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HBIS and Primetals Technologies Starts up Slab Caster Utilized for Green Automotive-Exposed Steel

- **1-strand continuous slab caster started up two weeks ahead of schedule**
- **HBIS XuanHua set to produce low-carbon steel for the automotive industry**
- **Primetals Technologies has supplied key mechanical scope and a comprehensive automation solution**

Chinese steel producer HBIS XuanHua Iron and Steel Group and Primetals Technologies have recently started up a slab caster with an annual capacity of 1.5 million tons at a low-carbon-emission production facility in the Xuanhua district of Zhangjiakou city, Hebei province. Primetals Technologies supplied the full mechanical scope along with complete Level 1 and 2 automation systems.

Leading Supplier of Casting Machines

The startup was completed two weeks ahead of schedule, marking a significant project milestone. During the first heat, all systems operated in fully automated mode. This achievement underscores Primetals Technologies' leading position in continuous casting technology and its ability to deliver projects on time through seamless coordination and teamwork. These strengths were among the main reasons behind HBIS' choice of supplier.

The slab caster implemented at HBIS XuanHua is designed for versatility, capable of handling a wide variety of steel grades as well as stainless steel production. Key mechanical features include the DynaFlex hydraulic oscillator, an advanced mold-oscillation technology improving strand-surface quality, and Smart Segments in the strand guide, allowing online and remote roll-gap adjustment for flexible control of slab-width. The caster is also equipped with DynaJet air-mist nozzles for optimized spray pattern, allowing optimal cooling of the strand, and Mold Expert, an advanced system for detecting and preventing breakouts while analyzing the casting process in the mold.

Comprehensive Automation Solution

State-of-the-art process models ensure precise control over key production parameters. For example, Dynacs 3D calculates the full 3D strand-temperature profile at any position along the strand, enabling optimal adjustment of secondary cooling setpoints and the point of final strand solidification. Yield Expert is a strand-length optimization system which considers factors like scrap portions, quality defects, weight limitations, and width changes to minimize the amount of scrap and optimize yield. In this way, productivity can be increased. Quality Expert tracks, supervises, and controls quality-related data and predictions for the cast products, contributing to ongoing improvement of the product quality.

HBIS Group is one of China’s largest iron and steel producers, specializing in high-end automobile plates, fine medium-thick plates, high-quality special steel, and products for the vanadium-titanium new materials industry.

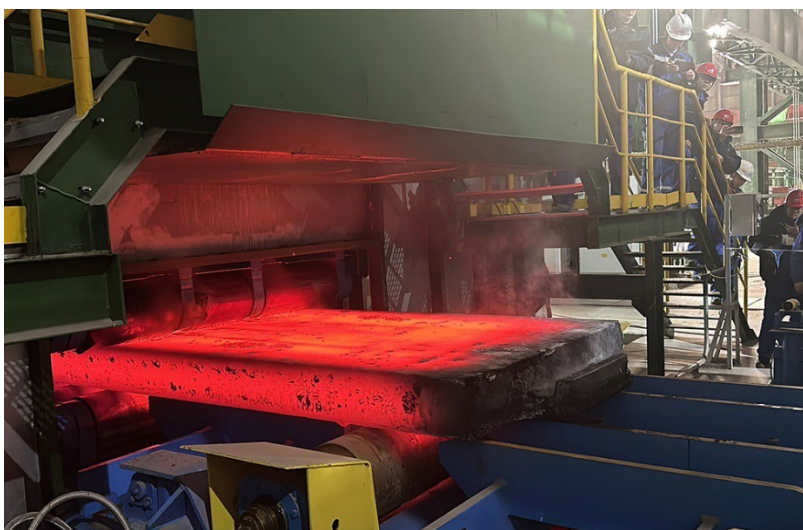
HBIS’ plant in Xuanhua is recognised as the world’s first hydrogen-based iron- and steelmaking facility on an industrial scale. The newly commissioned 1-strand slab caster is now part of a production chain that includes a DRI plant and electric steelmaking facilities. The close to zero-carbon steel produced at this site will be used in demanding sectors such as the automotive industry.

Key facts: HBIS XuanHua’s 1-strand continuous slab caster

Capacity: 1.5 million tons per year

Dimension of slabs: 250 to 330 millimeters thickness and 900 to 1,900 millimeters width

Steel grades: Ultra-low carbon, carbon, low alloyed, steel pipe



First slab produced on Xuanhua’s 1-strand slab caster from Primetals Technologies.



The Primetals Technologies caster startup team on site at HBIS XuanHua.

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