

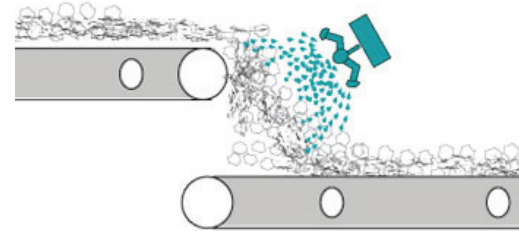


The result is a well-moisturised und cooled mould material which can regenerate in the hoppers and which for the next cycle can be finished in the mixer with a „final“ amount of water. Moulding materials with temperatures above +50 °C in the mixer are difficult to condition and are the source of defective moulds and, consequently, of sand-related casting defects.

You should pay attention to: excessive water in the mould material can cause sticking in the hoppers and conveying systems, resulting in interruptions of the production flow. The effect of a targeted water addition can only be as good as the results of the measurement of residual sand moisture, of the temperature and of the sand throughput.

It is therefore essential to install reliable industry-proved sensors for determination of the used sand values „Residual moisture“ and „Temperature“ at suitable points.

Just as important is the determination of the throughput per time unit; for determination of the amount of water to be added to a given quantity.



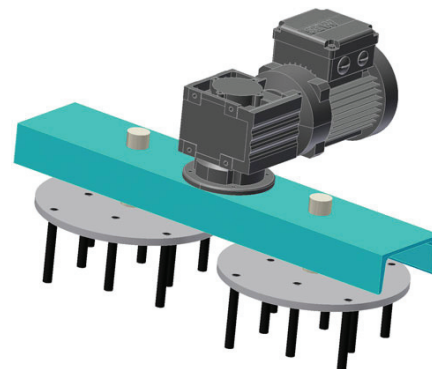
Therefore, the use of level switches or a belt scale are a good support to provide sufficiently accurate throughput acquisition systems.

The water addition as such is effected through water mist nozzles which warrant very uniform moisturising of the return sand.



After moisturising the sand should be thoroughly mixed in order to achieve still better water distribution and cooling. This is often possible with rather simple equipment, like rakes, but also with motor-driven beaters or comfortably with an overbelt sand slinger.

tribution and, when the sand drops onto the next conveyor belt, the degree of mixing is already sufficient.



TRUST IN INNOVATION



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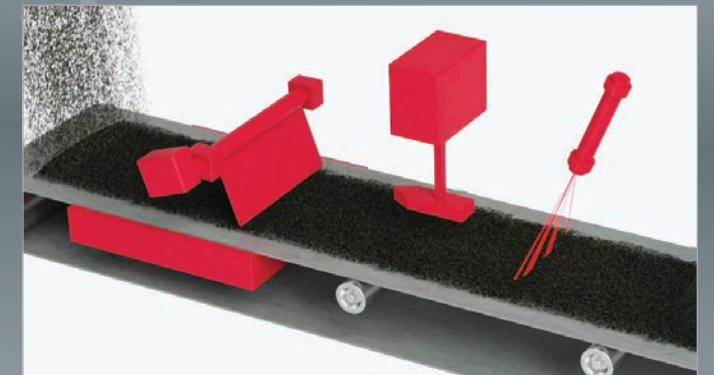
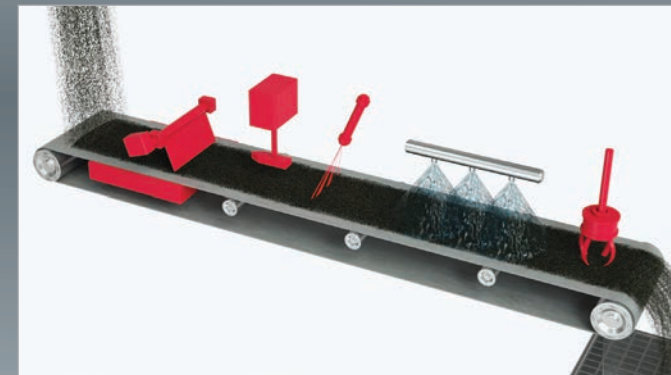
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INNOVATIVE PLANT CONCEPT DESIGNS

AUTOMATIC USED SAND PRE-MOISTURISING **FRS-A**

INCREASING EFFICIENCY THROUGH EARLY MOISTENING



- Moisture measurement
- Temperature measurement
- Material flow
- Water flow

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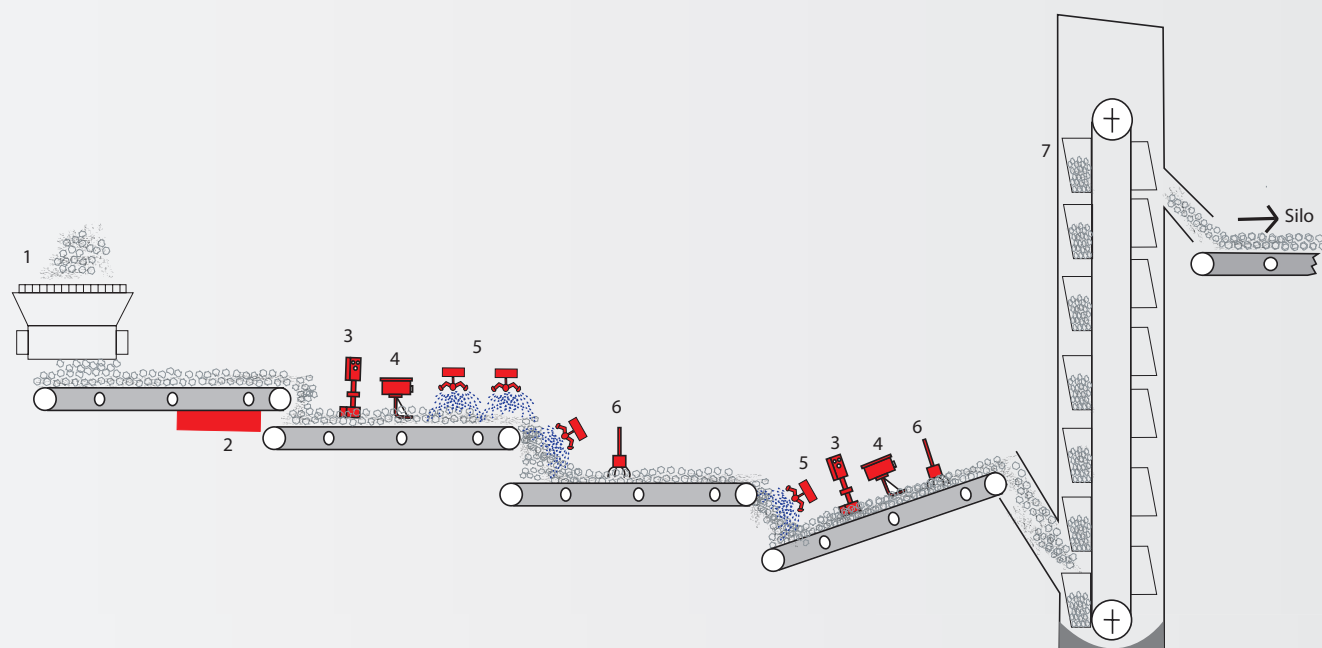
USED SAND PRE-MOISTURISING **FRS-A**



Every foundryman working with bentonite-bonded sand is looking to have a reliable moulding material of sufficient form properties, covering a wide product range and allowing the production of perfect castings. The cost of after-treatment should be kept low, just as the energy consumption in the fettling shop and, in the worst case, the energy consumption for remelting defective castings.

In addition to our well-known and proved moisture control systems at coolers, cooling drums and mixers, automatic sand testing systems for compactability and other optional properties pre-moisturising of used sand is a good additional option.

This pre-moisturising line does not replace a cooler, but provides a significant improvement to mould material quality at little cost. Under extreme conditions, also the capacity of a cooler can be increased.



- | | |
|--|----------------------|
| 1. Shake-out station | 5. Water-spray units |
| 2. Belt scale for quantity determination | 6. Mixing devices |
| 3. Moisture measurement | 7. Bucket elevator |
| 4. Temperature measurement | |

Example: Used sand pre-moisturising line



HARDWARE

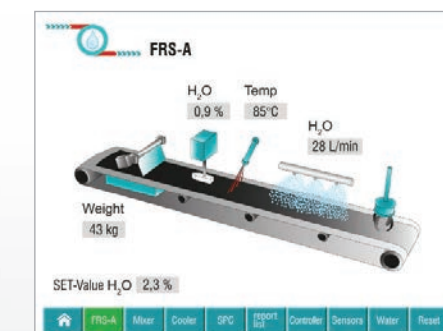
As a module for connection to the FRS-Central or as a single version with its own HMI in a control cabinet.

A Siemens S7 PLC is used. It is also possible to adapt to existing older PLC versions.



SOFTWARE

- Multi-touch menus
- Presentation of the process data
- Intuitive user interface
- Measuring watchdog function



DATA BASE

All process-relevant data are filed in a data base and presented graphically for evaluation. In addition to the control parameters the following data can be stored in the data base:

- Moisture measurement
- Temperature measurement
- Material flow
- Water flow

Special customer-specific features can be integrated.



CROSS LINKING

- Data security
- Mobile HMIs / User interfaces
- Remote maintenance / diagnostic

