Flexible Iron Granulation at ARCELORMITTAL Saldanha

ARCELORMITTAL Saldanha, SA

The Saldanha site is located a 2 hour drive north from Capetown. The process flow includes a COREX® unit that delivers iron to a CONARC®, followed by downstream continuous casting and rolling mill. In 2001, Saldanha defined some objectives as to improve their operations and environmental performance.

• Create buffer and flexibility between COREX® and steel plant
• Reduce operational cost for sand bed pooling and crushing
• Comply with environmental legislation

Productive & Protective Result

The GRANSHOT® unit was commissioned, in 2002. The unit is designed to handle the excess iron from the COREX® and cress-carriers bring ladles for granulation in a separate building. The granulated iron is used as raw material in the downstream CONARC® partly substituting merchant scrap and internally produced DRI. The granules are transported to an intermediate storage by conveyor belt.

• Granules are excellent as raw material feed in steel making operations
• Considerably lower cost as compared to sand bed pooling & crushing
• Rapid start-up, high availability and a minimum of staff for operation
• Allows more stable production conditions for the COREX®
• Improved refractory life-time for COREX®
• Granulated iron as reduction agent minimizes use of aluminium
• Granulated iron requires less energy for melting as compared to DRI
• Minimized impact on the delicate habitat of the Saldanha site

Scope of Delivery

• Complete engineering
• One GRANSHOT® metal granulation unit
• Capacity 120 tonnes/hour
• Electrical, control and MMI
• Commissioning and start-up
• Performance Guarantee

GRANSHOT® Process

Controlled solidification of hot metal in water, granule transport and dewatering are the vital parts of the GRANSHOT® process for pig-iron, steel, stainless steel and ferroalloy applications.

• Large size granules, inert during shipping and storage, well suited in handling and storage
• Ideal metallurgical properties; homogeneous, low oxide content, fast dissolution and melting
• Industrial process, safe and secure operation
• Rugged design and low on maintenance & staff
• High bulk density and angle of repose over 35°
• Close to 100% process yield
• Granulated Pig Iron available in 30 seconds
• Compact unit foot print to fit in existing plants
• Turn-key and performance guarantees

40 Deliveries Worldwide

UHT has a long and field-proven steelmaking experience with well over 40 deliveries and start-ups of GRANSHOT® on all continents.

• Pig-iron: ESSAR Steel, SSAB, ARCELOR-MITTAL Saldanha, Voestalpine
• Ferroalloy: Numerous installations, for example at VALE, Angloamerican, Xstrata, Eramet