

PRESS RELEASE

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Shandong Rizhao grants SMS group FAC for high- capacity hot strip mill



Roughing mill stand R2 with edger.

Chinese steel producer Shandong Iron & Steel Rizhao has issued the Final Acceptance Certificate for the new high-capacity hot strip only seven months after rolling the first coil.

The hot strip mill is part of a large-scale order which the Chinese steel producer had placed with SMS group. The complete order comprises the hot strip mill, a coupled pickling line and tandem cold mill (PL/TCM), two continuous annealing lines (CAL) and a hot-dip galvanizing line (HDGL). The production plants

are located on the eastern coastal area of China in the province of Shandong.

The high-capacity hot strip mill has a maximum annual capacity of 4.8 million tons and produces strips with a maximum width of 1,900 millimeters. The final strip thicknesses range between 1.2 and 25.4 millimeters. The main mill equipment includes a descaler in the roughing mill, a slab sizing press, a two-high reversing roughing mill stand, a four-high reversing roughing mill stand with edger, heat panels on the delay roller table to the finishing mill, a crop shear, a descaler at the entry side of the finishing mill, seven finishing mill stands, a laminar strip cooling section and three down coilers for the finish-rolled hot strip.

This mill configuration provides Shandong Iron & Steel Rizhao high flexibility in hot wide strip production. One reason for this flexibility is the slab sizing press at the entry of the hot strip mill which achieves width reductions of up to 350 millimeters. The two high-capacity roughing mill stands allow Shandong Iron and Steel Rizhao a great variation in pass schedule calculation. The heat panels on the delay roller table reduce temperature losses in the transfer bar resulting in decreased energy costs and making for more stable rolling in the finishing train. The powerful finishing stands are able to roll with forces of up to 52 MN (F1-F4) and 40 MN (F5-F7). For thickness control all finishing mill stands are equipped with hydraulic screwdown actuators. The proven CVC[®]plus system (Continuously Variable Crown) with integrated work roll bending ensures a high-quality strip profile, strip contour and strip flatness.

The PCFC[®] system (Profile, Contour and Flatness Control) calculates the correct shifting position of the specially ground work rolls and the setup values for work roll bending, resulting in the ideal roll gap for each strip rolled. By taking into account the varying rolling conditions, narrowest geometrical tolerances are guaranteed, providing for efficient further processing of the hot strip in the downstream coupled pickling line and tandem cold mill and in the strip processing lines.

Before the final acceptance the required dimension range of strip thicknesses between 1.2 and 25.4 millimeters and strip widths of up to 1,900 millimeters had been successfully rolled. The grades rolled included steels for the automotive industry, for construction applications as well as X80 pipe grades. Thanks to the proven profile, contour and flatness control (PCFC[®]) system and the sophisticated CVC[®] plus actuators, the geometric target values specified for the thickness profile and the strip flatness were safely achieved.

The customer Shandong Iron & Steel Rizhao commented very positively on the trouble-free commissioning of the high-performance hot strip mill: “With the plant engineering and process technology from SMS group we can now produce hot wide strip as primary material for the automotive and pipe manufacturing industries in a highly efficient way.”



Finishing mill stands F3 to F6 during hot strip rolling.



Coiling of a strip.

SMS group is a group of companies internationally active in plant construction and mechanical engineering for the steel and nonferrous metals industry. It has some 14,000 employees who generate worldwide sales of about EUR 3 billion. The sole owner of the holding company SMS GmbH is the Familie Weiss Foundation.