

PRESS RELEASE

Düsseldorf, June 28, 2006

Order for SMS Meer GmbH

Baosteel orders large-diameter pipe mill

Baoshan Iron & Steel Co. Ltd., the largest steel complex in China, also ranked among the six largest steelmakers worldwide, has placed an order with SMS Meer, Mönchengladbach, Germany, for the supply of machines and equipment for a new large-diameter pipe mill.

With this new investment, Baosteel will enter the booming market for large-diameter gas and oil pipes in the near future.

The pipe mill is designed for an annual capacity of around 500,000 t and will be erected in Shanghai. Erection and commissioning of the complete plant are scheduled for 2007. On completion, this pipe mill will be internationally one of the most modern of its kind.

The new mill will be used to produce longitudinal SAW pipes with diameters from 508 to 1,420 mm and wall thicknesses up to 40 mm in lengths of max. 18.3 m. The use of 18.3-m-long pipes reduces the laying costs in the field, as around 50 % less seams have to be welded compared with the pipe lengths of 12 m conventionally used. The pipes manufactured in grades from X52 up to X100 far surpass not only the demands of the API 5L standard, but also satisfy the requirements of all other international standards.

SMS Meer is to supply all the main machines and key components for the new large-diameter pipe plant. This includes a plate edge miller, plate-edge crimping press, forming section consisting of a U-ing and an O-ing press, tack welding machines, two expanders, hydrostatic pipe tester, engineering for the transport facilities and the systems for the electrical control of the whole plant.

All the machines and equipment are linked by interconnecting longitudinal and cross-transfer conveyor systems optimized to protect the pipes and minimize noise.

The key technology in a large-diameter pipe plant is the forming process that essentially determines the product mix that can be manufactured with respect to material grades, dimensions and productivity. The UOE process is employed in this plant. In the UOE process, the plates with their milled and subsequently crimped edges are formed over their whole length in the U-ing followed by the O-ing press. This results in an open-seam pipe with plane-parallel edges ready for welding. The O-ing press operates with a press force of 720 MN.

Apart from the forming process and the pipe welding, the mechanical expander has a crucial influence on the pipe quality.

The mechanical expander is used to straighten and size the pipes from the inside. By gradual cold forming with an expanding head inside the pipe, creating a plastic deformation of between 1.0 and 1.5 %, the pipes are sized and straightened over their whole length from the inside. This internal sizing simplifies the later laying of the pipes as the cross-sections are optimally matched. This applies even if pipe sections have to be cut in the field, as the pipe sizing is performed over the whole pipe length. This deformation of the pipe, during which the yield strength of the material is exceeded, subjects the pipe body and weld seam to an extreme load such as no longer occurs later in the laid pipeline. In addition, this deformation compensates the intrinsic stresses created in the pipe during the forming process.

In order to test the pipe quality, extensive non-destructive tests are performed in addition to the hydrostatic test. With the hydrostatic pipe tester, the pipes are subjected to an internal pressure close to the yield strength and significantly above the later working pressure of the line. The whole weld seam is ultrasonically tested and all weld seam ends are subjected to X-ray testing.

The automation of the whole pipe mill is based on a decentralized control concept that guarantees independence of the individual systems, and hence ensures a high availability. Integration of the individual systems into a complete interconnected operation is ensured by networking within the control level.

Quality-relevant data recorded within the individual production and test processes are stored redundantly in a higher-ranking computer system. This data stock offers the possibility of certification for each individual pipe according to the requirements of the respective standards.

The software components for automation of the pipe mill are produced by SMS Meer for the machines and the transport facilities. Here the many years of experience in the field of manufacturing machines and plants for pipe production can be exploited, and the existing program resources continuously further developed.

The whole production and test process in this modern, automated pipe mill therefore guarantees pipes of the highest quality with the outstanding physical and mechanical properties demanded for gas and oil pipelines today.

SMS Meer GmbH forms part of the Tube, Long Product and Forging Technology Business Area of the SMS group.

(79 lines with max. 55 letters)

SMS GmbH is the holding for a group of companies internationally active in plant construction and mechanical engineering relating to the processing of steel, non-ferrous metals and plastics. The group is divided into the Business Areas of Metallurgical Plant and Rolling Mill Technology, Tube, Long Product and Forging Technology and Plastics Technology. In the year 2004 some 9,500 employees worldwide generated a turnover of about EUR 2.20 bn.