PRIMETALS TECHNOLOGIES

Press

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Second Arvedi ESP line at Chinese steel producer in operation after exceptionally fast startup

- **Most recently implemented Arvedi Endless Strip Production (ESP) line from Primetals Technologies with an annual productivity of 2.55 million tons of hot rolled strip**
- **Thin-slab casting and rolling plant for producing ultra-thin strip of high quality, further optimized for ferritic rolling**
- **Energy consumption reduced by up to 50 percent compared to conventional casting and rolling processes**
- **Zero direct CO_2 emissions resulting from production**

Primetals Technologies has recently started up ESP line No. 2 at a Chinese steel producer in Hebei province, China. The customer's first ESP line is in full operation since 2021. Line No. 2 is the 9th ESP line to be put into operation in the world.

Thanks to the close and effective collaboration between Primetals Technologies and the Chinese steel producer, the startup of its second ESP line was exceptional in terms of swiftness and efficiency. The first hot-rolled coil was produced in endless mode only nine weeks after the beginning of cold commissioning, and the first coil of 0.8 millimeter thickness was produced just 50 days after.

This new ESP line allows the steel producer to further expand its production capacity of high-grade strip and cold-rolled substitutes, building on the already demonstrated market success of the coils produced by line Nr. 1. Primetals Technologies was responsible for engineering and supply of the complete process equipment as well as the automation system.

Targeting high quality products

Thanks to the new line's endless casting and rolling process, the Chinese steel producer will manufacture hot-rolled products of high quality with uniform mechanical and geometrical parameters from the strip head to the tail, at widths of up to 1,600 millimeters and thicknesses down to 0.7 millimeters. The product mix includes carbon steels, high-strength low-alloyed (HSLA) grades, as well as soft steel grades. The steel producer targets the market for substitute material of cold-rolled coils, which is made possible by the superior surface quality and consistency of hot rolled coils produced in endless mode. These coils already obtain a controlled microstructure at hot-rolling stage – a structure that meets the requirements of top-notch cold-rolled material applications, such as deep drawing sheets.

The world's most compact casting and rolling line

Compared to other ESP lines, the defining feature of this innovative ESP line is the process and layout optimization focused on ferritic, i.e. low temperature rolling. This is realized with a dedicated Power

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Cooling unit ahead of the finishing mill and a very short cooling line, resulting in the unprecedented length of about 150 meters for the entire plant, measured from the caster turret to the first downcoiler.

Arvedi ESP: the greenest way to produce steel

On top of its unparalleled productivity and performance as well as its capability to produce high-end strip, Arvedi ESP is the only officially certified carbon neutral thin-slab casting and rolling process. This fact was confirmed in 2022 by third-party certificates received by leading Italian steel producer Acciaieria Arvedi, who operates the ESP master plant.

The defining feature of its layout is the absence of a fossil-fuel fired tunnel furnace for reheating the slabs before rolling. Thanks to the high-speed casting process, the thermal energy of the cast slab allows for direct rolling without the addition of a significant amount of energy. Any requested temperature adjustment, i.e. the fine tuning of the finishing temperature, is made using a very compact inductive heater located just before the finishing mill entry.

Compared to conventional casting and rolling processes, the ESP line's energy consumption and the related costs are reduced by 50 percent, while its direct CO_2 emissions stemming from production are reduced to zero.

The Primetals Technologies team, commemorating the first coil produced on Arvedi ESP line No. 2 at the customer's site located in Hebei province.

Arvedi ESP line No. 2 at the Chinese steel producer, implemented by Primetals Technologies.

This **press release** and a **press picture** are available at www.primetals.com/press/

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