

VIBRA SCREW

CASE HISTORY



C-251

Added Bin Activator Ensures Steady Feeding Of Kaolin Clay

Customer

Burgess Pigment Company, Sandersville, Georgia, producers of pigments for paint companies throughout the United States.

Problem

Having previously met the challenge of freely discharging kaolin clay (also known as terra alba) from cylindrical bins as large as 12-ft. diam. x 15 ft. by using Vibra Screw Bin Activators, Burgess recently faced an additional flow problem in regard to a 7½-ft.-square x 20-ft. bin. As before, the handling difficulty sprang from kaolin's characteristic tackiness.

It has been demonstrated that when thrown against a wall, the clay will stick to it. And yet, with its fine particle size (-325 mesh) and low density (25 lbs./cu. ft.), it can fluidize to such an extent that it will stream from even the tiniest crack. When being discharged from the bin, which is equipped with a rotary airlock at the outlet, the clay often packed and bridged. Even when the material was flowing, discharge was far from steady; instead, it came in surges.

Controlled Vibration Equipment

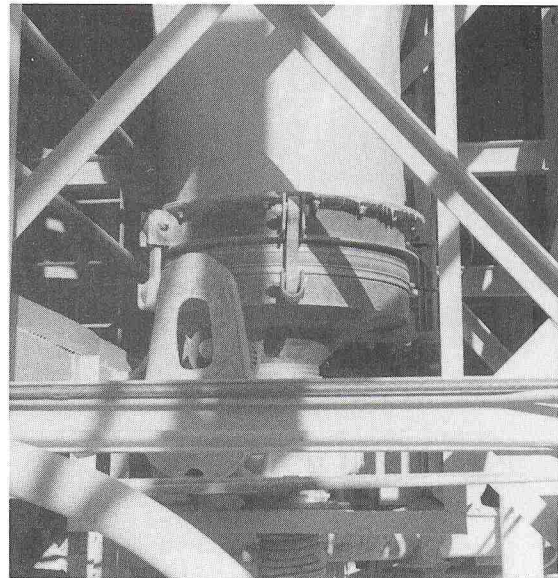
A 3-ft. Vibra Screw Bin Activator, carbon steel construction.

Solution

To remedy the flow problem, the company cut off the bottom of the tank above the airlock and had a square-to-round transition fabricated that would adapt the Vibra Screw Bin Activator to the tank. The bin activator was inserted between the transition and the rotary airlock. This amounted to retrofitting a vibrated bin bottom flexibly hung from the bottom of the storage bin and replacing much of the bin's compaction-causing static cone section. In operation, vibrations are transmitted throughout the material to make it mobile and free flowing while simultaneously densifying it to control any tendency to fluidize. Discharge is positive and controlled at production rates of 1½ tons per hour.

Results

By using the bin activator, the same steady feed rates achieved earlier with other Burgess equipment are now being maintained for this square tank. In an air classifier operation of this kind, constant feed is a critical requirement, Burgess executives point out.



Vibrated bin bottom that replaced compaction-causing static cone section solved flow problem at Burgess installation.

