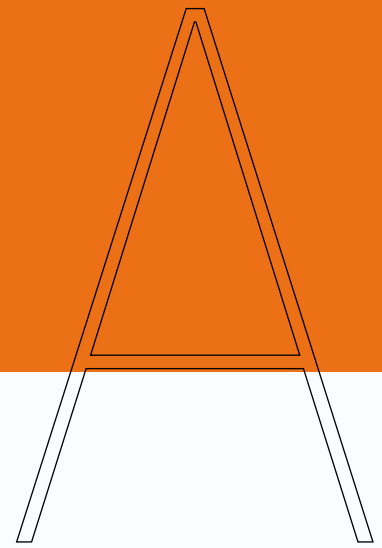


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Engineering, USA,

describes how the
company solved a
problem in cleaning
weighfeeder belts with
a special belt cleaner
at the GCC Dacotah
cement plant.



Specialised Solution

Introduction

The GCC of America, Inc. Dacotah plant, which is located in Rapid City, South Dakota, produces 1 million tpa of cement. The company, previously known as South Dakota Cement, employs approximately 160 full-time employees to serve parts of North Dakota, South Dakota, Minnesota, Iowa, Nebraska, Colorado, Wyoming, Montana, and Kansas.



The problem

To add the raw materials, sand, shale and iron ore, onto belt conveyors that take them to the roller mill to be ground for kiln feed, the plant uses a total of nine weighfeeders.

To contain the materials, the feeders feature corrugated sidewall belts, but these prove to be a mixed blessing, as the 5.75 in. (146 mm) height of the sidewalls interferes with the ability of conventional belt cleaners to remove residual material. As a result, the belts could not be cleaned effectively.

As a consequence, carryback material would stick to the feeder belts, pass the conveyor's discharge point, and then fall off, as the belt returned to the loading point. This fugitive material built up under the feeders and spread throughout the facility.

The solution

Dacotah plant officials turned to Martin Engineering for a belt cleaning solution.

To remove the residual material from the sidewall belts on the three most problematic weighfeeders, Martin Engineering's belt cleaner technical support personnel proposed a modified version of the company's MARTIN® QC™#1 Heavy Duty Pre-Cleaner.

This belt cleaner uses a rugged moulded urethane blade. The blade is designed with the patented CARP (Constant Angle Radial Pressure) blade design that maintains consistent cleaning performance through all stages of blade life. When blade replacement is required, the QC™ #1 Heavy Duty



Weighfeeders at GCC of America Inc., Dacotah plant use corrugated sidewall belts.



Carryback was a problem due to difficulties in cleaning the weighfeeder belts.



To solve the problem, Martin Engineering provided belt cleaners with a specially-modified mainframe.



After installation of the modified belt cleaners, the carryback on the weighfeeder belts was controlled.

Pre-Cleaner incorporates a one-pin replacement system allowing fast, easy, no-tool blade service.

To install the unit on the Dacotah's plant's weighfeeders, the belt cleaning specialists proposed a specially-modified mainframe. This featured an extended mounting spine that increases its distance from the belt. The modification raises the cleaning edge 4.64 in. (118 mm) while centering the blade between the sidewalls of the belt feeder. The special mounting allows the belt's corrugated sides to pass without problems.

Following installation of the MARTIN QC #1 Heavy Duty Pre-Cleaners with the special mainframes, belt cleaning was noticeably improved, and the accumulation of material under the weighfeeders was significantly reduced.

Plant officials note that the plant has reduced clean-up chores from roughly a wheelbarrow full of material every three days, to about a quarter of a wheelbarrow in a two-week period.

Plant officials noted these belts show significant wear, including small pockets across their load-carrying surface. Consequently, the belt cleaners are unable to totally clean the indentations. Plant officials are confident that new, smoother belts would virtually eliminate the problem.

Martin Engineering representatives were congratulated by employees of the Dacotah plant of GCC of America, Inc., for solving this difficult and long-standing problem.