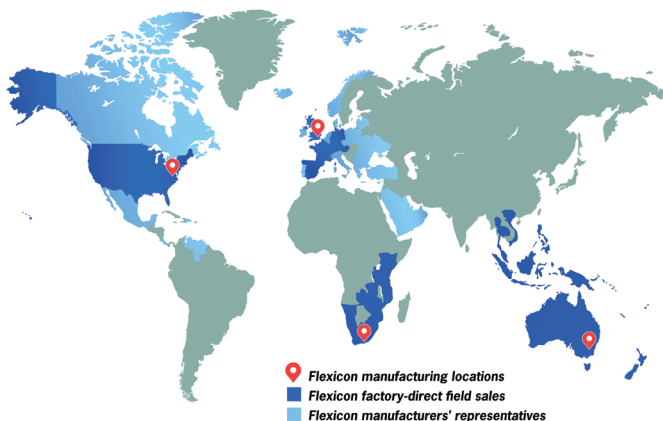




Mobile bulk bag filler connects to silo via rotary flow control valve mounted on the fill head. Frame-mounted control panel and forklift sleeves permit easy moving of the filter. A dust collection line connects from the fill head to the plant dust collection system.

Coatings Manufacturer Cuts Packaging System Downtime With Mobile Bulk Bag Filler

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Coatings Manufacturer Cuts Packaging System Downtime With Mobile Bulk Bag Filler

JACKSONVILLE, FL — Johnson Matthey Structural Ceramics has built a flexible new plant where three skid-mounted 50-lb bag packing machines and a bulk bag filler move among four silos in packing various grades of zircon powder opacifier ranging between 1.5 to 12 microns.

As one of the world's largest suppliers of color and associated coating materials, Johnson Matthey sells zircon as an alloying agent in ceramic compounds. In the Jacksonville plant, two ball mills crush 100 mesh, high bulk density (170 lb/cu ft) zircon material, processed from Florida mines, to four grades, which are loaded into four 50-ton silos. Three skid-mounted bag packing machines, under gain-in-weight control, fill different size 50-lb multi-wall paper bags. A mobile Flexicon bulk bag filler, also under gain-in-weight control, fills bulk bags weighing between 1000 to 4000 pounds. To bag each grade, the bag packing machines and bulk bag filler move by forklift from one silo to the next up to three times a month.



Operator inputs settings on frame-mounted control panel. Load cells transmit gain-in-weight information to controller which actuates a rotary valve, filling bags to +/-1% accuracy.

Cuts Labor Downtime

The mobility gives operators eight hours more per month to pack bags instead of move machinery. Dan Rooney, general manager, says he designed the flexible packaging system to combat downtime experienced at similar plants. In a conventional installation, relocating stationary bag packing machines or bulk bag fillers is a 3-hour affair. Plant electricians and mechanics, under supervision of the packing machine operators, disconnect floor fastener plates, wiring and pneumatic lines, move the machine, bolt it down, and reconnect the wiring and pneumatics. The operator may also need to recalibrate the bulk bag filler's load cells and weigh-batch controller.

The mobile bulk bag filler, from Flexicon Corporation, features forklift sleeves, an 8-in diameter rotary flow control valve mounted on the fill head to control flow from the silos, and a frame-mounted control panel that requires no calibration between moves.

Skid-Mounted Bulk Bag Filler Moves Easily

When moving the bulk bag filler, the operator unplugs its power line from the station's 440-volt outlet and disconnects the pneumatic line. A forklift moves the filler to the next station, where the operator plugs the power line into the station's 440-volt outlet and connects to a pneumatic line suspended from the ceiling. The transfer takes approximately five minutes.

Strengthening the 60-in wide by 126-in tall Flexicon bulk bag filler for its frequent moves are twin 5-in tubular centerposts and an additional rear post.

In operation, the load cells and system controller remain unaffected by the filler's automated vibratory densification/deaeration bed, which stabilizes and settles the material to fully fill the bag. Inflatable air mounts located at the bottom of the frame raise the bed, isolating the frame from vibration.

Bulk Bags Filled to +/-1% Accuracy

Gain-in-weight controls the rotary valve on and off to fill bulk bags to 1% accuracy. Load cells located under the bulk bag filler frame transmit gain-in-weight information to the system controller proportional to the load of bag and filler. Once the accurate fill weight has been loaded, the controller switches off the rotary valve.

The fill head is equipped with an inflatable rubber membrane facilitating a rapid, dust-tight seal to the bag spout. As an added measure, Rooney plans to connect the fill head's dust collection port to the plant dust collection system.



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