

PRESS RELEASE

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Trimet Essen increases capacity for high-quality foundry alloys

TRIMET Aluminium SE has reacted to the growing demand for high-quality foundry alloys by investing in a second horizontal casting plant at its Essen works. Again, Hertwich Engineering, a subsidiary of the SMS group, has been selected as equipment supplier.



Ingots sawn to length

Horizontal casting units have been part of Hertwich's product range for 40 years. During that time the company has been able to accumulate comprehensive experience from numerous projects. That experience has contributed toward a continuous process of improvement, which has brought the company to a technological peak in the sector. In fact, the use of such

plants is in no way limited to foundry alloys, as in the case described.

TRIMET supplies foundry alloys optionally in the form of open mould cast ingots or as horizontally direct chill cast ingots. For ingot production, in 2013 an open mould ingot casting line (OMC) for 30,000 tonnes per year went into operation. The existing horizontal direct chill continuous casting line (HDC) with a capacity of 40,000 tonnes per year, which has been in operation since 2003, has now been supplemented by a second line for 60,000 tonnes per year. Thus, at the smelter casthouse in Essen horizontal continuous casting accounts for around a third of the production capacity. Both of the horizontal casting units and the open mould ingot casting line have been supplied by Hertwich.

Thus, horizontally cast ingots are the preferred material for direct processing. The market development shows, that aluminium for highly stressed castings, such as those used in particular by the automotive industry, is increasingly requested. In fact, TRIMET confirms that the output of the new casting plant is destined for the automotive industry.

Important factors that had to be taken into account are the economical plant operation and the quality of the products. The quality-relevant advantages of HDC ingots can be summarised as follows:

- low contents of hydrogen and oxide as well as non-metallic inclusions,
- fine-grained and uniform microstructure,
- uniform distribution of the alloying elements,
- no segregation due to gravitational effects,
- free from cracks, cavities and inclusions,
- great uniformity in the dimensions, straightness and weight of sections cut from the strand,
- smooth surface, which simplifies stacking, strapping and also dispatch.

The important economic aspects are automation, output and availability of the plant. The plant is designed for 32 strands of 90 mm x 54 mm. The height of the strands is different from the generally established standard dimension of 75 mm. The larger strand cross-section favours a higher casting rate.

Stacking, marking, strapping and weighing, are integrated in the automated process using field tested standard components. For stacking, Hertwich uses an industrial robot which on the one hand has the necessary degrees of freedom of movement but which is, at the same time, designed for high speed operation.

Besides monitoring the operation, the control system is responsible for managing the administrative data and for documentation of all operating parameters. Each individual working step is checked by special monitoring and diagnosis programs. In the event of deviations, the control system reacts immediately.

Hertwich Engineering, a company of the SMS group is renowned for its future-oriented, energy saving technologies and outstanding service in aluminium casthouse. The company is active worldwide with design, supply, construction and commissioning of special machinery and equipment for the Aluminium industry. Hertwich is competent for supplying complete Al-casthouse on a turnkey basis (one-stop-shopping). The product range comprises melting equipment for aluminium scrap, conti and batch homogenizing plants, sawing plants, horizontal and vertical casting machines and quality inspection stations, etc. To stay ahead Hertwich relies on its own R&D and proprietary know-how. For 50 years, the advanced technology has revolutionized the industry and the company maintains its worldwide lead.