PRIMETALS TECHNOLOGIES

Press

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Continuous bloom caster and long-product rolling mills from Primetals Technologies started up at Hyundai

- **Installations are part of Hyundai's new special steel mill in Dangjin**
- **Continuous caster produces 1.1 million metric tons of blooms per year**
- **200th application of monitoring system Mold Expert**
- **Large bar mill produces annual total of one million metric tons of end products and billets for the small bar and wire rod mill**

In October 2015, a continuous bloom casting machine, a large bar rolling mill and a small bar and wire rod mill supplied by Primetals Technologies were started up at the new special steel mill of Korean steel maker Hyundai Steel in Dangjin. The caster is designed to produce 1.1 million metric tons of blooms per year. It features the 200th application of the monitoring system Mold Expert. The large bar rolling mill produces one million metric tons of end round products as well as billets for the small bar and wire rod mill. The order had been awarded to Primetals Technologies in early 2014. Both caster and large bar rolling mill were started up almost a month ahead of the scheduled date.

Hyundai Steel, situated in Incheon and Seoul, South Korea, belongs to the Hyundai-Kia Automotive Group and runs six production facilities in South Korea and a further one in China. At present, the company is constructing a new plant at the Dangjin site to produce special steels for the automotive industry. In future, bar and wire are to be produced here as primary material for engine and gearbox parts. Annual production of 400,000 metric tons of wire rod and 600,000 metric tons of straight bar and bar-in-coil is planned.

The four-strand continuous bloom caster from Primetals Technologies has an annual capacity of 1.1 million metric tons. The caster is equipped with mold-monitoring system Mold Expert. In combination with air mist spray cooling and interior-cooled rollers in the strand guidance system, further technology packages ensure uniformly high quality of the blooms cast. Still hot, these are then fed for direct use in

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the bar line. This saves energy during reheating and improves operating safety because there is no need for transport of blooms, for example by crane.

The large bar mill encompasses a duo reversing breakdown stand and a finishing train with rolling/sizing stands. The large bar mill also provides billets to be further processed in the small bar and wire rod mill, which Primetals Technologies also supplied. This combination mill has a capacity of 800,000 tons and is designed to roll 160 tons per hour. It includes a continuous roughing and intermediate mill feeding a sizing block supplied by Germany-based Friedrich Kocks GmbH & Co KG for production of bars, a rod outlet with a rod Reducing Sizing Mill (RSM) and also a bar-in-coil (BIC) outlet. Both the rod and BIC outlets have slow and fast cooling capability. The small bar and wire rod mill has the highest production rate for a combination mill, and is particularly designed for low-temperature rolling. This improves the metallurgical structure and mechanical properties of end products and enhances flexibility during the rolling operation.

Special mechatronics packages and an integrated automation solution ensure the necessary high product quality throughout the plant.

Continuous bloom caster from Primetals Technologies at Hyundai Steel in Dangjin, Korea

This press release and a press photo are available at

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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 9,000 employees worldwide. Further information is available on the Internet at www.primetals.com.