



# PROBLEM SOLVED™ D5D9F

**SOLUTION:** Martin® Air Cannons

**INDUSTRY:** Cement

**LOCATION:** Ash Grove Cement Company  
Louisville, Nebraska



*Ash Grove Cement Company in Louisville, Nebraska*



*Martin® Air Cannons with Martin® Thermo Safety Shield*



*Martin® Air Cannons were installed on the pre-heater tower.*

## PROBLEM

The Louisville plant used water blasting to remove material buildups from the pre-heater tower's riser duct. Personnel were required to open access doors into the tower twice a day to remove the accumulations with a high-pressure water spray. This work was time-consuming.

The water blasting caused production problems, dropping lumps into the kiln feed, downgrading kiln efficiency and clinker quality.

## SOLUTION

To control the material buildups, the plant ordered installation on the kiln riser duct of a battery of twenty-five Martin® Air Cannons supplied by Martin Engineering. This installation placed the air cannons below the riser orifice, where the duct is reduced in size to increase air velocity.

The installation included the Martin® Thermo Safety Shield to protect maintenance personnel when they inspect or service the air cannon system. A crew from MartinPLUS® Services performed the project.

The air cannon discharge sequence moves upward in a spiral, with one air cannon firing and the next firing twenty seconds later. The entire system discharges over an eight-minute cycle, and then repeats. Control room operators can alter the firing schedule to adjust for kiln pressures readings. The plant has varied cycle length from eight minutes to as much as forty-five minutes, depending on operating conditions.

## RESULTS

Following the installation of the Martin® Air Cannons, the plants eliminated the water blasting. Louisville process engineer Mark Junkins noted, "We went from lancing twice a day, to lancing perhaps once a week. We continue to need it occasionally now, because of changes in our fuels or material, but we do not have the problems we had before. And we can see the air cannon system has paid for itself, by allowing us to maintain production without the interruptions and the issues that the water blasting created."

Now, the plant has observed some material adhesions higher in the pre-heater. During its next shutdown, the plant will add an additional set of air cannons, this time installing them above the tower orifice.

*Martin® XHV Air Cannon Valve is protected by U.S. Patent No. 5,853,160.*

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