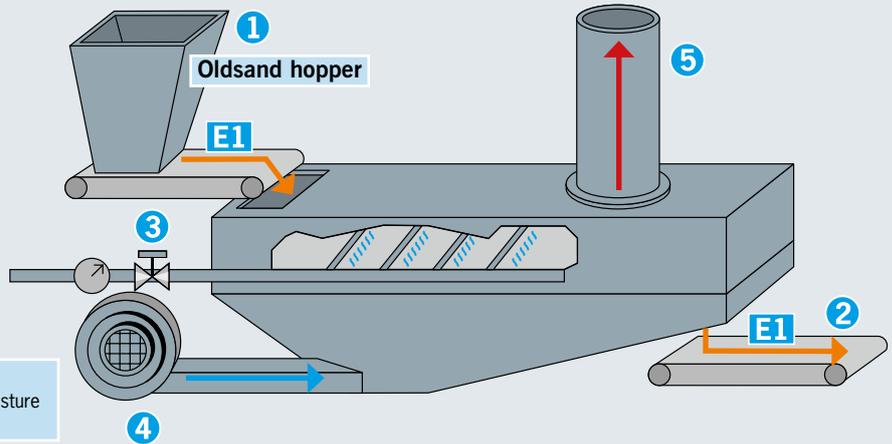


water dosing for fluid-bed cooler

(measured twice for more precise dosing)

akwa^{plus}_cool

- 1 Sand intake
(Sand moisture [%], Sand temperature [°C])
 - 2 Sand outlet
(Sand moisture [%], Sand temperature [°C])
 - 3 Water inlet [Litres]
 - 4 Supply air / fan
(Air temperature [°C])
 - 5 Exhaust air
(Air temperature [°C])
- E1 Electrode 1



Evaporation = exhaust humidity – supply humidity
Wetting = required sand moisture – intake sand moisture
Water inlet = wetting + evaporation

The task: Assuring the quality of the moulding sand starts with the cooler. Its balanced moisture output facilitates the mixer's work, as the mixer is not able to balance everything out. An additional measuring device, coupled with a controller, is intended to significantly reduce fluctuations in the output moisture. **The used sand should be evenly cooled and evenly moistened.**

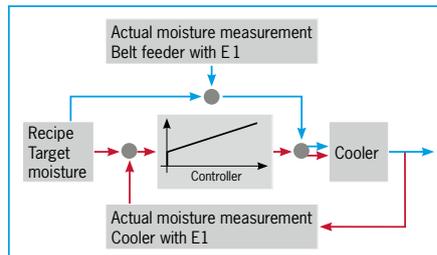
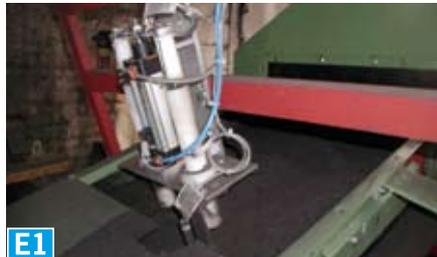
Approach:

The advantages of two processes for measuring moisture are utilized, thereby simultaneously offsetting any disadvantages.

The separate moisture measurement on the belt feeder before the cooler and temperature measurement in the exhaust of the condensed coolant provides both measurements for quick water dosing. The moisture measurement directly after the cooler monitors deviations and fine-tunes any discrepancies.

Solution:

As basic equipment for the moisture measuring device an additional electrode is installed on the sand outlet belt. A controller processes the actual moisture value and enters its correction to the additional water amount. For process visualisation, a colorful screen display with continuous monitoring of the relevant measurement data can optionally be implemented.



Advantages:

1. The used sand moisture level can be adjusted to the target value by the operator.
2. This target moisture is achieved for a wide temperature range, even for cold sand.

3. No measuring devices are installed in the interior of the cooler.

- They are subject to reduced wear and tear and
- They are easily accessible for inspection purposes

4. Increased process reliability

5. Increased precision via

- Doubling of measuring points
- Innovative multi-stage control concept for adjusting any changes in sand characteristics

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.

Measurement of the quantity of dust

The quantity of dust extracted by the exhaust air has a significant effect on the quality of the sand. Variations in the quantity of dust removed are reflected in the quality levels. A weighing device in the exhaust pipe of the cyclone measures the quantity of dust.

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