
London, December 21, 2017

Primetals Technologies receives FACs for four continuous casters from Formosa Ha Tinh Steel Co.

- **Three casters commissioned within just three days**
- **Two slab casters each produce 2.7 million metric tons of slabs per year**
- **Bloom caster can produce 1.5 million metric tons of blooms per year**
- **Casters are part of the largest greenfield project worldwide in recent years**
- **Billet caster also entered service as soon as liquid steel production was ramped up**

Within a period of three days in early June, Primetals Technologies commissioned three continuous casters for the Vietnamese Formosa Ha Tinh Steel Corporation, a subsidiary of the Taiwanese steel producer Formosa Plastic Group. All three casters started in fully automated mode with an automatic start of casting and Level 2 functions. The order covered two slab casters and one six-strand bloom caster ordered by Formosa Heavy Industries from Primetals Technologies at the end of 2012. The casters were installed in the new steelworks complex in Vung Anh Economic Zone, Central Vietnam, the largest greenfield project worldwide in recent years. The eight-strand billet caster ordered at the same time entered service two months later when the liquid steel production was fully up to speed. The final acceptance certificates for the casters have been issued in October and November.

Primetals Technologies supplied a pair of two-strand continuous slab casters for the new steelworks as well as one six-strand bloom caster. The two slab casters are each designed for the production of 2.7 million metric tons of slabs per year, made from low, medium and high carbon grades as well as peritectic steels. Slabs of between 900 and 1,880 millimeters in width and with thicknesses of between 210 and 270 millimeters can be produced. The bow-type casters with straight mold and segmented strand containment have a radius of ten meters. They are equipped with a SmartMold and Dynaflex mold oscillation device. To optimize the casting process and ensure high internal and surface slab quality, Primetals Technologies installed a series of technology packages, including the LevCon mold-level control system, the MoldExpert breakout detection system, DynaWidth for adjustment of the slab width and Smart Segments for rapid changes in slab thicknesses. A combination of the Dynacs 3D cooling

Primetals Technologies, Limited
A joint venture of Siemens, Mitsubishi Heavy Industries and Partners
Communications
Head: Gerlinde Djumljija

Chiswick Park, Building 11, 566 Chiswick High Road
W4 5YS London
England

model, the DynaJet spray cooling system and internally cooled I-Star rolls provide maximum flexibility in secondary cooling, which is an essential prerequisite to the high slab surface quality. The use of DynaGap Soft Reduction makes it possible to precisely determine the point of final strand solidification. This permits precise regulation of the roll gap and results in high internal slab quality. The project also included the entire basic and process automation systems of both slab casters.

The bloom caster has an annual production capacity of 1.5 million tons of blooms with dimensions of 260 x 300 and 360 x 450 millimeters. A number of different carbon and alloy steels can be cast as spring, forging, wire, tire cord and bearing steel. The bloom caster has been designed as bow-type caster with a radius of 14 meters and is equipped with a plate mold with a Dynaflex hydraulic oscillating device, a mold electro-magnetic stirrer (M-EMS) and DynaGap Soft Reduction technology.

The billet caster has an annual production capacity of 1.2 million tons of billets with square cross sections ranging between 130 x 130 and 180 x 180 millimeters and lengths of up to twelve meters. It is designed for the casting of a wide variety of different steel grades. Emphasis has been placed on low- and medium-carbon as well as on alloyed steel grades. The bow-type caster has a radius of nine meters and is equipped with a Diamold tube mold including a Dynaflex hydraulic oscillating device, an M-EMS and a final electromagnetic stirrer (F-EMS).

The strand guide and straightening zones in the billet and bloom casters are equipped with internally cooled rollers, while secondary cooling is by means of water and air nozzles. The Primetals Technologies scope of supply encompassed engineering and supply, including the basic and process automation systems as well as the supervisory service for installation and start up.



Continuous slab caster supplied by Primetals Technologies and installed at the new Ha Tinh Steelworks operated by the Vietnamese Formosa Ha Tinh Steel Corporation. The first slabs were produced at the plant in early June.

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

Contact for journalists:

Dr. Rainer Schulze: rainer.schulze@primetals.com

Tel: +49 9131 9886-417

Follow us on Twitter: twitter.com/primetals

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.