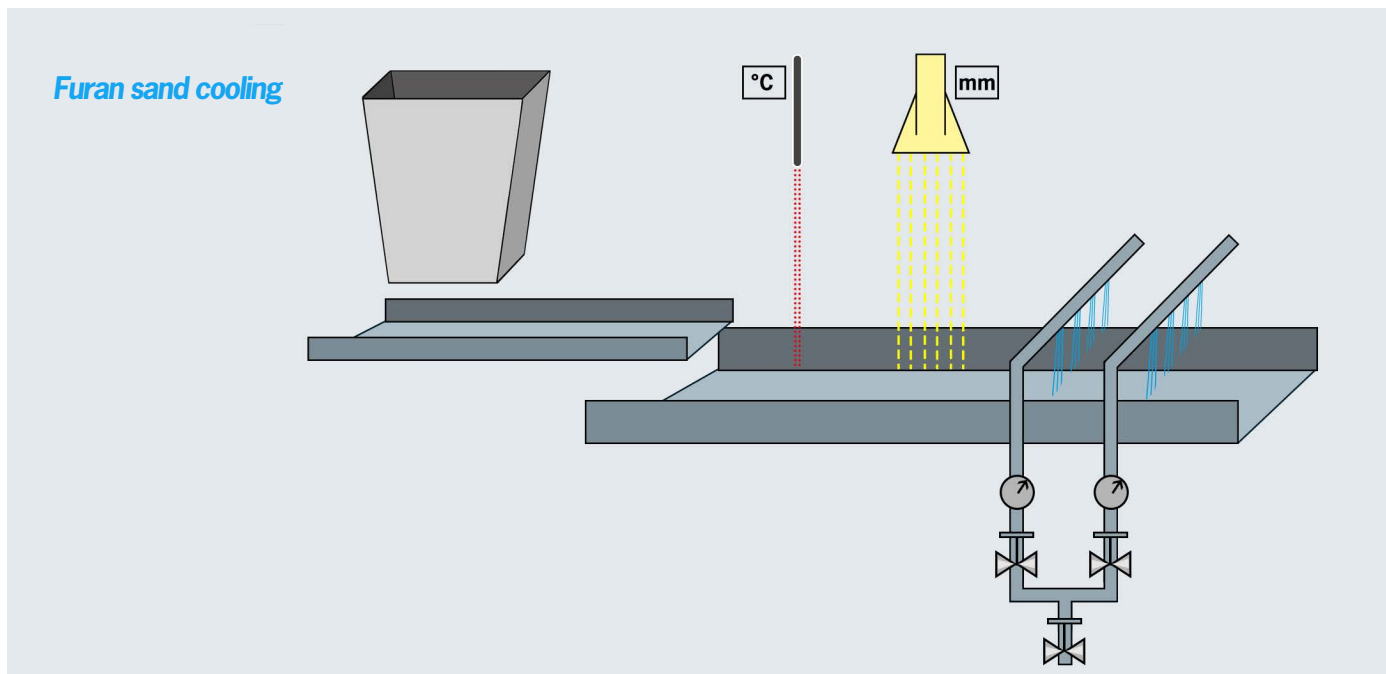


Cooling of the furan sand under the shake-out grid



Task: High temperatures in the unpacked furan sand make the necessary preparation more difficult; inevitable standstills for slow cooling unnecessarily block the plant. Rapid pre-cooling to achieve processable temperatures is intended to prevent plant downtime.

Approach:

A cooling system must be provided under the shake-out grid before the sand lump breaker to reduce the temperature to processable values.

Solution:

A simple but highly effective cooling method is the targeted addition of water immediately after the sand-iron separation, when the furan sand is transported from the pre-bunker under the sieve via launders to the sand lump breaker. The evaporation of water is a highly energy-intensive process. The heat energy is extracted from the sand. Air is then extracted with the evaporation via the extraction system.

The amount of water is determined according to the temperature measurement and the amount of sand just expressed.

Water is only sprayed onto the sand bed when the temperatures have exceeded an adjustable limit value of more than 100°C. The amount of water is adjusted according to the target temperature. This ensures complete evaporation and there is no risk of harmful residual water.

Additional control functions ensure proper operation in order to prevent excessive water additions. A non-contact infrared temperature measurement and a non-contact radar layer height measurement enable the correct water requirement calculation for a cooling down to approx. 100°C.

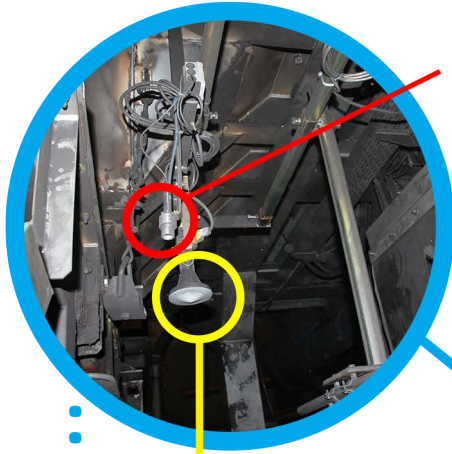
Advantages:

1. Prevents hours of downtime due to high temperatures.
2. Removes the unpleasant temperature peaks in the furan sand and shortens the cooler throughput
3. Reduces the temperature level in the sand circuit
4. Adjusted and controlled addition of water
5. No wear of the temperature probe due to non-contact measurement
6. Flexible adjustment of the working area for cooling down
7. A system with a cost-effective price ratio and low installation and set-up costs

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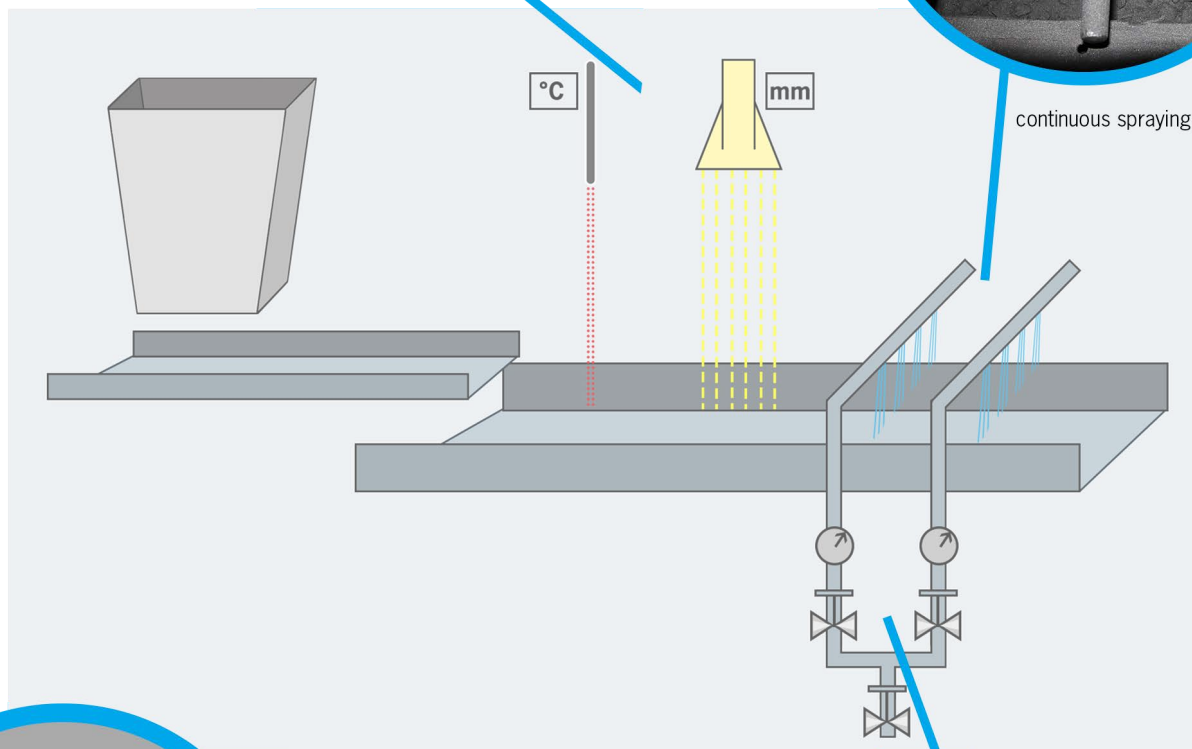
Non-contact infrared
temperature measurement

Non-contact layer height
measurement via radar

Water addition only above 100 °C
Water addition only for measured sand layer heights



continuous spraying

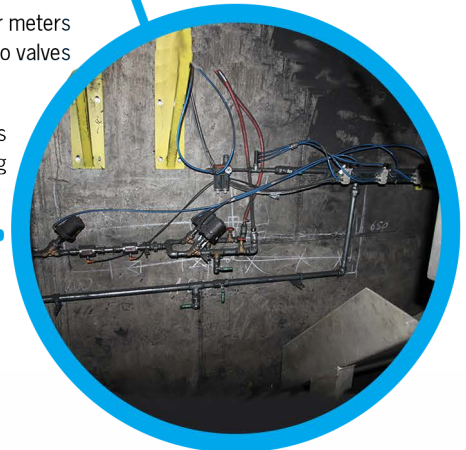


Two water meters
Two valves



PLC with remote maintenance connection
Documentation of water addition

Multi-safe water dosing through double fittings
with mutual monitoring



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