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Primetals Technologies supplies ERT-EBROS billet welding system for Yongfeng Steel bar rolling mill

- **Welded billets permit endless rolling with high product quality**
- **3-6% boost in plant output and utilization levels**
- **First use of ERT-EBROS in China**
- **System will pay for itself within 18 months**

Chinese steel producer Shandong Laigang Yongfeng Steel Corp. (Yongfeng Steel) has placed an order with Primetals Technologies to supply ERT-EBROS endless rolling technology for the company's existing bar rolling mill in Qihe, Shandong province. The aim is to boost plant output and utilization levels by three to six percent. The system welds together billets intended for rolling, thus enabling a continuous rolling process with a consistently high product quality. The new ERT-EBROS plant is scheduled to commence operation in the second quarter of 2017 and will pay for itself within 18 months. It is the first system of its kind in China.

Yongfeng Steel is a subsidiary of Yongfeng Group Co., Ltd. and is one of the most important steel producers in Shandong province. Its principal products are ribbed steel and wire rod. In 2015, the company produced around four million metric tons of crude iron and steel products. Yongfeng Steel's bar rolling mill has an annual production capacity of 1.2 million metric tons of steel rods. It processes billets with a square cross-section of 150x150 millimeters and produces reinforcement steel with diameters between 12 and 50 millimeters from low carbon and low alloy steel grades.

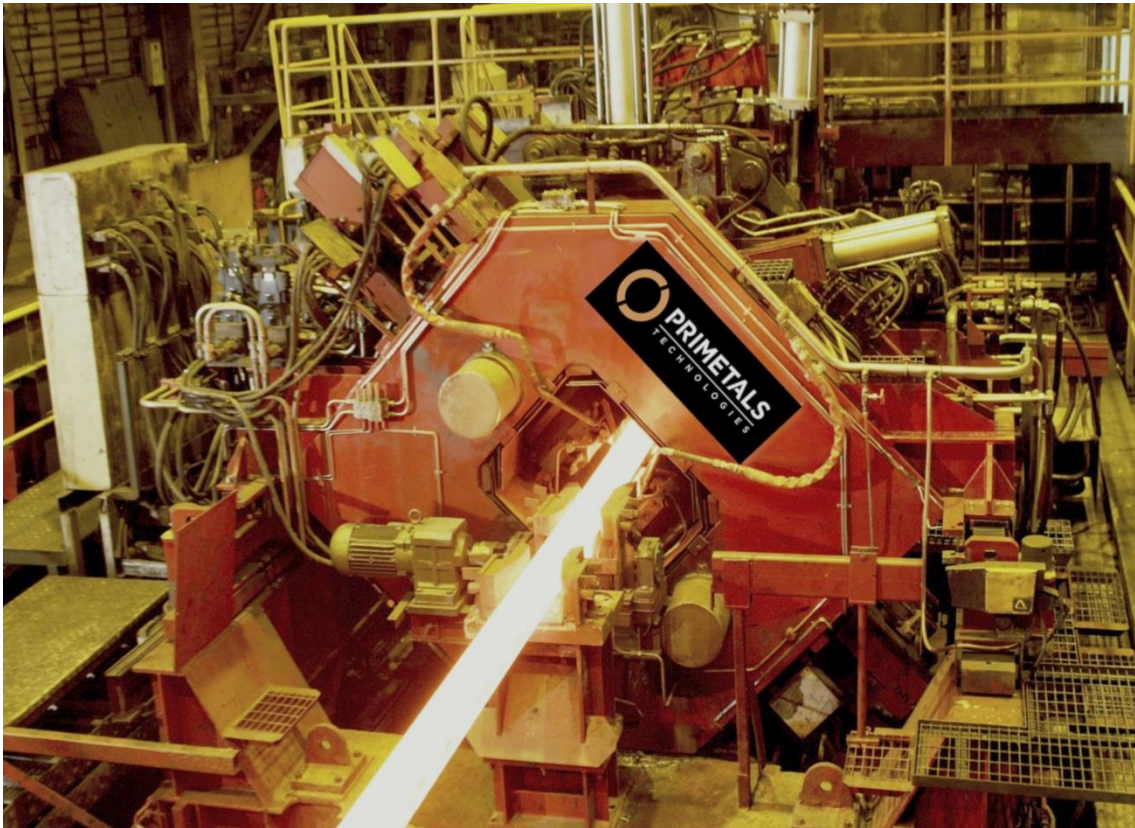
Primetals Technologies is responsible for project engineering and also assembly and commissioning supervision of the new equipment, and will be supplying the ERT-EBROS billet welding system, including a deburring station and equipment such as a roller table and a shear. The scope of supply also includes the fluid systems, the electrical equipment and automation system and also technology packages for control of welding.

The ERT-EBROS system welds consecutive billets together so that, once joined in this way, they can be processed in an endless rolling process. This increases output, cutting the time otherwise taken by two billets between rolling. Utilization of cooling bed capacity can be enhanced and production of customized coil weights is also possible. ERT-EBROS is installed between the reheating furnace and the first roll stand and uses a flash welding process with fast and intensive heating. This results in solid-state joining of the billets without the need for additional filler metal. A dynamic flash control system helps to control all the process parameters in real time and thus ensures high joint quality as well as reduced energy consumption and material loss.

After welding and head upsetting, joints are deburred on a self-cleaning deburring station. The deburring machine operates independently of the welding unit and so the cycle time is not increased. Active spatter protection protects the mechanical and electrical equipment from steel spatters. This is crucial for process quality, extends components' useful lives and facilitates maintenance. The core of the electrical system is the integrated high-frequency transformers. These compact components are extremely reliable and can perform an indefinite number of welding operations without maintenance. Each transformer is equipped with diodes that convert the high-frequency square-wave voltage into a stable, extremely flat DC voltage. The square-wave voltage is generated by converters with which the current can be controlled ten times faster than with thyristor circuits. A stable voltage and short control times are essential for a stable and repeatable process flow.

EBROS is a registered trademark of Steel Plantech Co.

ERT-EBROS is a registered trademark of Primetals Technologies in some countries



ERT-EBROS billet welding system from Primetals Technologies. A similar system is installed at the Chinese Shandong Laigang Yongfeng Steel Co (Yongfeng Steel) company.

This press release and a press photo are available at www.primetals.com/press/

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Primetals Technologies, Limited headquartered in London, United Kingdom is a worldwide leading engineering, plant-building and lifecycle services partner for the metals industry. The company offers a complete technology, product and service portfolio that includes integrated electrics, automation and environmental solutions. This covers every step of the iron and steel production chain, extending from the raw materials to the finished product – in addition to the latest rolling solutions for the nonferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI) and Siemens. Mitsubishi-Hitachi Metals Machinery (MHMM) - an MHI consolidated group company with equity participation by Hitachi, Ltd. and the IHI Corporation - holds a 51% stake and Siemens a 49% stake in the joint venture. The company employs around 7,000 employees worldwide. Further information is available on the Internet at www.primetals.com.

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