



PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Air Cannons

INDUSTRY: Cement

LOCATION: Holcim Devils Slide Plant
Morgan, Utah



Material buildups in the pre-heater tower at the Holcim Devils Slide Plant led to the installation of Martin® Air Cannons.



MartinPLUS® Installation technicians installed a total of 21 air cannons on the pre-heater tower.



After the installation of the air cannons on the kiln, feed shelf, alkali bypass and riser duct, material flow through the pre-heater was more consistent.

PROBLEM

Material buildup on the pre-heater feed shelf choked the flow of material into the kiln.

The plant is a new, state-of-the-art facility, commissioned in 1997, but designed without air cannons on the pre-heater tower. Consequently, material flow through the pre-heater was subject to blockages, requiring excessive (and potentially risky) labor. To clear the buildups required three or four workers, using jackhammers through access ports, working around the clock. The workers were exposed to about 850°C (1560°F) temperatures on the pre-heater tower.

SOLUTION

Martin® Air Cannon

A total of twenty-one Martin® Air Cannons were installed on the kiln pre-heater, concentrated around the feed shelf and the system's alkali gas bypass. MartinPLUS® Installation technicians installed the high-temperature air cannons.

The firing sequence for the air cannons was set so one cannon fires every 30 seconds. The sequence moves through the entire air cannon installation, starting from the kiln feed shelf and working up, alternating side to side, until all the cannons have fired and then starts over.

RESULTS

Following installation of the air cannon system on the plant's kiln feed shelf, alkali bypass and riser duct, the flow of material is more consistent and buildups are reduced.

Evidence of this flow improvement is in the decrease in the labor required to remove blockages. Presently, blockage removal requires just two personnel, working two times per shift, for 20 minutes a time, to keep the pre-heater open.

The air cannon system was designed to be readily expandable, in the event that future operating experience shows the need for additional cannons.

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

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