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Tosyali Holding orders second slab caster from Primetals Technologies

- **Will be delivered to Bethioua, Algeria, and combined with a new hot-strip mill**
- **The order includes Flow Master, which is an electromagnetic stirring and braking system, Level 2 automation package, and Through-Process Optimization (TPO) – a comprehensive quality tracking system**
- **Thanks to the “Connect and Cast” concept, the startup phase is quick and effective**

Turkish-based Tosyali Holding recently ordered a new slab caster from Primetals Technologies. Tosyali is aiming to expand in the Algerian market by implementing the slab caster together with a new hot-strip mill at its site in Bethioua, located in the north-western part of Algeria. Started in 2013, this steel plant employs 4,000 people. The company has a 70 percent share of the Algerian steel market.

The commissioning of the slab caster is scheduled for summer 2024. Tosyali’s recent positive experiences from other projects were decisive when choosing Primetals Technologies as a supplier: In 2020, the Turkish company ordered two EAF Quantum electric arc furnaces, a twin vacuum-degassing plant with oxygen blowing, and a 2-strand slab caster for its site in Iskenderun, Turkey. The new casting machine in Algeria will have the same design and settings as the one in Iskenderun.

Significant capacity increase

The 2-strand slab caster has a radius of ten meters and a metallurgical length of 25 meters. With a capacity of 3.4 million tons of qualified slab per year, it will produce slabs ranging in thickness from 200 to 250 millimeters and in width from 900 to 1,800 millimeters. Casting speeds will be up to 1.6 meters per minute. The mold level is controlled by LevCon, an automatic mold-level control system with "autostart" casting functions and auto-adaptive dynamic bulging compensation. Another important feature is Flow Master – combined electromagnetic stirring and breaking in the mold, resulting in high internal strand quality at high casting speeds.

Consistent steel quality

Sophisticated automation systems from Primetals Technologies make sure the casting machine is optimized for both current and future needs. The Level 2 automation package ensures high and consistent quality throughout the process. DynaPhase, a thermodynamic phase transformation model, uses parameters like thermal enthalpy, thermal conductivity, and density to calculate how the liquid steel

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is composed and how it will behave during solidification. Dynacs 3D, a secondary-cooling model, calculates the full 3D temperature profile at any position along the strand to achieve optimal adjustment of secondary-cooling setpoints. At the same time, this model reveals the point of final strand solidification for best possible control of cooling. DynaGap SoftReduction 3D, a fully automatic roll-gap control system, allows dynamic soft reduction to minimize centerline segregation for improved internal strand quality.

In addition to these systems, the 2-strand slab caster will also feature the Mold Expert Fiber technology, which increases plant availability and cuts the time needed for maintenance. While enabling detailed monitoring of the processes taking place in the caster mold, this systems' core aim is to alarm operators to the possibility of a caster-mold breakout at the earliest possible stage.

Another key feature to this slab caster is the comprehensive quality tracking system Through-Process Optimization (TPO). An important part of TPO, Through-Process Quality Control has the following main tasks: inspecting slabs, analyzing root causes for defects, tuning the automated quality rating, process optimization, and recording and visualizing data.

Quick startup phase

To ensure a fast and trouble-free startup phase, Primetals Technologies uses the well-established "Connect and Cast" concept, which is included in this slab caster order. Consisting of defined interfaces between hardware, mechanics, and automation systems, this concept makes sure that the right parameters are in place when the casting machine is switched on. This leads to a quick startup phase in which slabs can be rolled and sold right away.

Tosyali Holding is part of Tosyali Group, which also operates a steel plant in Osmaniye, Turkey as well as a DRI direct hot-charge melting plant in Algeria. The company also runs several rolling mills and is well established in the markets for flat products and welded pipes.



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Representatives from Tosyali and Primetals Technologies. From left to right: Franz Gartner, Cenk Derinkök, Fuat Tosyalı, Aashish Gupta, Suhat Korkmaz, Tufan Songüler, and Bernhard Gabriel.

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