PRESS RELEASE

Abu Dhabi, United Arab Emirates, May 20, 2016

TALEX casthouse – successful start of operation

The new TALEX extrusion plant in Abu Dhabi operates by processing its own extrusion scrap to produce billets. The casthouse, which started operating in February 2016 was built as a turnkey plant by Hertwich Engineering. Annual current capacity is 36,000 tons and after implementation of the second phase the annual output will be increased up to 45,000 tons of extrusion billets.

Casting Furnace, capacity 30 tonnes

In the first phase of the project TALEX set up two extrusion lines, two anodizing lines short and Long, two fully automated warehouses, one horizontal powder coating line and a casthouse for casting extrusion

billets. In addition to recycling scrap from the company's own production and scrap from the co-operation partner Gulfex also molten metal from the adjacent smelter will be processed.

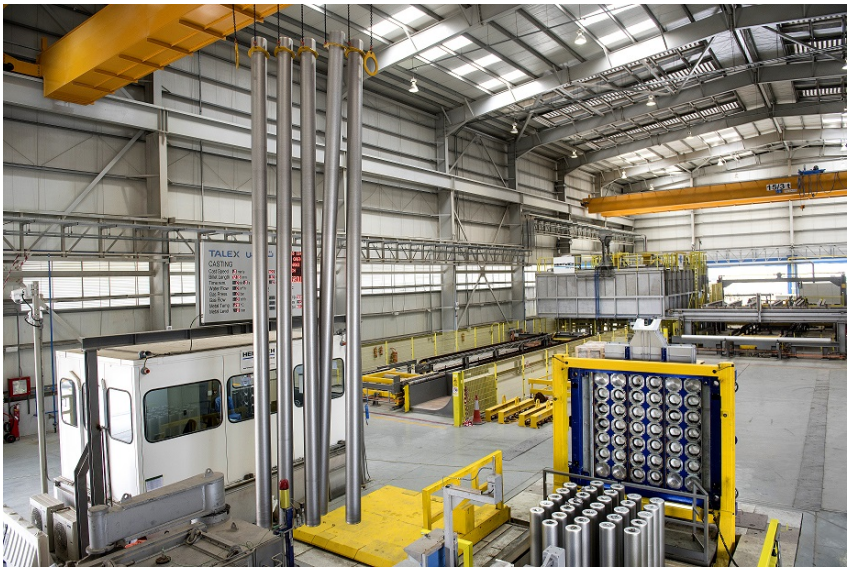
The material supplied by Hertwich includes …

- a charging machine for scrap, charge weight up to 3 tonnes
- an Ecomelt-PR80 multi-chamber melting furnace,
- a casting furnace, capacity 30 tonnes,
- equipment for melt refining,
- a cooling water plant
- a vertical casting machine, including HYCAST GC (gas cushion) moulds,
- a complete continuous homogenising line including
  – ultrasonic testing unit and
  – a sawing and packing station.

The plant has been designed for the subsequent integration of a second casting furnace and a batch-type homogenising unit. With this equipment, the plant's planned capacity and alloy variation will be reached in the final stage.

At TALEX an "Ecomelt PR" two-chamber furnace with a preheat ramp was installed, which is particularly suitable for melting post-consumer scrap containing moderate amounts of volatile organic compounds (V.O.C). The Ecomelt-PR 80 melting furnace type is designed for a melting performance of 4 tonnes per hour. The concept is based on a multi-chamber furnace in which the processes of preheating, gasification of organics and melting are combined in a single unit.The material to be melted is deposited at the preheat ramp above the melt bath level by the charging machine. There, it is preheated to around 500°C, during which time the VOC's contained within the scrap are gasified and used to generate energy. The heated material is pushed directly into the metal bath of the melting chamber, where it is completely immersed in the bath and melted. As a result the melt loss is reduced to a minimum. The molten metal is circulated between the melting and main chambers by an electromagnetic pump.The melt is transferred via a launder system from the Ecomelt melting furnace to the holding and casting furnace. The molten metal from there is sent to the casting station via the I-60 SIR inline degassing and filtration units. For

degassing, filtration and the VDC casting process TALEX decided in favour of Hycast technology. The vertically cast logs are lifted out of the casting pit by a crane and laid down at a transfer station.To obtain the desired structural condition, cast materials have to undergo a high-temperature annealing treatment (homogenisation) before hot deformation. In this first expansion TALEX opted for continuous homogenising.Before entering the homogenising furnace each individual log is checked for centre cracks by ultrasonic inspection. For this, the logs are deposited on a storage magazine and then moved individually through the inspection station on a roller table. In the inspection method used in his case, two test heads are arranged at an angle of 90 degrees.Logs free from defects pass through the homogenising furnace orientated horizontally and arranged parallel to one another. In the first furnace section (heating zone) the logs are heated to the homogenising temperature. In the subsequent holding zone they are held at that temperature for a certain time. At the end of the holding period the logs are transferred directly to the high volume air-cooling unit.The cooling station is followed by the saw for cutting off the head and butt ends to produce long billets between 4.000 to 7.500 mm. The cut billets are transported by a further roller table to a stacking machine and from there, finally, to a semi-automatic strapping station and onward to a weighing machine. The scrap produced at the saw is also disposed of automatically: the head and butt ends into a container, while the swarf is drawn off by suction and briquetted. All the scrap is returned to the melting furnace.



Vertical Casting Machine in the front, Continuous Homogenizing and Sawing Plant in the background

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.