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Successful commissioning of continuous annealing line from SMS Siemag at PRO-TEC

PRO-TEC (PRO-TEC Coating Company), USA, successfully started hot commissioning of the continuous annealing line supplied by SMS Siemag and installed at the works in Leipsic, OH, USA. The line will be used to produce ultra-high strength steel strips.

The line has been designed to produce almost 500,000 tpy of steel strips for high-strength automotive structural components, which improve the safety of vehicles while reducing their weight at the same time.
The annealing process and special cooling strategies with particularly high cooling rates reduce strain hardening from the rolling process, enabling the sophisticated mechanical properties in the material to be set exactly as required.

Besides the design and manufacture of the mechanical equipment, the complete electrical and automation package was part of the supply scope of SMS Siemag. The high-capacity annealing furnace with integrated ultra-fast cooling system was provided by Drever International, also a company of the SMS group. For particularly high cooling rates, which allow the manufacture of martensitic grades and ultra-high-strength multiphase steels, a water-quench system has been integrated as an additional feature. A further highlight is the nickel flash-coating system, which is used for coating the strip with nickel for special applications in the automotive industry.

The line has been designed for strips with gages from 0.6 to 2.3 mm and widths ranging from 700 to 1,650 mm. The process speed is 140 m/min, whereas in the entry and exit sections 200 m/min can be attained. The grades to be manufactured are CQ, DQ, DDQ, EDDQ, HSLA and further AHSS grades (DP, MP, CP, BH, TRIP, MS).

Essential components of the line are two uncoilers, a welding machine, vertical entry accumulator, cleaning section, the Drever furnace, a water-quench system, pickling section, nickel flash-coating section, skin-pass mill, tension leveler, intermediate loop tower, inspection station, DUMA-BANDZINK oiler, flying shear and two recoilers. The line layout makes provision for future upgrades in heating and cooling capacities and the addition of a roll coater for post-treatment and of a side trimmer.

PRO-TEC is a joint venture between United States Steel Corporation, USA, and Kobe Steel, Ltd., Japan, with several strip processing lines in Leipsic, Ohio. As a leading supplier of coated steel strip for the extremely demanding automotive industry, PRO-TEC will be expanding its range of products with the new
facilities and supply the automotive industry also with cold-rolled high-strength and ultra-high-strength steel strips.

High-capacity annealing furnace with integrated water-quench system.

SMS Siemag AG and SMS Meer GmbH are both companies of SMS group which, under the roof of SMS Holding GmbH, consists of a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry.