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One of the most modern facilities worldwide for high productivity, cost efficiency and product quality

PT Krakatau Steel in Indonesia places order for high-performance hot strip mill with SMS group

PT Krakatau Steel, Indonesia, has placed a turnkey order with SMS group (www.sms-group.com) for the supply of a high-performance hot strip mill. The order comprises the entire process equipment, ranging from the slab yard to the coil yard, the electrical and automation systems, the auxiliary facilities such as water management, roll shop and crane systems, and the construction of the pertaining infrastructure and bays. Planning and execution of building construction and civil engineering is carried out by the Indonesian consortium member, PT Krakatau Engineering.

The hot strip mill is scheduled for commissioning in early 2019 in Cilegon on the Indonesian island of Java. This is where PT Krakatau Steel (PTKS) operates an integrated steel plant for which SMS group had supplied a hot strip mill, among other equipment, in the 1980s.

The new hot strip mill designed for strips with a maximum width of 1,650 millimeters will have a capacity of 1.5 million tons per year in its first expansion stage. Key components are a reheating furnace, a four-high reversing roughing stand with edger, the six-stand finishing mill, a laminar strip cooling section, a universal coiler and the coil

transfer system. At a later stage, the annual production can be increased to up to 4.0 million tons per year.

The hot strip mill is equipped with numerous technology packages and Ecoplants components required for the economic manufacture of high-quality hot strip. Thanks to the utilization of low-emission burners, the walking beam furnace achieves low pollutant values, which are monitored constantly via an online system. The four-high reversing roughing stand operates with the technology for camber-free rolling, which enables the avoidance of strip camber due to temperature or thickness rundowns. The temperature losses in the transfer bar are reduced by newly developed and highly efficient heat retention hoods between the roughing stand and the crop shear.

The finishing stands are equipped with the CVC plus® system (Continuously Variable Crown) with integrated work roll bending and hydraulic roll-gap adjustment systems, enabling strips to be produced with very close thickness, profile, contour and flatness tolerances. The Ecoplants components in the finishing mill include the SIEFLEX® HT high-performance spindles, the design of which allows the transmission of higher rolling torques with smaller work roll diameters. A further innovation is a highly efficient two-stage work-roll cooling system, operating with various pressure stages.

As regards the X-Pact® electrical and automation package, SMS group supplies the entire plant automation, the drive technology and the electrical power distribution. On Level 0, this equipment comprises the sensor technology, the technological measuring devices, the main and auxiliary drives, as well as switchgear units and compensation equipment. The Level 1 automation systems are designed completely on the basis of the most up-to-date X-Pact® embedded technology, involving an extremely efficient and, at the same time, lean hardware design.

The innovative operating concept X-Pact® Vision is designed according to state-of-the-art ergonomic knowledge and enables the operator to act intuitively to achieve optimum process control. The Level 2 process automation contains the technological process models, ranging from the pass schedule calculation PSC (Pass Schedule Calculation) via the profile, contour and flatness model PCFC® (Profile Contour Flatness Control) up to the cooling section model CSC (Cooling Section Control) and temperature control. Likewise, SMS group supplies a microstructure model MPM (Material Property Model), which determines the mechanical properties of the products and supports and simplifies the introduction of new materials. Within the framework of Industry 4.0, a powerful PQA (Product Quality Analyzer) system will continuously monitor all process and product quality parameters.

The new hot rolling mill will be one of the most modern facilities of this type worldwide, enabling PTKS to fulfill highest demands regarding quality, productivity, and production cost. As such, it will be the backbone for their further expansion and success in a fast-growing market.

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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.

Finishing stands for the production of top-quality hot strip.
Layout of new hot strip mill for PTKS.