

Rising Fuel Costs and Material Handling

How to Avoid Being Blindsided

Rising fuel prices change the dynamics of many decisions facility managers make each day. One common, but often overlooked example is the impact of transportation fuel on how bulk product is delivered.

Companies who ship product such as salt, flour and other common powdered ingredients, in pneumatic trucks, and unload that product into bulk silo storage using a positive displacement blower, work in lots of 44,000 lbs. per delivery. For products such as these, the distance at which this is feasible, given the inevitable dead-heading on the return trip, has been 350 miles or less.

With the cost for diesel averaging \$2.56 nationally (in dollars per gallon, including taxes, per Energy Information Administration / US Dept of Energy, August, 2004 vs. August, 2005) – up 40% from a year-ago, that threshold is essentially cut in half – to a distance of between 175 and 200 miles. The percent of runs effected by this is substantial - estimates offered by our customers range from one in three, to more than 70%. Clearly, some

fresh thinking is needed if costs are to be controlled as much as is possible.

One alternative that offers both vendors and processors a high degree of flexibility, and maximum control over transport expense, is a system based on bulk bags. Bulk bags are 100% polypropylene, UV treated, and can be coated or uncoated, depending on the application. They are sometimes referred to as Super Sacks or FIBCs – Flexible Intermediate Bulk Containers, and are an excellent alternative to both bulk silos, and 50 lb. paper bag systems.

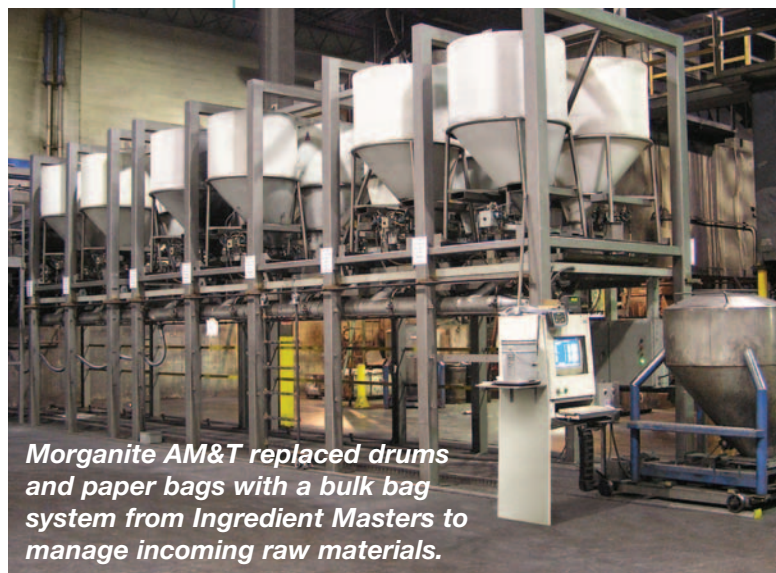
Bulk bag systems are appropriate for products ranging from talc to chemicals, flavorings to pharmaceuticals. They are widely used in the ag and fiberglass industries, and by refractories and ceramics manufacturers. A typical system incorporates a series of special bulk bag lifting frames that position individual bags, each containing 2000 to 3500 pounds of material and delivered via common carrier, ready for dispensing.

The conversion to a bulk bag system is neither time-consuming, nor costly; a custom-engineered, modular bulk bag system typically pays for itself, under the current cost structure, in 16 months or less. Lead time from approval of system design through installation and commissioning averages ten to twelve weeks, due to the use of many standard hoppers and other components.

Continued on page 30 . . .



IBR (Integrated Bakery Resource) used a bulk bag system manufactured by Ingredient Masters to streamline material handling, and as a hedge against future cost increases.



Morganite AM&T replaced drums and paper bags with a bulk bag system from Ingredient Masters to manage incoming raw materials.

Continued from page 28 . . .

Recent innovations in hopper design have also allowed the virtual 100% control of dust emissions, even from difficult materials such as carbon black, thanks to an integral dust port. And, there are ergonomic and labor cost benefits downstream of the delivery

process. Among the most compelling: the elimination of wrist and back injuries from manual lifting, and the elimination of paper bag waste.

Systems are often supplied with manual or robotic scale carts for batching ingredients, metering instrumentation and operator interface.

Bulk silos and paper bags will always have applications, but companies in the process of considering new equipment, or equipment upgrades – or of moving toward leaner approaches in all aspects of their operations – would be well-served to consider the bulk bag option. For a broad array of flaked and powdered

ingredients, it is an alternative that can produce solid cost savings from the first delivery, and a proven hedge against future fuel price increases.

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Tyrolit uses a bulk bag system, manufactured by Ingredient Masters, to optimize the handling of powdered ingredients used in vitrified bonds at their Cincinnati facility. Above, an operator meters product from 70 cu. ft. bins on Tyrolit's major ingredient line.