

Accurate Weighing of heated batching vessel

Application: Process Weighing

Industry Sector(s): Chemical

The Customer

A German manufacturer of chemicals for the paper industry

Customer Inquiry

An existing batching tank with a volume of approx. 3m³ needed to be modified to allow accurate weighing of the individual ingredients. The existing weighing equipment, which had been in use for a while and which utilized classic load cells, was not functioning properly due to thermal expansion of the vessel. The customer's expectation was that any replacement solution must provide system accuracy in the range of $\pm 0.1\%$.

Solutions and Equipment

Special measures were required to implement a functioning weighing system due to the thermal expansion of the batching tank. Several different solutions were under discussion: modification to load corners with shear beams and complicated mechanics or simple installation of field-proven KIS-8 load cells, which are particularly tolerant against thermal expansion, strong vibrations, and high lateral forces. The client chose the technically superior version - the KIS load cell. The solution was to install 3 x KIS-8 20kN load cells and one G4 instrument.

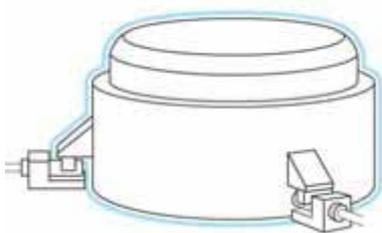


Figure 1: Vibration

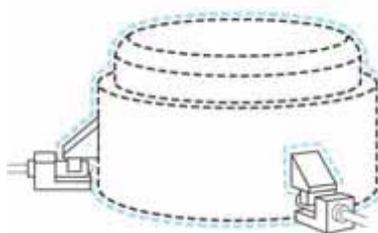


Figure 2: Thermal Expansion

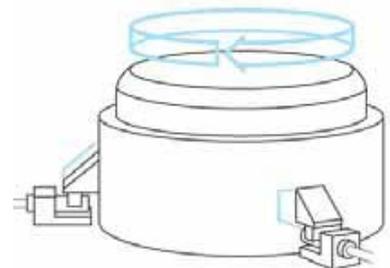


Figure 3: Lateral Forces



Figure 4: Heated tank with KIS-8 Load Cells

Key Features:

- Short installation time required thanks to the easy modification to KIS-8
- Excellent reliability and accurate weighing during heating and other operating conditions
- No maintenance required for many years

Customer Comments

“We are surprised by the high accuracy despite the thermal expansion of the vessel. Installation and start-up was very easy and took very little time.”



Figure 5: G4 Instrument



Figure 6: KIS-8 Load Cell

“With NOBEL KIS 8 load cells and G4 instrument the accuracy of the weighing system is now even better than required and the installation was very easy and fast”

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