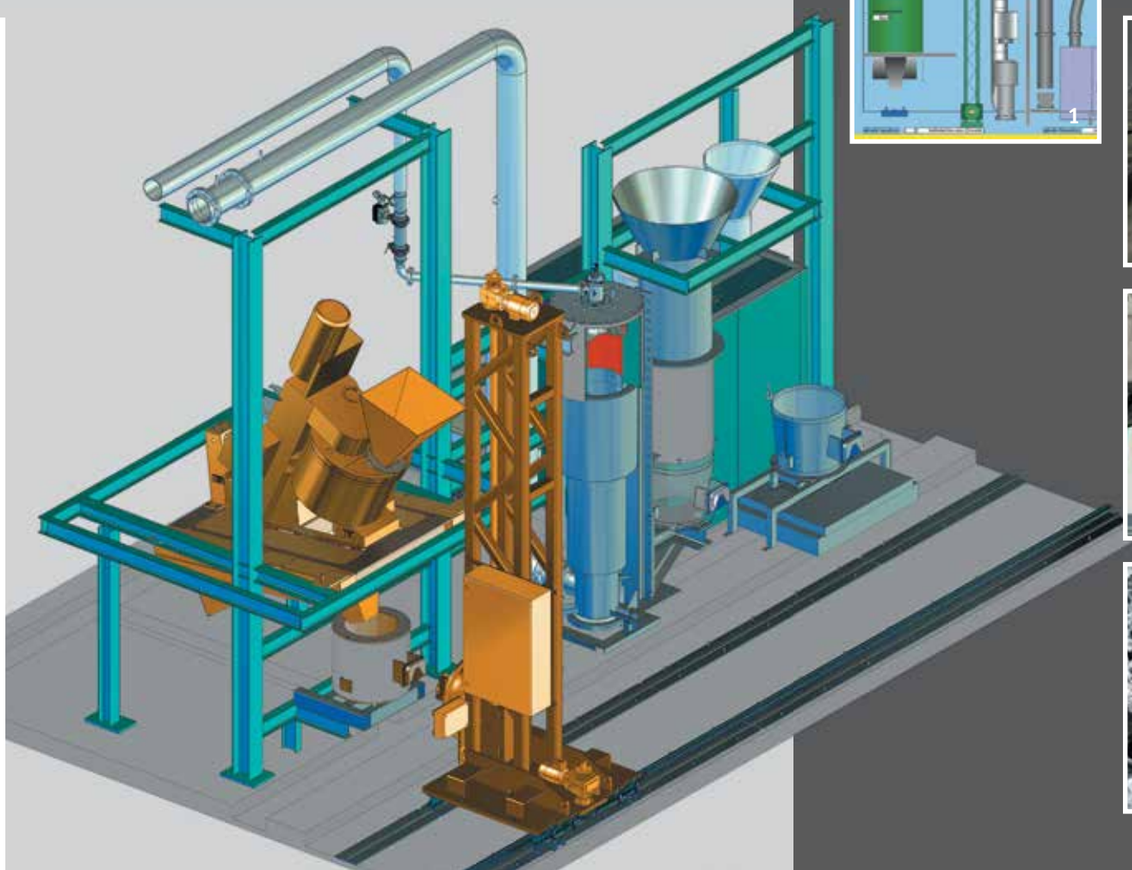
5 *Drive Motor*
6 *Burner*
7 *Probe*
8 *Flue Gas Determination*

Sinter Pilot Plant

Full-automatic
production of sinter charges
for research
and quality control



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Measurements
Process and Plant Optimizations
Pilot Plant Construction

Visualization 1
Desagglomeration Tower 2
Flexible Cable Tray 3
Sinter 4

The Sinter Pilot Plant

The sinter pilot plant serves the full-automatic production of sinter charges for research and quality control. An operator can produce 190 kg sinter material in about 90 minutes.

Optimum Ease of Use
The sinter pilot plant fulfils the requirements according to machinery directive 2006/42/EC. It offers a high level of operational safety and ergonomics. Due to the compact design, dust and noise emissions are low.

Good Reproducibility
The raw materials for the sinter production will be selected from a stock data base and weighed in at the weigh station within given mass tolerances. The recipe and all operational parameters are being saved as a test data record, which remains available for further evaluation.

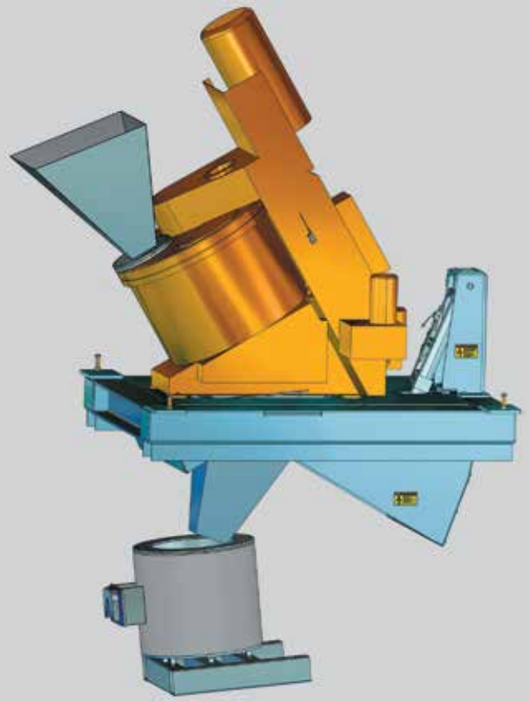
Comprehensive Chemical Analytics
Besides the classical process parameters such as temperature, pressure and volume flow rate, all relevant flue gas constituents are measured continuously. Furthermore, dust constituents and aerosols can successively be determined by extractive sampling.

High Automation Grade
The entire sintering sequence proceeds fully automated. This applies to blending and burning of the charge materials, the crushing and treatment of the sinter product as well as the intermediate transport to the next processing step.

Optimum results can be achieved through the interaction of ease of use, reproducibility, analytics and automation.

The Mixer

The efficient Eirich® intensive batch mixer with tilting technology enables an optimum mixture and pelletizing of the sinter materials. By individual adjustment of mixer inclination, tool and drum speed as well as pelletizing time, the mixture is being treated in a high quality within a couple of minutes. Charging and discharging are fully automated. A manual cleaning of surfaces to remove residuals is not required. Water can be applied to the process employing an automated dosing system.



The Manipulator

The manipulator with aligning guide is capable of precise positioning during lifting and lowering, horizontal travel and discharging of the transport vessels.

Due to the automated pick-up system, a manual interference by the operator is not required. The integrated tool interlocking ensures a high level of operational safety. The sturdy design guarantees long service intervals and tool life.

Analytics

The Sick® gas analyzers continuously record the flue gas composition. The test readings are visually shown online and saved in the test data record. Effects of variable charge materials and process parameters can thus be directly evaluated with a view to quality control and research issues. Corresponding measures can be inferred for further batches. Accumulations in the process cycle or changes of the emission values can be retraced. Following flue gas constituents will be registered for this purpose: CO_2, CO, O_2, H_2O, HCl, NO, SO_2, VOC.

In addition, the dust mass flow is being measured by laser diffraction. Classification of representative dust and aerosol samples is effected byan ultra-fines separator. The samples can be examined and analyzed for further evaluation.