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***Bulk Bag Unloader with Integral GeoMate™ Feeder,
Bag Dump Station to AMC Conveyor to Bulk Bag Filler
Product – Titanium Dioxides, Clays, Silicates
Case History #3S-1214***

Background:

A major paint manufacturer approached 3Sigma needing a unique system to meet their new production capabilities. To make their paint, many different ingredients, from both bulk bags and sacks, had to be emptied into a second bulk bag, which is then discharged to the client's process. 3Sigma worked with the customer to meet their specific requirements and needs. Vibrascrew was the other serious bidder the client considered. Our mass flow, no moving part feeder; unique /compact design and experience handling TiO₂ were the main factors in receiving the contract.

Customer Needs:

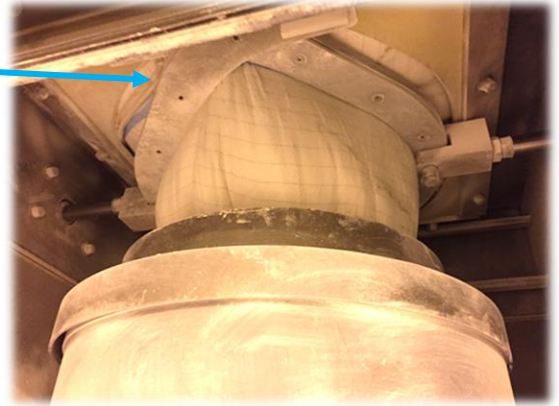
- Proper discharging of various products provided in bulk bags. Difficult to handle products.
- Products include: Titanium dioxide, Silicates, Clays and others.
- Accurate batching, by weight, the desired amount of each ingredient
- Ability to re-tie and remove half used bulk bags
- Ability to manually add 50 lb. bags into the same system
- Convey and fill bulk bags. Each filled bulk bag is the proper mix for the next process.
- Minimal airborne dust
- Reliability – This system feeds their plant and must run continuously.

Solution:

- 3Sigma provided the client with a bulk bag unloader, feeder, bag dump station, AMC conveyor and bulk bag filling system.
- The bulk bag unloader is set on four load cells, for loss-in-weight batch feeding. 50 lb. sacks are manually added through the bag dumps station.
- 3Sigma combined both a bag dump station and bulk bag unloader into one seamless unit. The GeoMate™ feeder discharges through the rear of the bag dump hopper.
- The GeoMate™ feeder was chosen, specifically for TiO₂ as there are no moving parts, no friction, no heat and no binding that is found with screw feeders.
- The hoppers were coated with Teflon for best product flow.
- The AMC conveyor includes special SS aeration media at the AMC inlet, inlet sprocket and outlet sprocket to prevent TiO₂ buildup and eventual blockage.
- In operation the recipe is chosen. The operator is prompted for product and amount required. Once this is reached, the next product and amount required is prompted. Bulk product is added first, through the unloader, then 50 lb. sacks are added as prompted by the PLC.



- The Tube-It™ spout connects to the bulk bag on the inside of the Contain-It™ chamber and the feeder on the outside, creating one dust tight system
- The Close-It™ system inside the chamber allows the customer to tie and remove half-used bulk bags
- 3Sigma's GeoMate™ mass flow feeder prevents ratholing and bridging from occurring as material is introduced to the feed tray



3Sigma supplied an AMC conveying system that transferred the material from the hopper below the bag dump station to a second bulk bag



Bulk Bag Unloader

The full sized bag dump station supports 36" x 24" bags that empty into the AMC

BETTER BY DESIGN™

