

Injection technology for hot metal desulphurization



thyssenkrupp



Reliable plant technology backed by more than 50 years' experience

Flexible – effective – cost-efficient

The production of **high-quality steel grades** requires **low sulphur** concentration in the final product. The most efficient and most cost-effective way to reduce sulphur is the desulphurization of hot metal prior to the Basic Oxygen Furnace. The most precise, flexible and economic technology is the **injection of reagents** into the liquid metal by means of a refractory lance. thyssenkrupp Industrial Solutions provides advanced injection technologies powered by high-quality, durable and future-proof equipment with highest degree of automation.

A large portfolio of high-quality steel grades contributes to stable profits of steelmaking companies in times of overcapacity. Furthermore, ongoing heavy competition in terms of price promotes technologies which are efficient and economic in operation.

For the desulphurization of hot metal, the simultaneous injection (co-injection) of pulverized burned lime (CaO) and granulated magnesium (Mg) provides highest process flexibility for the best adaptation to changing production requirements and the best performance at low operating expense.

The high equipment quality promises safe and reliable operation for decades and at low maintenance costs. The heart of the desulphurization system and guarantor for process efficiency and economy are the pneumatic injection conveyors DP with PLC based injection control system MEPOL, as well as the accurate, batch-based calculation of process parameters by the thyssenkrupp Metallurgical Process Computer MPC.

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Fields of application

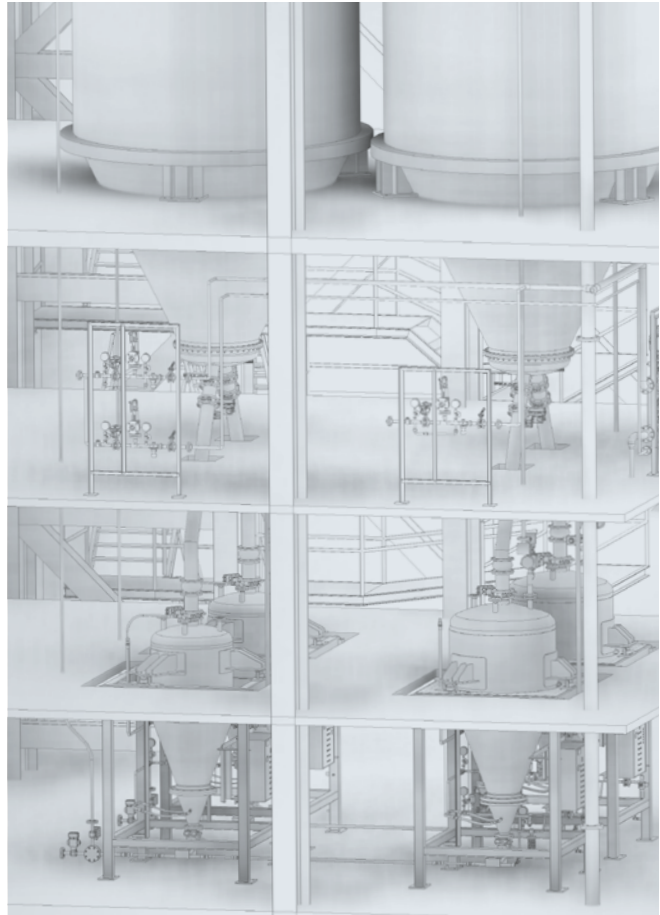
- Desulphurization of hot metal (pig iron) including:
- Injection of powders and granulates
 - Removal of desulphurization slag

Main features

- Customized & tailored plant layout
- High adaptability to production needs
- Low consumption of reagents (Mg, CaO, CaC₂)
- High throughput/performance
- Short processing time
- Accurate, reproducible process results
- Mono-, co-, and multi-Injection process available
- Durable equipment; low maintenance

Design parameters

- Heat sizes from 50 to 400 tons
- Annual throughput per station: up to 3 million tons
- Unlimited initial sulphur content
- Ultra-low final sulphur content (≤ 10 ppm)
- Reagents: CaO, CaC₂, Mg, slag conditioners
- Stable reaction products – no re-sulphurization



Contact

thyssenkrupp Industrial Solutions AG

Graf-Galen-Straße 17

59269 Beckum, Germany

Phone: +49 2525 99-0

E-mail: pyro.tkis@thyssenkrupp.com

www.thyssenkrupp-industrial-solutions.com/pyroprocessing

Sales Agent

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