

The mixer as used sand weighing device



The task:

Weighing of the materials used in sand conditioning is still the most accurate form of dosing. When upgrading a dosing and mixer station at which dosing was previously performed directly into the mixer, it is recommended that the mixer be placed on pressure pick-ups. That is far simpler and less expensive than installing a tank weighing device.

Approach:

The mixer becomes a used sand weighing device and the used sand is not only conditioned in the mixer but also weighed. Owing to the low mounting height (approx. 30 cm), no major changes have to be performed to the steel construction. The mixer, used sand bunker and its dosing belt can remain as fitted.

The used sand is weighed in the mixer without having to change the whole steel construction.

Solution:

Pressure pick-ups with rod systems are installed under the free-standing mixer to intercept transverse forces. Depending on the size and unloaded weight of the mixer, appropriate measuring accuracies can be achieved. At Eisengiesserei Winter, an iron foundry, a mixer (sand mixer) having an unloaded weight of 19 000 kg was placed on pressure pick-ups and a measuring accuracy of $1d = 20 \text{ kg}$ was achieved. It was then possible to dose exactly batch by batch up to 3 000 kg of unused sand in a reproducible manner without having to change the height of the mixer or the dosing belt. The weighing electronics are responsible for processing the measuring signal for dosing complying with the recipe.

Advantages:

1. Upgrading is possible
2. Slight structural alterations
3. No additional space required as with a tank weighing device
4. A sand quality comparable to that for a tank weighing device is achieved

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