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Hot rolling mill from Primetals Technologies produces first coil in Vietnam for Formosa Ha Tinh Steel Co.

- **Production capacity 5.3 million metric tons of hot strip per annum**
- **Plant produces many grades of steel, up to API and TRIP grades**
- **Pair cross technology ensures optimal closed-loop control of profile and flatness**

Primetals Technologies has supplied a hot rolling mill to the new steel works in Vung Ang, Vietnam, which is owned by the Formosa Ha Tinh Steel Corporation (FHS). The first coil was rolled at the end of December 2015. The rolling mill produces a wide range of steel – from quality grades up to API and TRIP grades, and has a capacity of 5.3 million metric tons of hot strip per year. Primetals Technologies was responsible for all the mechanical equipment, and supervised the erection and commissioning. The stands in the finishing mill are equipped with pair cross technology for optimal closed-loop control of the profile and flatness.

FHS is a majority holding of the Formosa Plastic Group (FPG), the largest private company in Taiwan. The order to supply the rolling mill was awarded to Primetals Technologies at the end of 2012 by the Taiwanese company, Nan Ya Plastics Corporation (NPC), which is also a subsidiary of the Formosa Plastic Group. The hot rolling mill is part of an integrated steel works that is under construction in the Vung Ang free trade zone in the northern part of Central Vietnamese Province of Ha Tinh. It is currently the world's largest new construction project in the steel industry and the first large integrated steel works to be built in Vietnam. The first stage of construction is designed to produce around seven million metric tons of steel per year, and will expand FPG's industrial activities into the steel sector.

The hot rolling mill from Primetals Technologies is designed to produce 5.3 million metric tons of hot strip per year. Thicknesses range from 1.2 to 25.4 millimeters and widths from 900 to 1,880 millimeters. The maximum coil weight is 40 metric tons. The mill can handle many different steel grades, including CQ, DQ, DDQ and IF steels, API grades up to X80, and also DP and TRIP steels.

Primetals Technologies was responsible for the design, engineering and supply of the mechanical equipment. This includes a two-stand roughing mill, a seven-stand finishing mill, three down coilers, and facilities for the mill workshop. Four of the stands of the finishing mill are equipped with pair cross technology. Pair cross rolls consist of upper and lower work and backup rolls set at an angle to each other, so that each pair forms an X when viewed from above. This enables the roll gap to be set optimally for fine control of the profile of the rolling stock. Depending on the angle set, the crown of the strip can be varied within wider limits as would be possible with conventional four-high stands with work roll bending. Across the world, around 150 finishing stands are equipped with pair cross technology. Primetals Technologies also supervised the erection and commissioning of the plant, and conducted the staff training.



Finishing mill in the hot rolling mill from Primetals Technologies supplied to Formosa Ha Tinh Steel Co. in Vietnam. Four of the seven stands on the finishing mill are equipped with pair cross technology to optimize the progressive profile control. (Photo courtesy of FHS).

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