerchem.com/expert-experience/industry-expertise/steel/

About Quaker Chemical Corporation:

Quaker Chemical is a leading global provider of process fluids, chemical specialties, and technical expertise to a wide range of industries, including steel, aluminum, automotive, mining, aerospace, tube and pipe, cans, and others. For nearly 100 years, Quaker has helped customers around the world achieve production efficiency, improve product quality, and lower costs through a combination of innovative technology, process knowledge, and customized services. Headquartered in Conshohocken, Pennsylvania USA, Quaker serves businesses worldwide with a network of dedicated and experienced professionals whose mission is to make a difference. Visit quakerchem.com to learn more.

About Nucor:
Nucor and affiliates are manufacturers of steel products, with operating facilities primarily in the U.S. and Canada. Products produced include: carbon and alloy steel -- in bars, beams, sheet and plate; steel piling; steel joists and joist girders; steel deck; fabricated concrete reinforcing steel; cold finished steel; steel fasteners; metal building systems; steel grating and expanded metal; and wire and wire mesh. Nucor, through The David J. Joseph Company, also brokers ferrous and nonferrous metals, pig iron and HBI/DRI; supplies ferro-alloys; and processes ferrous and nonferrous scrap. Nucor is North America's largest recycler.

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