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Continuous caster and secondary metallurgy facilities by Primetals Technologies receive FACs from MMKI

- **Annual production capacity increases to four million metric tons of slabs**
- **Project included two-strand slab caster, twin ladle furnace, alloying station and dedusting system**
- **Expands product portfolio of MMKI**
- **Cross-section heat-pacing solution to coordinate steel production with casting operation**
- **Reduction of dust content in cleaned gas**

In late March, Ukrainian steel producer PJSC “Ilyich Iron and Steel Works of Mariupol” (MMKI) issued the Final Acceptance Certificates (FACs) for a two-strand continuous slab caster, a twin ladle furnace with an alloying station, and the associated dedusting system, all supplied by Primetals Technologies. The two-strand caster CC4 is designed to produce 2.5 million metric tons of slabs per annum. This increases MMKI's annual production capacity to around four million metric tons, as well as enhancing and expanding its product portfolio to include, for example, HC, UHC and ULC steels. A level 3 heat-pacing solution coordinates the steel production with the casting operation.

MMKI produces steel with three LD (BOF) converters. A new 150 metric ton twin ladle furnace from Primetals Technologies and the associated alloying station help to set the desired steel grades and the correct casting temperature. Due to an Industry 4.0-ready automation on Level 1 and Level 2, this can be done via pre-selectable process models. A transformer with a rated power of 28 MVA provides the electrical energy for the ladle furnace, enabling a heating rate of 4.5 °C per minute. This heating rate and the guaranteed energy consumption value have been over-fulfilled during start-up.

Primetals Technologies designed a dedusting system to clean the off gases from the ladle metallurgy facility. This improves the environmental situation in the city of Mariupol, where MMKI is located. The dedusting system reduces the dust content in the off gases to a level of 12 mg/m³ (maximum), whereas the Ukrainian standards require up to 50 mg/m³ and the European standards up to 30 mg/m³.

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The equipment order for the continuous slab caster covered all the installations from the ladle turret and the tundish car through to the exit zone with its weighing, torch cutting, marking and deburring machines. The caster from Primetals Technologies has a machine radius of nine meters and a metallurgical length of 29.8 meters. It casts slabs with thicknesses of 170 and 250 millimeters in widths ranging from 900 to 1,550 millimeters. The maximum casting speed is 2.2 meters per minute. It processes peritectic and peritectic alloyed steels, low, medium, high and ultra-high carbon grades, as well as medium-carbon alloyed steel. The caster is equipped with automatic LevCon mold level control, a straight, cassette-type Smart Mold with the DynaWidth technology package to automatically adjust the width of the slab online, and the DynaFlex mold oscillator. The strand guide is equipped with Smart Segments and I-Star rollers. DynaGap Soft Reduction, the Dynacs 3D secondary cooling model, and DynaJet nozzles was also installed, making it possible for MMKI to produce a wide variety of high-quality grades with improved interior quality of the slabs.

MMKI is one of the largest iron and steel works in Ukraine. The company produces a wide range of flat products made of carbon, low-alloyed and alloyed steel grades for various applications. These include heavy plates for pipelines, shipbuilding, pressure vessels and the construction industry, as well as hot and cold rolled plates and coils.



Slab caster CC4 from Primetals Technologies at PJSC “Ilyich Iron and Steel Works of Mariupol” (MMKI), Ukraine.

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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