

Phone: +49 211 881-4449
Fax: +49 211 881-774449
Mobile: +49 151 40226502
E-mail: thilo.sagermann@sms-group.com
Thilo Sagermann

PRESS RELEASE

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Steckel mill stand for 1.3 million tons per year

Shandong Rizhao orders Steckel/plate mill from SMS group

Shandong Iron & Steel Group Rizhao Corp. Ltd. (Shandong Rizhao) has placed an order with SMS group (www.sms-group.com) for the supply of a Steckel/plate mill. The new plant, to be built in Rizhao in the Chinese province of Shandong, is scheduled to go on stream in 2019. The order comprises the complete engineering package, mechanical key equipment, all electrical and automation systems as well as process know-how.

The Steckel/plate mill will be designed for an annual output of 1.3 million tons of heavy plate. It will be able to produce plate between 4 and 50 millimeters thick and from 1,650 to 3,250 millimeters wide. The product range will include carbon steels, quality steels, low-alloy steels, grades for shipbuilding, bridge and pressure vessel construction, for weatherproof and wear-resistant plates as well as tube/pipe grades to API standard.

The slabs used as feedstock for the rolling mill will be produced by a new continuous caster also to be supplied by SMS group. (see press release of February 14, 2017) Thanks to the high slab weight of 57 tons, the envisaged output of 1.3 million tons per year can be achieved with only one mill stand. The slab width of 3,250 millimeters

corresponds to the maximum plate width. Therefore, no broadsiding passes are needed.

The rolling line will comprise a Steckel mill stand with a connected edger at the entry side. The first passes are simple reversing flat passes. Rolling stock of a thickness of 25 millimeters or less will be coiled in the Steckel furnaces to keep the specified temperature. The mill stand will allow Shandong Rizhao to roll strips up to a length of 600 meters, which will be divided to mother plate lengths of maximum 50 meters by a “flying” cross-cut shear.

The four-high reversing stand will have a rolling force of 90 MN. To set the desired strip geometry, the mill stand will be equipped with state-of-the-art actuators. These will include, in addition to hydraulic roll adjustment, CVC[®] plus equipment with integrated work roll bending. The vertical edger will feature fully hydraulic roll adjustment with integrated width control (AWC). During the coiling operation in the furnace, Steckel loopers will keep the strip tension constant, ensuring high process stability.

For plate cutting, the mill will be equipped with two shear lines, each comprising one double-side trimming shear and one cross-cut shear. One line will be designed to cut plates up to 50 millimeters thick, the other one for plates up to 25 millimeters thick.

X-Pact[®] electrics and automation

SMS group will also supply X-Pact[®] electrical and automation systems for the entire plant. At Level 0, this will comprise sensor technology, technological measuring devices as well as converters for the main drives and process-relevant auxiliary drives.

The Level-1 automation system will be completely based on state-of-the-art X-Pact[®] technology. The operating concept X-Pact[®] Vision will be implemented according to the latest ergonomic findings. This will allow the operator to use the system most intuitively and achieve best possible process guidance.

The Level-2 process automation system covers all technological process models from pass schedule calculation (PSC[®]) to profile and flatness control (PFC) and further to the higher-level material tracking system (MTS).

Prior to shipment, the X-Pact[®] electrical and automation systems will be prepared in a Plug & Work integration test to speed up the commissioning process on site. An international team of experts will handle the implementation, seeing to it that the plant will be commissioned according to schedule.

Product quality analyzer

The supply package furthermore includes a product quality analyzer (PQA) to be provided by MET/Con, a company of SMS group. The PQA system collects and evaluates quality-relevant process parameters along the whole process chain from steelmaking to the final product. These process parameters may be measured values and incidents, or more complex criteria which may also be used as a basis for quality assessment. In addition, MET/Con will support the customer Shandong Rizhao with its extensive expertise and render production assistance for high-quality and demanding plate grades.

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Steckel/plate mill.

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.