Competence in Solids

SWR engineering

Application example

MaxxFlow HTC

"Supplying intelligent measuring systems for industry since 1994"

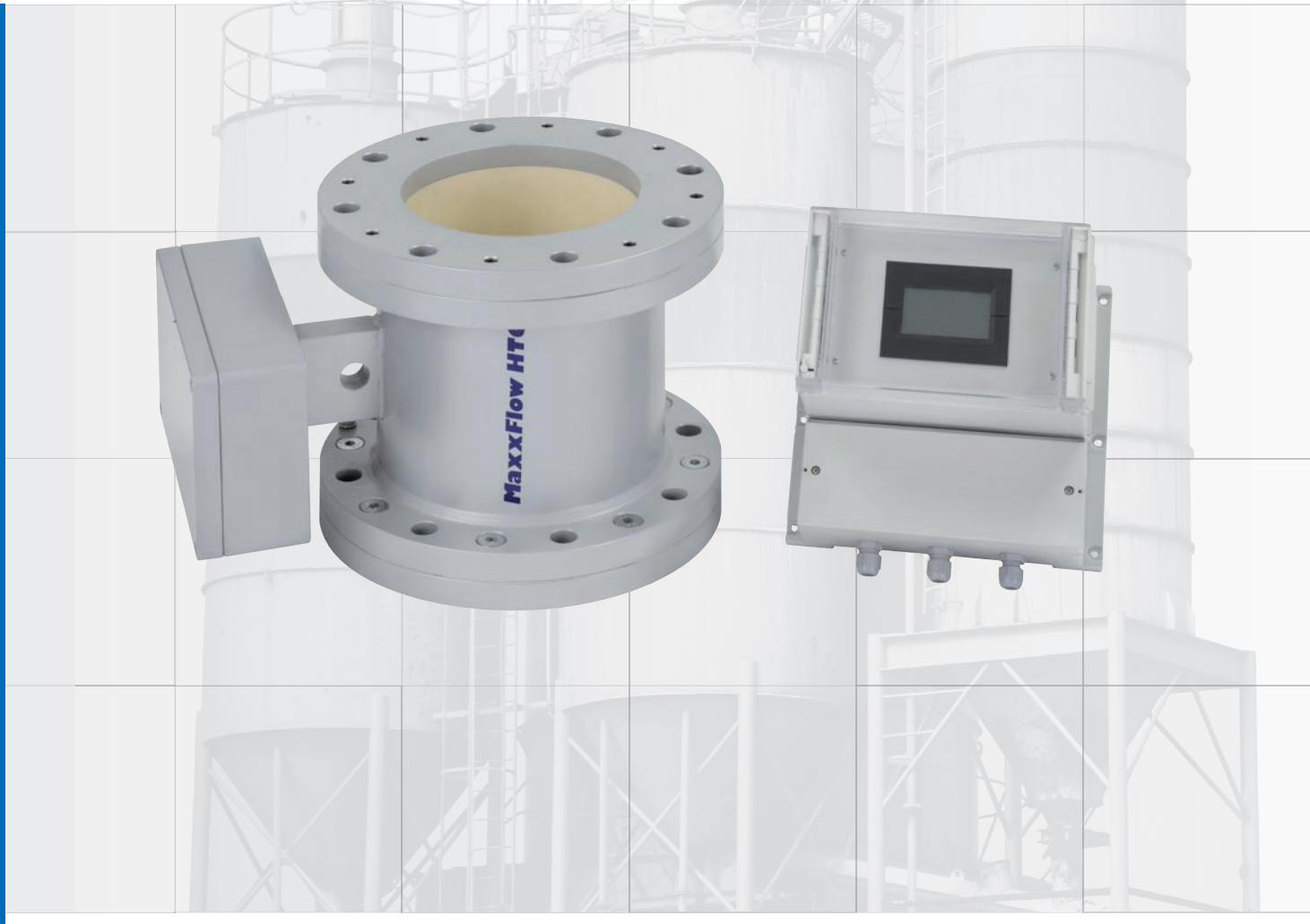
Development

Production

Sales

Commissioning

After-Sales



Process guide cement

SWR engineering Messtechnik GmbH

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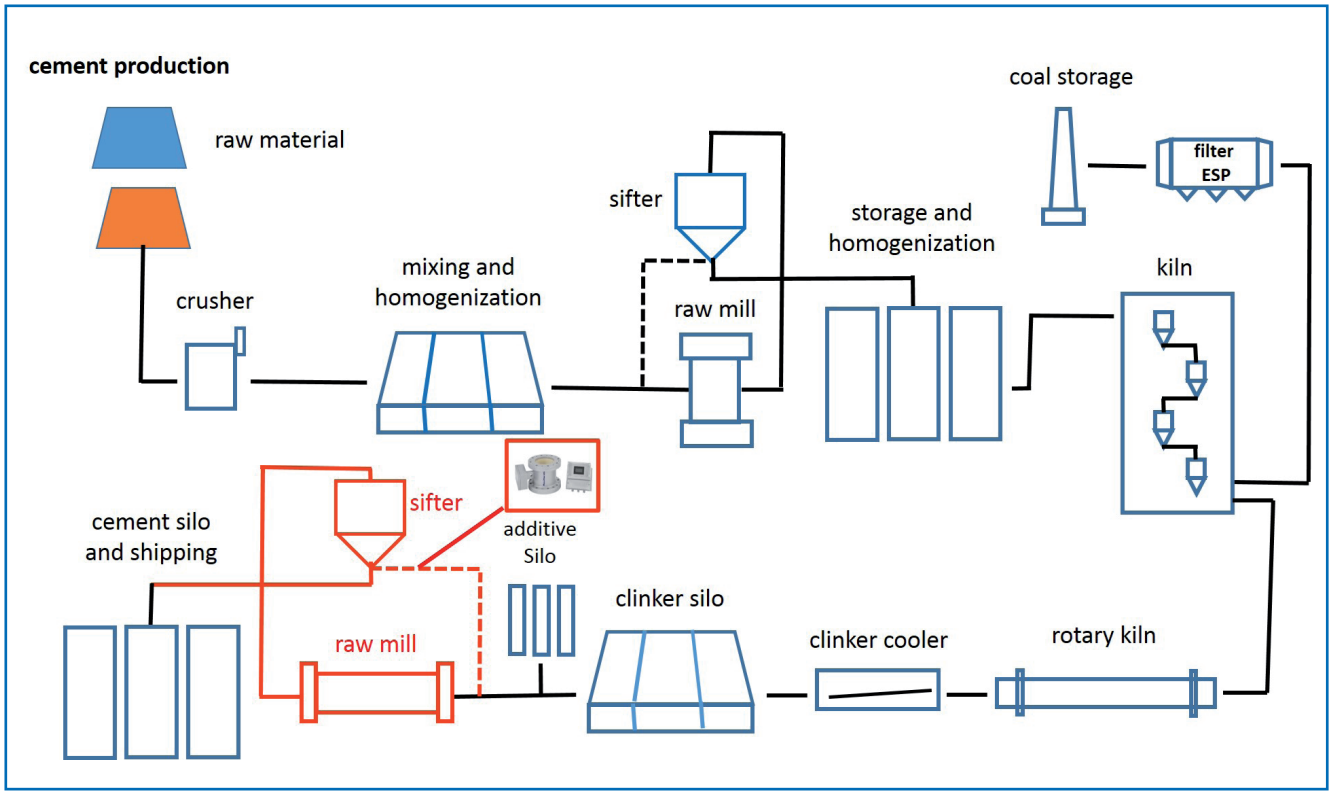

Process

In cement plants the raw materials lime stone, clay, sand and iron or get burned and afterwards milled while gypsum is admixed, which decelerates the hardening process.

The raw materials are won in stone quarries, then they get crushed by stone breakers, afterwards they are delivered to cement plants. In the raw mill all raw materials are crushed and at the same time dried. The raw mills work in a circuit with adjustable sifters, which separate the raw meal that has the required grain size.

The so produced raw meal is burned in a rotary kiln at temperatures of approx. 1400 - 1450 °C to so called clinkers, which afterwards are cooled down on a temperature of under 200 °C.

The burned clinker, which is stored in storage bins, is milled in the cement mill (ball mill) by admixing certain sulfure mediums. Depending on the sort of cement there are different additives used like lime meal and slag sand. With the help of sifters the burned cement clinker is milled up, depending on the different strength classes of the cement. This is the place where the MaxxFlow HTC is used in the mill reject flow (see process description of mill reject flow).

The storage of the cement takes place in silos classified by sorts and strength classes.

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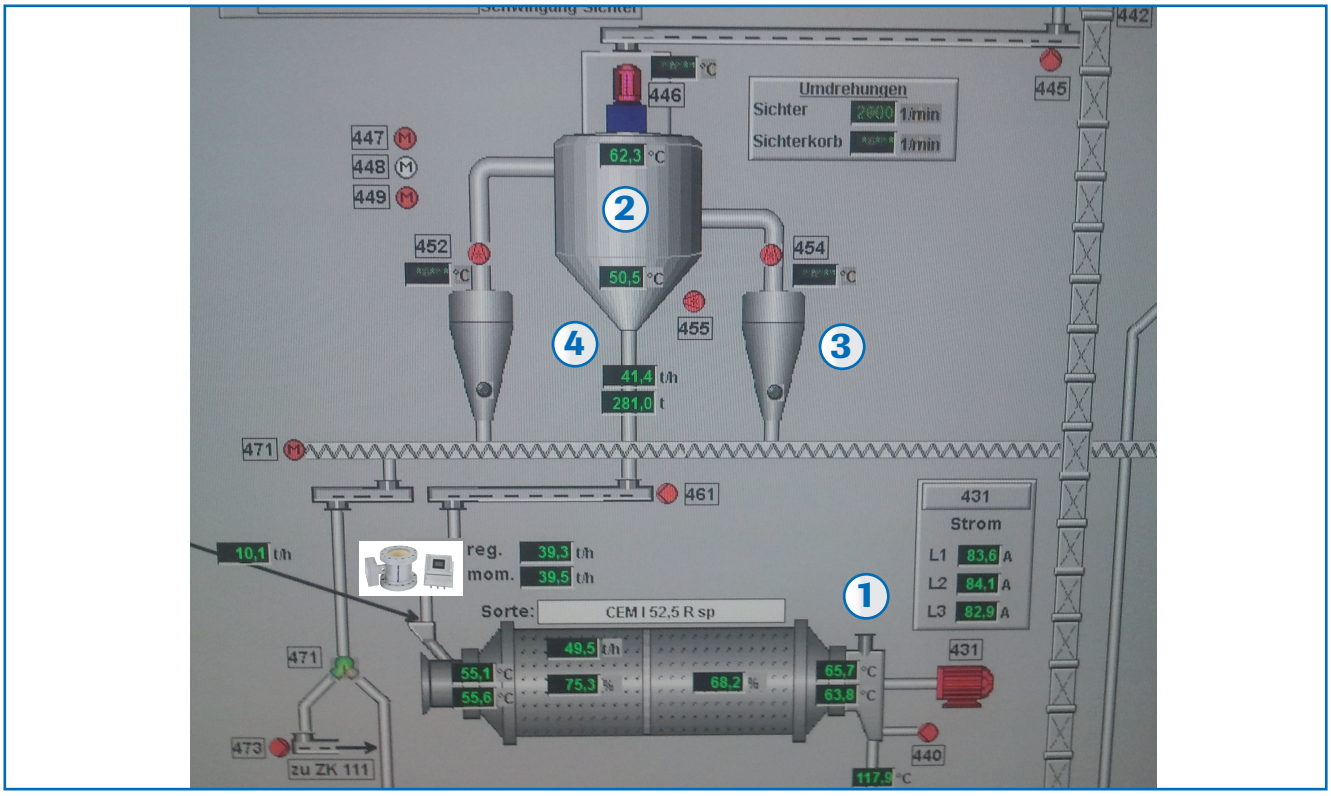

Mill reject flow

The percentage of very fine milled cements increases constantly. The fine grinding of a cement decreases the power of a mill and increases the specific consumption of energy. Therefor it is important to measure the mill reject flow, which is done by the MaxxFlow HTC.

The fine milling process works as follows. The milling of the cement in the raw mill (1) is followed by a sifter (2) where mill material with the required grain size is separated with the help of an airstream (3). The oversized material, that means rougher parts, are transported back to the mill (mill reject flow) (4). The amount of the mill reject gives information about the level of milling.

The amount of the mill reject is important for the operator as an indicator for the efficiency of the mill. He can decrease the rotation speed of the sifter and thereby permit a bigger grain size or reduce the entry of material to the mill and as a result decrease the material level in the mill.

The MaxxFlow HTC measures the mill reject flow and replaces a buffer plate which was used before.

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Customer:	Portland Cement Plant Solnhofen
System:	MaxxFlow HTC, DN 200
Process area:	After raw mill to silo
Material:	Raw meal
Conveying:	Free fall
Transport Device:	Pneumatic conveyor system
Place of installation:	After pneumatic conveyor system, free fall approx. 1.8 m (mill reject flow)
Flow Rate:	Approx. 70 - 130 t/h

Process guide cement

Customer benefit:

Measurement and regulation of the mill reject flow. Until now this measurement was realized by a buffle plate. The MaxxFlow HTC optimizes and accelerates the process.

Economic benefit:

The economic benefit of the MaxxFlow HTC results from the factors low acquisition cost (in comparison with a buffer plate), easy refitting and maintenance- and wearlessfree use.

Compared with the conventional buffle plate it allows an easy calibration without material weighing. This optimization and automation of the process, as well as an easy installation, save time and costs.

Technical benefit:

Remarkable space saving in comparison with the previous used buffer plate system. The MaxxFlow HTC DN 200 for example has an installation height of 310 mm compared with the installation height of a buffle plate system which is 1000 mm.
Thereby results more space for the mill reject flow, for example by a pneumatic conveyor system, installation length and required inclination of the piping can be kept without any difficulty.
The exactness of the measurement is constantly verifiable. An error of measurement of 1.5 % enables a constant process run.

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