

PRESS RELEASE

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Cromodora Wheels starts operation of a chip melting furnace supplied by Hertwich Engineering

Cromodora Wheels SPA has installed a chip recycling furnace for wheel production in Ghedi, Italy. The furnace with a capacity of 10,000 tons per year was successfully supplied and commissioned by Hertwich Engineering, a company of the SMS Group.



Hertwich chip melting furnace at Cromodora, Italy

Since 1962 Cromodora Wheels has produced cast magnesium wheels used for competition as well as aluminum wheels. Currently the wheels are manufactured in the low-pressure casting process and using flow forming technology. As one of the leading

wheel producers, Cromodora Wheels is today an official supplier of the most renowned automotive manufacturers in the world, such as BMW, Jaguar-Land Rover, Daimler (including AMG and Smart), Porsche, Audi, Volkswagen, Skoda, Fiat, Maserati and Alfa Romeo. With the Ecomelt melting furnace commissioned by Hertwich, the company is modernizing the recycling of its processing scrap.

In wheel production, machining chips regularly arise in large quantities in addition to a relatively low portion of piece scrap. Chip recycling is challenging, since the extremely unfavorable ratio of surface area and volume causes a significant material loss through burn-off. The traditional method of recycling chips is to compact the chips before melting, which reduces the metal loss, however it requires an additional work step with considerable consumption of energy. In addition, the chips are frequently contaminated with adhering cooling lubricant.

The recycling system developed by Hertwich Engineering therefore offers a more economical solution, provided there is a sufficiently large volume of chips. With the combination of the Ecomelt concept and a special tailor-made plant technology, very low metal loss values are achieved during operation. This guarantees by far the most economical solution of this special recycling task, as the previously installed units around the world clearly prove.

In addition to the melting furnace, the scope of supply includes a chip pre-treatment with a bypass system for conveying in separate transport containers. During pre-treatment chips are centrifuged. Unfavorable chip shapes are shredded in a chip crusher to ensure stable further processing. Undesirable elements are removed by a separator.

The chips prepared in this manner are then fed into the melting furnace. In the first step the charged chips are heated to approx. 400°C within a few seconds using an

intensive hot gas flow. Thereby moisture and organic contaminants are removed. The energy required is provided by hot gas from the melting furnace and the flue gases from the dryer support the heating of the furnace.

The preheated and cleaned chips are continually fed into the downward directed melting flow and immediately drawn under the bath surface to the furnace floor. The fast melting almost completely avoids metal loss due to oxidation – as a result, the dross formation is also extremely low. The heat is removed to a very large extent from the flue gases in a regenerative combustion system and thus the combustion air is preheated to approx. 900°C.

As result the process is characterized by a series of notable advantages:

- **Continuous operation:** The chip recycling is integrated in the automated in-house material transport
- **Maximum metal recovery:** Metal loss values below 1,0 percent are achieved during operation. That even exceeds the value of conventional furnace units melting ingots.
- **Low energy costs:** In this regard the furnace profits from the advantages of the Ecomelt technology developed by Hertwich. Values of less than 600 kWh/t / (930 Btu/lb) are achieved (taking into account chip drying and combustion).
- **Outstanding metal quality:** An objective and neutral inspection of the metal quality, that was carried out in terms of the development process, showed that the untreated melt from the chip recycling furnace with regards to the content of non-metallic inclusions already corresponds to a melt ready for casting.
- **Low personnel costs:** As a result of the high degree of automation, the complete plant with a capacity of 10,000 tons per year can be operated by one operator per shift.
- **Ecological compatibility:** The strict central European emission regulations are met.

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.