

VIBRA SCREW CASE HISTORY



C-229

Bin Activator Pays for Itself at Hern Iron Works

Customer

Hern Iron Works, Coeur d'Alene, Idaho. Gray iron foundry whose main products are municipal iron.

Problem

The nearest and best source of molding sand in the Coeur d'Alene mining district is Olivene sand. Its bulk density is 110 lbs. per cu. ft., particle size is between 40 and 100 mesh, and moisture content ranges from 2 to 5%. At the Hern Iron Works, Olivene sand is stored in a 10-ft. diameter bin having a 20 ft. straight side with a 60° transition. The sand is lifted into the bin by a bucket elevator and it is discharged into a batching hopper. After its use in casting, it is returned to the storage bin, often at temperatures of 90 to 110°F. Olivene sand has good life in this usage because it is more refractory than conventional sand and it can be heated repeatedly without breaking down. However, it packed so badly in storage that the bin had to be pounded on with a hammer. On many mornings, it would have to be laboriously scraped loose with a shovel and poked down with a bar to help induce flow.

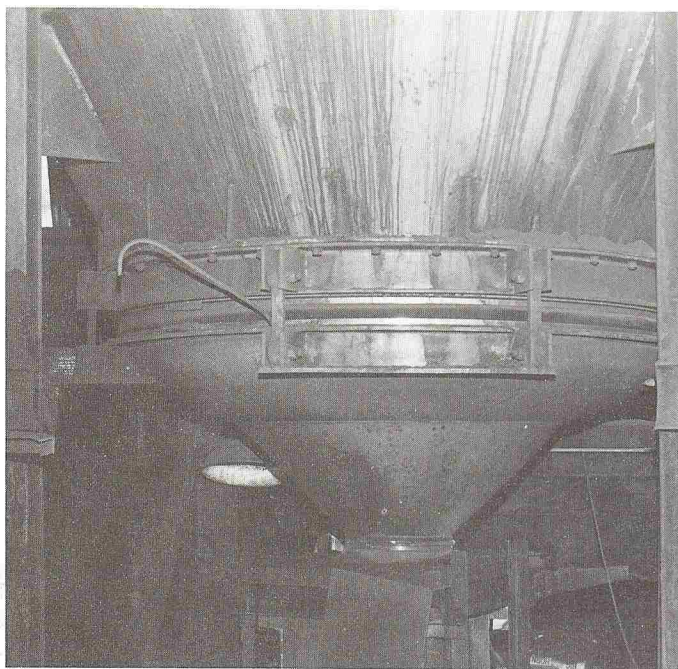
Solution

Vibra Screw Bin Activator, 7 ft. diam., carbon steel construction.

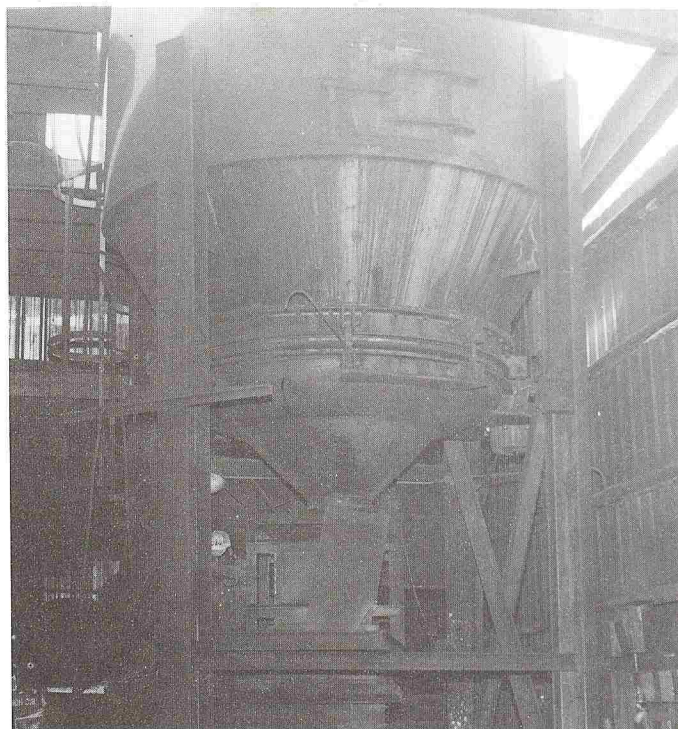
The company decided to install a Vibra Screw Bin Activator based on its success in handling other foundry sands. The unit was mounted to the bottom of the storage bin by means of a preassembled mounting ring. The Bin Activator is a vibrated bin discharger which promotes positive flow of material through powerful horizontal thrusts from its gyrator. The unit has a unique dished-head design which permits horizontal disengagement of particles for maximum efficiency. Directly above the outlet, an integral baffle relieves the headload in the bin and resolves the horizontal thrusts into vertical impulses extending far up into the material in the bin. The combined forces of horizontal disengagement and vertical mobility keep sand moving, even when it is very hot and sticky.

Results

Sand now flows at a rate of 30 tons per hour to the batching hopper. Since its installation about a year ago, the Bin Activator has paid for itself in savings on downtime and through increased production.



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The Bin Activator is a vibrated bin discharger which promotes positive flow of material through powerful horizontal thrusts from its gyrator (right). Sand at Hern Iron Works now flows at a rate of 30 tons per hour to the batching hopper.