

# Baking & Snack<sup>®</sup>

The knowledge authority for development, production, packaging and distribution of grain-based foods.

PROBLEM SOLVERS REPORT

## Baggin' it for Silos

Switching from bagged flour to indoor silo storage proved more than advantageous for Custom Foods.



Most small to mid-size bakers are resigned to the fact that, due to volume needs and space limitations, their operations must contend with weekly deliveries of bagged flour — whether in 50-lb or 100-lb sacks, LTL or full truckload quantities. At some point in a company's growth, however, cost, storage constraints and other factors encourage a look at bulk storage options.

When this choice presented itself to Custom Foods, Inc., DeSoto, Kas., a manufacturer of frozen dough for breads, rolls and pizza, the company carefully considered its options. What it found was a solution that addressed many concerns, not just cost and space.

"We had a number of factors to think about at the time," said John Khoury, president of Custom Foods. "We were growing very rapidly, nearly 20% annually for the past several years, and we had begun to worry about potential issues associated with bagged flour as our volume increased. The quantity of physical lifting by our operators and the potential for injury were real concerns. We also worried about bag openers, paper and plastic inadvertently entering the mixer, and the growing quantity of flour bags requiring disposal. But most importantly, we were concerned about the quality of our products and the weight control of flour entering the mixer."

◀ Indoor silos maximize vertical storage space while resolving sanitation, security and other concerns.

SHICK

However, when Custom Foods began looking at alternatives, managers were not satisfied with the option of outdoor silos. "We were concerned about sanitation, effects of outdoor temperature swings throughout the year, control and security, and even the aesthetics of having them outside," Mr. Khoury said. The company currently occupies a 20,000-sq-ft facility in a modern industrial park adjacent to a housing subdivision. The plant was designed to quickly expand to 40,000 sq ft.

Custom Foods knew it needed to get away from bagged flour but didn't want silos outside. Management found the answer through Shick, Kansas City, Mo. Shick suggested indoor silos that would maximize use of vertical space while resolving all of Custom Foods' concerns. Each of the two silos has a capacity of 115,000 lb and is fitted with a patent-pending interior lining that includes a permeable fabric bottom placed over a subsurface air blaster that guarantees 100% discharge. Only the bottom is permeable. The sides are a Food and Drug Administration-approved slick fabric material having a tensile strength of 600 lb per sq in. The material is formed to the exact shape of each bin using a radio-frequency sealing method that eliminates seams and joints.

"What resulted is an extremely smooth, seamless interior surface," Mr. Khoury noted.

Between the base of the fabric and the bin is an air manifold sectioned into 12 pie-shaped zones with an additional zone at the center discharge point. When the system is pumping out flour, air is blasted through each zone at timed intervals, helping to maintain constant flow and prevent any flour accumulation at the outer perimeter of the interior base.

"This guarantees us 100% discharge of flour from each silo so we maintain our quality control and first-in first-out process," Mr. Khoury said.

Ultrasonic sensors from Milltronics monitor flour levels within each silo, and the 20° slope of each base helps maximize capacity within the building.

"When we decided on indoor silos, we looked at several suppliers' systems but selected Shick because of the quality and robustness of its systems, the materials and the tolerances offered," Mr. Khoury noted. "It also helped that the company is local to the Kansas City area."

Since installing two silos in March 2002, Custom Foods has reaped the rewards of its decision. "Not only did we reduce our labor by one person per shift, but the silos also enabled us to increase throughput by increasing the number of batches produced," he said. "Consistency between batches improved, and the risk of injury dramatically declined. It was absolutely the right move at the right time, and the system continues to perform flawlessly." ■

— Steve Berne



▲ Specially designed permeable fabric is laid over air manifold openings (hole between men) to help aerate flour and assure 100% flour discharge.  
SHICK

▼ After securing the base, the 600-lb-per-sq-in.-tensile-strength slick liner is pulled up and secured over the top prior to installing the silo cover.  
SHICK

