

VIBRA SCREW CASE HISTORY



C-231

New Automated Asphalt Plant Moves Dolomite With Controlled Vibration

Customer

McAdams Manufacturing Co., Inc., Cincinnati, Ohio.
Manufacturer of coatings, laminations, roofing,
automotive and highway products.

Problem

As one means of improving the durability and weathering characteristics of its different asphalt products, McAdams Manufacturing combines the asphalt with different percentages, in precise amounts, of dolomite. The dolomite, whose particle size is mostly around 100 mesh, has a bulk density of 80 lbs. per cu. ft. In storage, dolomite tends to pick up moisture from the air and cake, which may cause erratic flow. When the company recently installed a completely new, fully automated system, they needed accurate control over the amount of dolomite flowing to the mixer for the system to be effective.

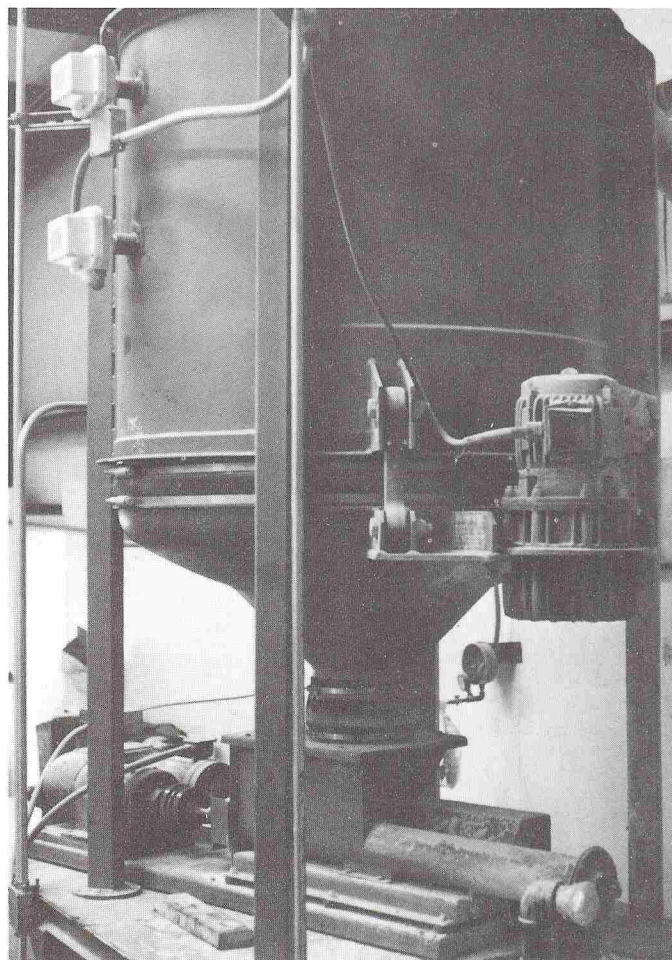
Solution

Vibra Screw Live Bottom Bin LBB 4-50, carbon steel construction. Vibra Screw Heavy Duty Feeder HD-2, 4-in. flight screw.

After a thorough investigation of competitive equipment, McAdams Manufacturing decided to install a Live Bottom Bin and Heavy Duty Feeder combination. The Live Bottom Bin consists of a static cylindrical bin (50 cu. ft. capacity) and a Bin Activator (4 ft. diameter) which is subjected to controlled vibration. The Live Bottom Bin has an integral baffle positioned directly above the outlet; its function is to prevent packing and to transmit vibration into the stored material to prevent bridging. The Heavy Duty feeder is a ruggedly built volumetric screw feeder with a vibrating trough and a rotating and vibrating feed screw. Vibration in the trough section maintains uniform density of the material so that each flight of the screw is completely filled and emptied. This permits accuracies of $\pm 1-2\%$ minute-to-minute. Feed rate of the dolomite is 3,000 to 9,000 lbs. per hour as it is conveyed by auger from an external 35-ton silo to the Vibra Screw equipment and from there, continuously and uninterruptedly, to the mixer. Bin indicators activate the auger whenever the level in the Live Bottom Bin drops below half full.

Results

The Vibra Screw equipment has provided reproducible accuracy of the amounts of dolomite entering the mixer, thus ensuring correct proportions for the various products being made. The equipment has been working well since its installation, and an official says, "it has given us no trouble whatsoever."



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