CASE STUDIES

Precast Concrete: Dust-Collection System Upgrade

Replacing a Costly, Inefficient Dust-collection System Delivers Savings in Time, Money, and Bulk Material

Introduction

This job story showcases the problems that can result from a poor dust-collection system and an insufficient understanding of bulk material handling science.

A precast concrete plant located in southeastern

Pennsylvania was struggling with a centralized dust-collection system with multiple shortcomings that regularly interrupted and slowed the plant's operations. It was difficult to use, difficult to service, and was not adequately controlling dust.

Problem in more detail

The plant's centralized dust-collection system was pulling from two different silos, one holding cement and one holding fly ash. As the dust from both silos ended up in one ground-mounted collector, the collected cement and fly ash were contaminated and became waste. The system was also difficult to service and the pipes running from the top of the 60-ft. silos to the dust collector on the ground were prone to clogging. At least once a week, the system needed to be cleaned out. Equally important was the fact that the system was not doing an adequate job of controlling the dust, allowing excessive amounts to escape into a residential neighborhood.

Finally, operating the dust collector was unduly complicated: Its two-button start process was not familiar to the truck drivers who were making deliveries of material and needed to start up the equipment. As a result, as often as twice a day plant staff would need to interrupt their work to assist the drivers.

All in all, the poor system was probably costing the plant tens of thousands of dollars annually.

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Solution

The AIRMATIC team recommended a new system featuring silo top venting filters instead of a ground-based dust collector. These effective, efficient units are easy to maintain, use less energy to operate, and allow material to be preserved rather than wasted. (Instead of dust being collected, a filter allows only the air to escape while keeping the fly ash and cement in their respective silos.) The Silotop vent filters also cost the plant less than replacing the existing dust collector.

In addition to supplying the new equipment, the AIRMATIC team provided turnkey installation services that included everything from cutting, welding, and running the necessary air lines to bringing in crane services to place the units atop the two 60-foot-tall silos.

Conclusion

The plant manager who had been continually frustrated with the previous situation is now happy and planning to do more business with AIRMATIC in the future.

Kevin McGonigal, AIRMATIC Account Manager, had this to say about the job:

“The principles of material handling science are real, and it’s what we do.”