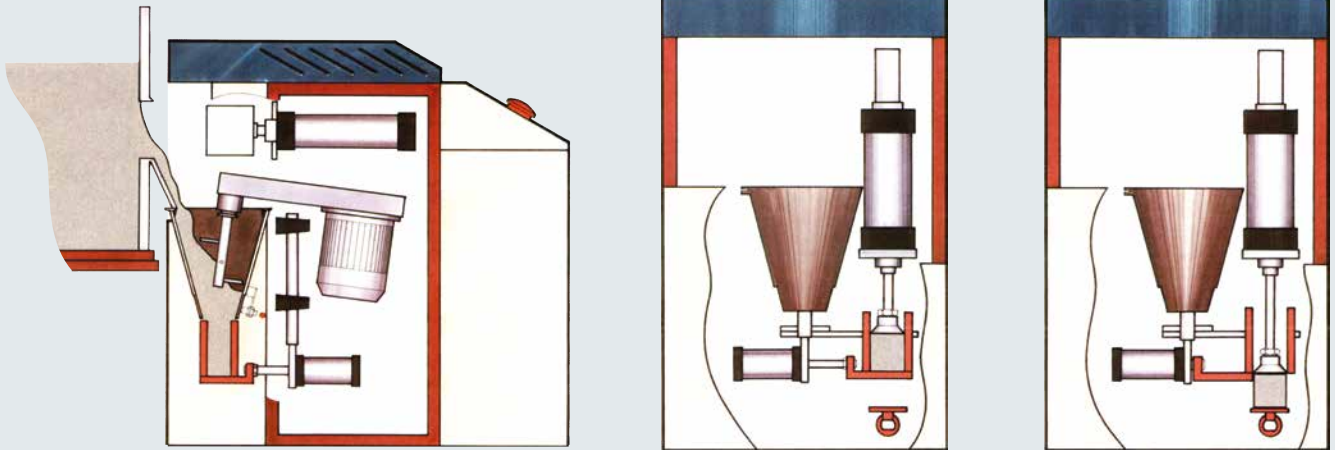


Moulding sand – control and inspection

ROTOCONTROL RTC 107



Task: It should be possible to reproduce consistent values for compactibility and green compression strength in bentonite-bonded moulding material for the moulding plant.

Approach:

Samples are taken from the mixing process as it is running and are used to measure compactibility and green compression strength automatically. These values are then used to determine the amount of water to be added and the dosage of bentonite.

Solution:

The RTC extracts a sample from the running mixing process; measures its compactibility, green compression strength and temperature; determines the amount of water required, which it then adds; determines the amount of bentonite required in accordance with the recipe; determines the anticipated amount of evaporation using the temperature measurement and compensates for it by adding water; stores all of the relevant data and displays it online. Long-term data storage means that the information is available for evaluation at a later date.

6. Constant process monitoring, with recording of all values

Optimisation with moisture measurement (E 1)

Measurement of the inherent moisture in the old sand can also be integrated for exact dosing of water at the preliminary stage, so that the target value for compactibility can be achieved using this water. An additional regulator calculates the difference between the target compactibility and actual compactibility in order to optimise the amount of water added at this preliminary stage.



Advantages:

1. Improved quality of moulding sand and therefore fewer rejects as a result of faulty moulds
2. High profitability of the moulding equipment through elimination of downtime because of poor quality moulding sand
3. Reduction in the amount of cleaning
4. Fewer rejects because of problems with the moulding sand
5. Saving of staff time in preparing the moulding sand



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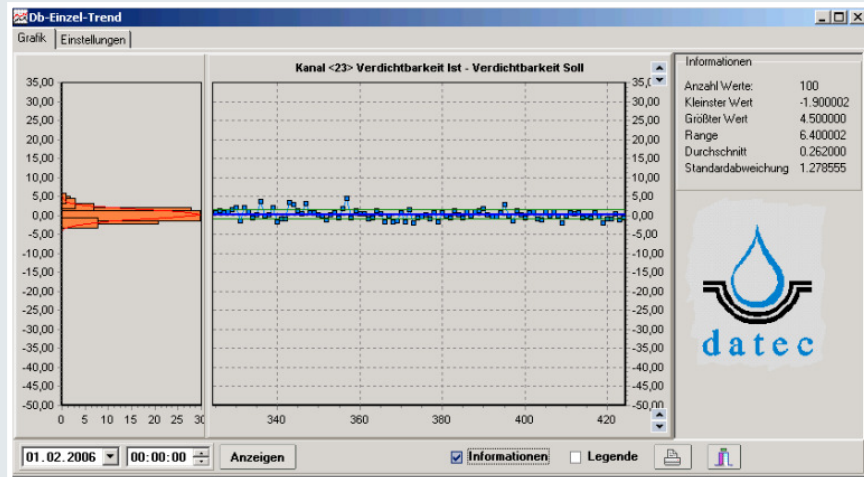
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ROTOCONTROL RTC 107

DView_Analyse

Evaluation

A final measurement is taken for each individual batch when the mixer is opened. The differences between target and actual values over 200 successive batches are shown using our **DView_Analyse** evaluation program. The variations are minimal.

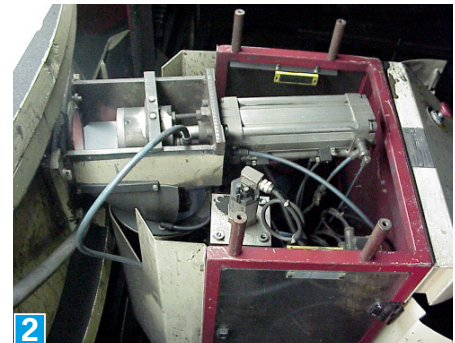


A simple design

Fig. 1: The **ROTOCONTROL RTC 107** positioned on a simple frame directly next to the mixer. After the measurements have been taken, the sand samples fall down onto the discharge belt

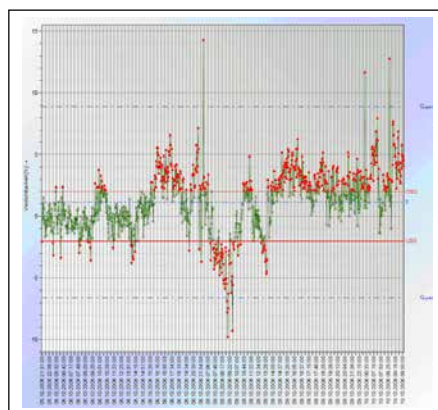


Fig 2: A view from above of the sand extraction from the mixer. The sealing piston is fitted to the mixer, while the **RTC** is positioned next to the mixer and can be pushed to one side for maintenance work

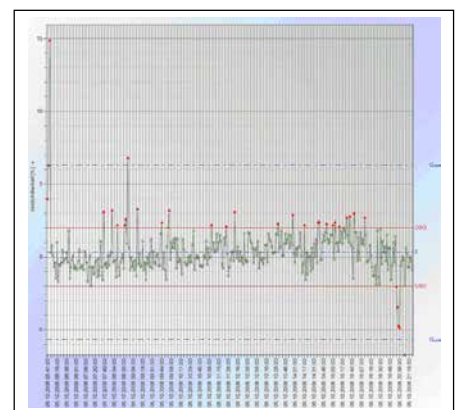


A noticeable improvement

Illustration of compactibility values taken from two production days, which reveal a noticeable leveling out when the **RTC 107** comes into operation. Measurements were only taken in unregulated operation.



Unregulated compactibility



Regulated compactibility

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