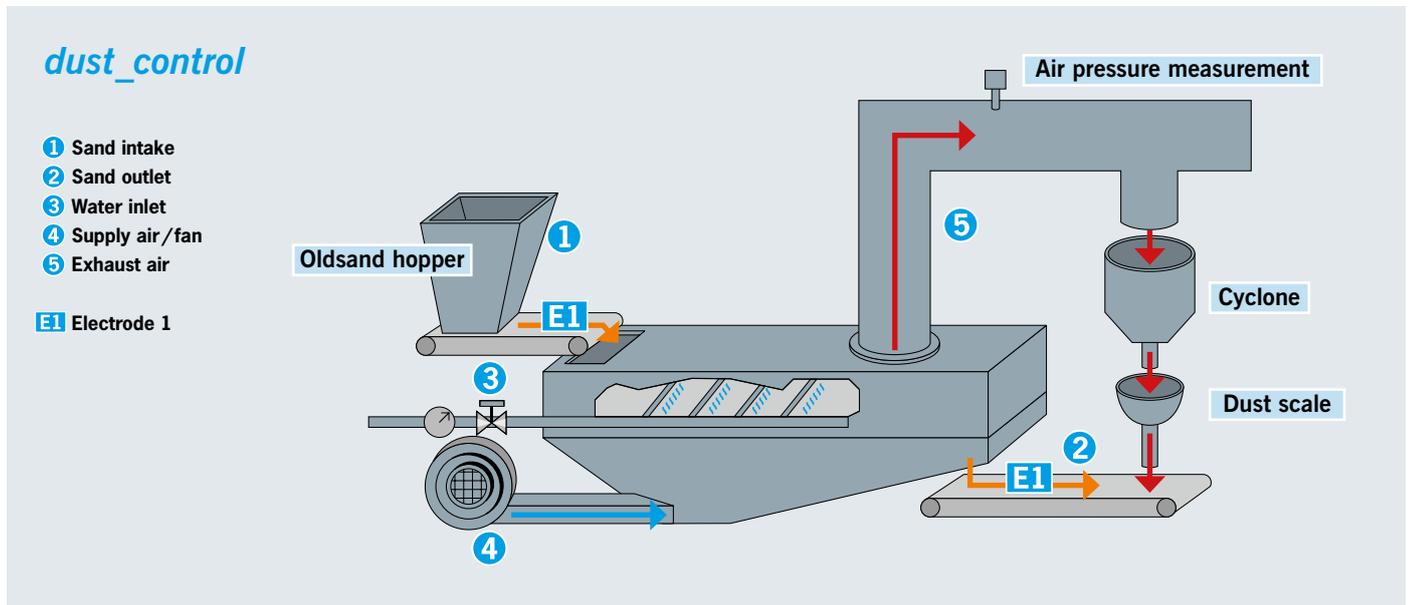


Measuring the quantity of dust in the exhaust air from the cooler



The task:

Sand qualities are markedly changed after every cycle due to the thermal wear. In the process of cooling the used sand in the cooler, the flow of air picks up large quantities of dust and fine particles, some of which are returned to the sand through the cyclone. This dust has a high proportion of bentonite that is still active, which is extracted from the moulding material. Frequently this extraction process is uneven and therefore has a significant effect on fluctuations in the strength of the moulding material that comes out of the cooler. The extraction cannot be prevented, but it should be even.

Fine particles should be extracted in a controlled way.

Approach:

Continuous measurement of flow should give an indication of how the extraction of dust is developing. As a result of the humidity and the high temperature, visual procedures cannot be used. On the other hand, weighing the discharge from the cyclone provides an accurate measurement of the quantity of dust.

Solution:

A hopper scale is fitted in the down pipe beneath the cyclone discharge. At regular intervals, the scale is filled, the weight is determined and the scale is then emptied. The value is displayed and recorded, thereby allowing both on-line monitoring and subsequent evaluation in order to understand the processes more accurately. As an option, a suitable discharge unit can be placed beneath the scale to return only some of the dust to the used sand and dispose of the rest, in order to control the grading curve precisely.



Advantages:

This method of measuring airflow has a number of advantages.

1. Permanent monitoring of the quantity of fine particles being sucked out of the cooler is possible
2. Fluctuations can be identified if, for example, the airflow changes.
3. A simple design that is easy to install.
4. No complex adjustment necessary as the technology is familiar.

Optimisation (options):

Measurement of airflow

To check the rate of airflow, an air pressure gauge is permanently fixed to the exhaust air pipe to identify any deviations from the original setting.

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