Baosteel Zhanjiang commissions high-performance hot strip mill

Ecoplants components guarantee high economic efficiency while improving environmental protection

Sieflex®-HT high-performance spindles installed in Baosteel Zhanjiang’s new hot strip mill allow high rolling torques to be transmitted.

Chinese Baosteel Zhanjiang Iron & Steel Co. Ltd. has successfully commissioned its new high-performance hot strip mill supplied by SMS group.

The hot strip mill installed at Baosteel’s new steelmaking location in Zhanjiang in the south of
China has an annual capacity of 5.5 million tons. It has been designed to produce hot strip with final thicknesses between 1.2 and 25.4 millimeters and strip widths from 800 to 2,100 millimeters.

The product portfolio ranges from soft deep-drawing grades to high-strength construction steels and further to tube/pipe grades. Based on an optimized layout, the new hot strip mill consists of a slab sizing press, one two-high and one four-high reversing roughing stand, each with a flanged-on edger, seven CVC® plus four-high finishing stands, a laminar strip cooling system and two hydraulically operated coilers.

Thanks to the numerous incorporated Ecoplants technologies, the rolling mill sets a new benchmark in terms of economic efficiency of hot strip production. Ecoplants technologies from SMS group combine ecology and economy, as they reduce energy consumption and/or increase the yield.

One of the Ecoplants solutions implemented in the roughing mill is the slab sizing press. With the aid of this machine, the slab width can be flexibly adapted to facilitate the coordination between the continuous caster and the hot strip mill. Thus the slab sizing press supports hot charging of slabs, contributing to a distinct reduction in energy consumption. Using the slab sizing press offers the additional advantage that the output of the upstream continuous caster can be increased.

Key features of the finishing mill are the newly developed Sieflex®-HT high-performance spindles. The hot strip mill for Baosteel Zhanjiang is the first in China to have high-performance spindles in all finishing stands. Especially in the first finishing stands such spindles allow to transmit higher rolling torques and rolling forces as are required for the production of high-strength hot strip. Additionally, the new Sieflex®-HT spindles allow for the installation of work rolls with optimized diameters. This also contributes to reduced energy consumption.

Other Ecoplants components incorporated in the mill
include the CVC® plus system (Continuously Variable Crown) with integrated work roll bending as well as profile, crown and flatness control, hydraulic differential-tension loopers in the finishing mill and thermal insulation hoods between the roughing and the finishing mill to reduce heat losses of the strip.

For strip cooling, which is a decisive metallurgical tool of the plant, SMS group implemented a concept tailor-made for Baosteel Zhanjiang’s product range. The combination of zones coming with reinforced laminar cooling and standard cooling groups provides for high cooling rates and flexible cooling strategies, allowing a wide product portfolio to be produced in the most efficient way.

_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._