

# Dust Suppression Application Saves Cement Producer US\$200,000

## Challenge

A Caribbean company produces and exports clinker for use in cement production. During handling the hot clinker process generates significant amounts of fugitive dust, which is considered a nuisance and health hazard. The process begins when hot clinker is transferred from the cooler to a 55-foot (16.76 m) belt conveyor that moves it to a hopper for loading onto 30-ton (27.22 metric ton) trucks. The trucks transport the clinker to a temporary storage location prior to loading it aboard ship for export. Unless the fugitive dust was brought under control, the plant would not be allowed to transport the clinker to the ship.

## Solution

GE Water & Process Technologies was brought in to audit the process and develop a solution that would assure environmental compliance. A dust suppression system was designed and installed and the application of DusTreat\* DC9114 was started, feeding the product onto the conveyor belt. Variables such as clinker temperature, recycle dust and production rate were factored into the design of the chemical feed and spray equipment. During the trial, production varied from 133 to 190 tons/hr (121 to 172 metric tons/hr) with a bulk temperature range of 250° to 325°F (121° to 163°C). The clinker heat balance was identified as the most important variable for dust control. GE recommended using automation to minimize the problems associated with load swings

## Result

The application of the DusTreat DC9114 controlled the clinker dust during transport, with the following results:

- All permitting issues were resolved.
- The fugitive dust control produced an environmentally safer work environment.
- The customer saved US\$200,000 in export business that would have been lost without the dust control in place.
- The customer saved US\$0.083/ton in dust suppression.

Figures 1 and 2 show the dramatic reduction in dust at the conveyor and hopper transfer point.

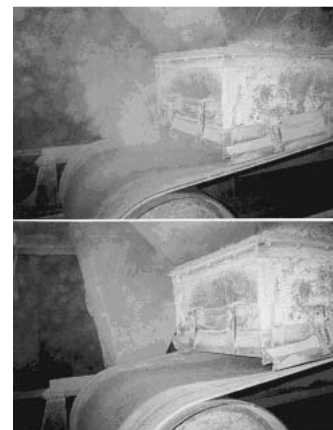


Figure 1 - Conveyor Transfer Point - Fugitive Dust Comparison



Figure 2 - Hopper Transfer Point - Fugitive Dust Comparison



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