Centrifugal Sifters, Flexible Conveyors Meet HACCP Demands in Transferring Starch-Base Blends

In expanding its blending operation for starch-based stabilizers, Opta Food Ingredients, Inc. installed a bulk transfer system consisting of two centrifugal sifters and three flexible screw conveyors to move as many as 12 ingredients at a high rate discharging from two plough blenders for bagging. The fully enclosed, dust-free system is a central component of the company’s HACCP (hazard analysis and critical control points) program for food safety and quality; ensuring that final packages contain uniform-size particles that are free of foreign matter.

In the first line, a flexible screw conveyor transfers blends from a 45 cu. ft. capacity plough blender to a Kason Model KO Centri-Sifter® centrifugal screener. From the screener, a second flexible screw conveyor moves the screened material through a metal detector to a bagging station.

The smaller line consists of one conveyor moving blended intermediate material from the second plough blender to a second centrifugal sifter that discharges directly into bags that are weighed manually.

**Bulk Densities Vary**

The transfer system moves a variety of blended materials having bulk densities of 25 to 60 lbs./cu. ft., and moisture contents from 1 to 11 percent. Twelve thousand pounds of material per day pass through each sifter at a rate of 25 lbs./minute.

The operation produces some 200 starch-based blends of dairy product additives that thicken, bind, stabilize, enhance texture or impart other properties. Ingredients include gums, whey protein, salt, mono- and diglycerides, starch, dextrose, among others. Some, like soy lecithin and sugar, are heat sensitive or hygroscopic, and tend to agglomerate. The centrifugal sifter breaks down soft agglomerates, as well as scalps all remaining oversize material, bug screens and other foreign matter, from the on-size material.

The transfer system and blenders occupy a space of 10 feet wide and 14 feet high, into which the flexible screw conveyors and Centri-Sifter sifters fit comfortably.

**Components Clean Quickly, Easily**

The centrifugal sifters are constructed of stainless steel with polished welds for easy cleaning. Opta Foods performs wet cleaning of the sifters every few weeks. An operator opens the side access door and end cover, both fitted with hand knobs allowing quick and easy access without tools, removes the screen, and sprays the interior with cleaning solution prior to rinsing.

**Centrifugal Sifter Operation**

The centrifugal screeners employ rotating helical paddles that impart centrifugal force to the particles, propelling them continuously against and through the 40-mesh nylon cylindrical screen. The on-size powder falls through the center of the separator. Less than 2% of the flow constitutes “overs,” which are collected in a bag and discarded.

The transfer system is practically maintenance-free, says Frank Malle, plant manager. “We haven’t changed the screen since installing the first Centri-Sifter screener in 1999. It just works, and you forget about it.”

Prior to installing the screening system, Kason’s area representative, Bob Steinman, of Windham Process Equipment, St. Charles, IL, had samples sent to Kason’s laboratory, which demonstrated screening capability at the desired production rate. Kason Corp., 67-71 East Willow St., Millburn, NJ 07041. (973) 467-8140 kason.com

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