MOULDINGSANDMANAGEMENT 2020

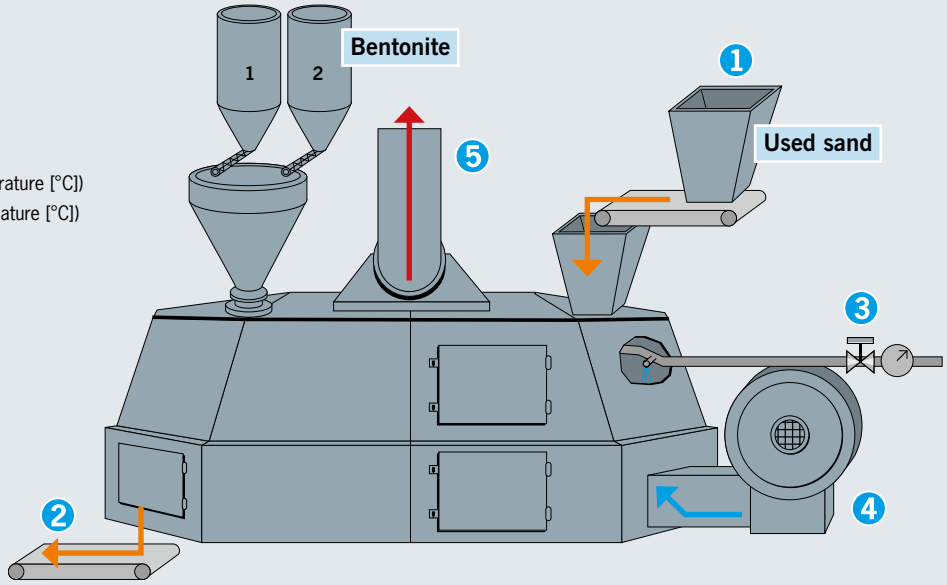
Control for batchcooler

cool_mix

Sand preparation

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])

Phase 1: cooling with low dust emission
Phase 2: casting oriented conditioning



The task:
The used sand stressed by the moulding plant has to be cooled and conditioned in the shortest time possible after knock-out. Cooling, dosing of auxiliary materials and mixing have to be performed in a flow cooler with a stirrer. The dosing of auxiliary materials such as bentonite, lustrous carbon brighteners and new sand is casting-oriented.
Simultaneous cooling with low dust emission and casting-oriented dosing of auxiliary materials.

Approach:
The ***cool_mix*** control system peps up your flow cooler. The flow cooler with its stirrer is run in batch operation. Cooling and dosing of auxiliary materials is performed sequentially in order to keep the generation of dust low by extraction unit for the cooling system. In this way two functions are performed in a single unit. The used sand is treated as early as possible and optimum use is made of the dwell time in the used sand bunker.

Solution:
The ***cool_mix*** control system organises this smart process. Mixer functions are added to the flow cooler, which is given a new weighing device so that it can handle batches. Due to the sequence of initial cooling and subsequent addition of bentonite, extraction of the newly added bentonite can be prevented by switching off the cooling air. Following this, the newly conditioned old sand can remain in the bunker to mature and only has to be brought up to the required moisture level in the final mixer.

Dosing of the auxiliary materials is performed by the mould material balancing method with the ***Form_Reg*** program package. The moulding plant information is processed by means of the casting program in order to compensate thermal wear and reduction due to the core sand intake.

Advantages:
1. Optimum processing of the used sand for homogenisation of the sand balance
2. Two-fold use of the cooler for two basic functions

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