

PROBLEM SOLVED

The Proof is in the Flow!

AIRSWEEP
MATERIAL ACTIVATION SYSTEMS

AirSweeps Keep Fly Ash Flowing

Fly Ash Use in Ready-Mix Cement

To produce a higher grade of cement, ready-mix plants often mix **fly ash** into their product. Used as a catalyst and filler in the ready-mix, the fly ash produces concrete that hardens well and resists cracking. The same characteristics that make fly ash beneficial for the ready-mix, makes the fly ash difficult to handle.

Problem

A Pennsylvania concrete company with six ready-mix plants was experiencing problems with fly ash bridging in bins. The ash was pneumatically conveyed from bulk trucks into an overhead storage bin at the plant. Screw feeders would move the fly ash from the bins into ready-mix trucks where it was mixed with cement, sand and stone within the truck. The **sticky fly ash would bridge and pack up at the bin's outlet**, halting production. Operators would need to manually poke the bin to get the fly ash to flow again. The company originally tried aerators in the overhead bin but they weren't able to free the clogged fly ash.

Solution

Four AirSweep units were installed in one of the plant's fly ash bin. Designed to be installed from the outside of the bin, they were installed while approximately 8 tons of fly ash was still in the bin. The AirSweeps were placed at different levels on the bin. Plant air was used at an average of 7.2 scfm at 90 psi. The 1/4 second burst from the AirSweeps were timed to pulse at 20 second intervals. The immediate reseal of the unit's valve after each pulse prevented material from clogging the system.

Results

After the AirSweeps were installed, fly ash moved freely from the bin to the ready-mix truck. "Production went from zero percent to 100 percent overnight after installing the AirSweep units," stated the quality control technical service manager at the plant. **The plant increased production by 60 percent.** Workers were able to perform other tasks since they no longer needed to free fly ash. Since the initial installation on one bin, the company installed more units on fly ash bins in their other plants.



Past attempts to move fly ash with other equipment, such as the pneumatic vibrator shown on the left, proved ineffective. AirSweep unit is on the right.



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