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PRESS RELEASE

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SMS group supplies continuous caster with Industry 4.0
technology for high-quality steel grades

Shandong Iron & Steel orders continuous caster for ultra- wide medium slabs from SMS group

Shandong Iron & Steel Group Co Ltd, Rizhao, China, has placed an order with SMS group (www.sms-group.com) for the supply of a continuous caster for ultra-wide slabs. The single-strand caster is designed for an annual production of 1.5 million tons of steel slabs with widths of up to 3,250 millimeters and 150 millimeters thickness. On the caster, structural steel grades as well as micro- and low-alloy steel grades will be produced. Peritectic grades will make up more than 45 percent of the overall production. Commissioning is scheduled for the end of 2018.

In the future, Shandong Steel will measure and align molds and segments using the HD LASr assistant system developed by SMS group. Perfect alignment between molds and segments has a strong influence on slab quality.

Thanks to its three-dimensional laser measuring system and an intuitive operating concept, HD LASr ensures precise and reliable recording as well as a meaningful evaluation of the measured objects.

The molds will be treated with UNIGUARD™, a plasma-ceramic coating which provides for a mold service life that is four times longer than with conventional coatings.

For this caster, SMS group will supply an HD mold^{TC} (TC – thermocouples). Furthermore, the narrow sides will be equipped with HD mold^{FO} (FO – Fiber Optical sensors) and the Breakout Prevention Assist and Mold Temperature Assist systems.

Breakout Prevention Assist reliably prevents break-outs resulting from stickers in the mold and in this way ensures effective protection and high availability of the plant. Mold Temperature Assist provides two- and three-dimensional information on distribution of the heat dissipation, alignment of the submerged entry nozzle, stirring effect and the contact between strand shell and copper plates.

Additionally, the mold will be equipped with HD mold^{FO} copper plates that detect signals by means of optical fibers. More than 500 measuring points are distributed across the entire height of the mold. Direct visualization of the local strand shell thickness and the respective thickness of the liquid and solid layers of mold powder is only possible using HD mold^{FO}. This provides for a deeper understanding of the solidification process.

SMS group will supply the entire X-Pact® electrical and automation systems for the continuous caster, the technological control systems (Level 1) and the technological process models (Level 2).

Furthermore, the plant will be equipped with Internet of things (Industry 4.0) technologies newly developed by SMS group providing for intelligent processing of plant data and automation of processes. Based on the steel grades to be produced, the X-Pact® TechAssist system automatically selects the optimum technological parameter

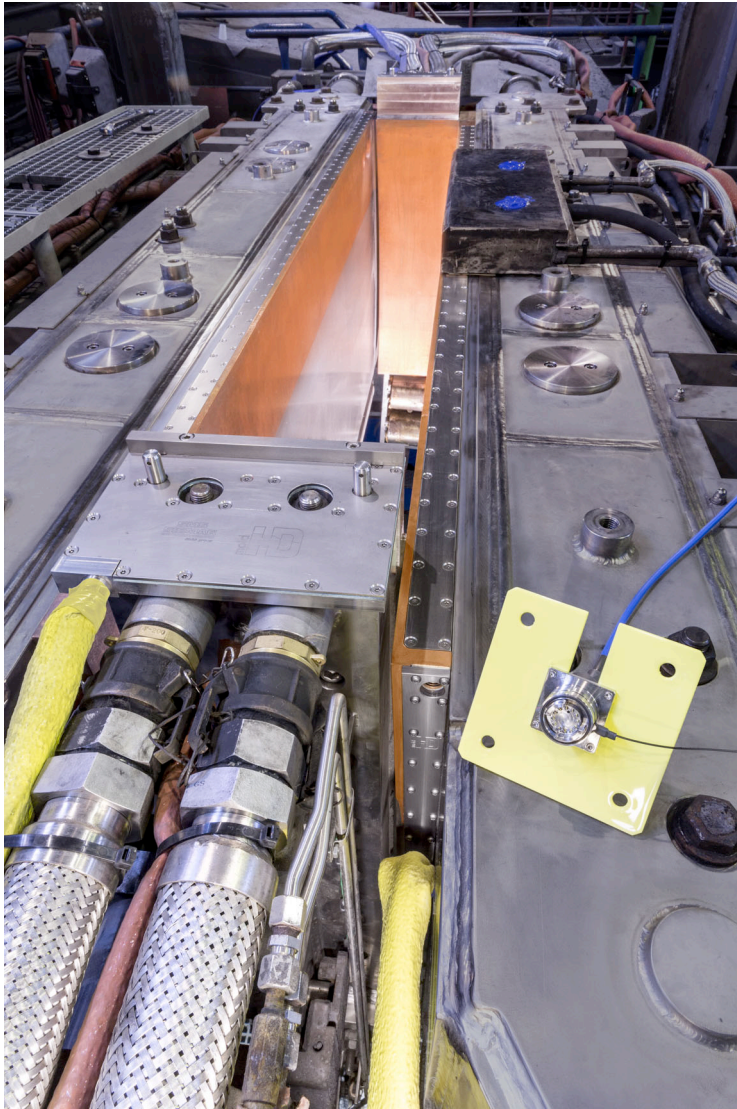
settings for the metallurgical process. X-Pact® Process Guidance automatically provides all relevant process information, prompts and operator screens at the right time. All plant control and maintenance functionalities can be performed comfortably at an operator station. X-Pact® Business Intelligence summarizes relevant data from different systems and enables interaction with dynamic applications and dashboards.

The SMS group scope of supply furthermore comprises training of the customer personnel, local manufacturing supervision, installation and installation supervision as well as commissioning supervision.

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Reliable measurement of continuous caster segments and molds using the HD LASr plant assistant system from SMS group.



With the HD mold^{FO} from SMS group, among other things the strand shell thickness can be visualized.

The SMS group is a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry. Its 14,000 employees generate sales of over EUR 3.3 bn.