

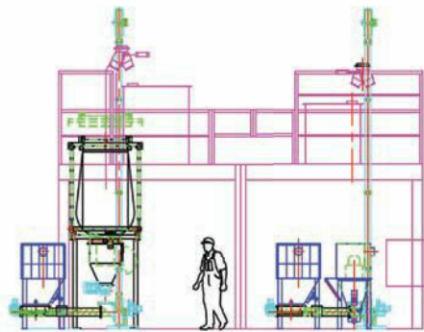
DRY PROCESSING TECHNOLOGY

Focus on **POWDER & BULK OPERATIONS**

Shane O'Halloran, *Contributing Editor*

Powder handling systems deliver efficiency for gum supplier

▶ The systems provide a significantly improved conveying rate, increasing production by 50 percent.



▶ **The powder handling systems at Colony Gums increased efficiency while improving plant cleanliness and worker safety.**

Source: Spiroflow Systems.

For more than 75 years, Colony Gums has been providing the food, pharmaceutical and chemical industries with the finest quality gums and stabilizers. Family owned and operated, the processor takes pride in helping customers develop special formulations, gum systems and stabilizers. The company was using two bag dump hoppers and flexible screw conveyors to handle various gum materials, but limited conveying rates and operator safety concerns led it to consider a new conveying system. Colony Vice President Chris Muhlsteff called Spiroflow Systems and explained the company needed to move powdered gum material out of bulk bags and 50-lb. bags into two elevated powder blenders and wanted to improve conveying rates from a maximum of 9,000 lb./hr. to 30,000 lb./hr. He also stressed the importance of maintaining the quality of the material and minimizing possible contamination, while maximizing operator safety. In addition, his list of requirements included improving dust containment for increased plant cleanliness and maximizing the cost effectiveness of the new conveying system by reprogramming an existing control panel.

Spiroflow Systems recommended, installed and commissioned two side-by-side powder handling systems to meet Colony's requirements. System A includes a loss-in-weight bulk bag discharger with vibration and bottom massagers, a three-in. aero mechanical conveyor, a flexible screw conveyor and a bag dump station with a dust hood and vibration.

In the System A process, a 2,200-lb. bulk bag containing gum material is loaded into the loss-in-weight bulk bag discharger via a forklift. Then, the gum material is transferred from the base of the discharger up 20 ft. via the 22-ft. long aero mechanical conveyor positioned at a 60° angle. The gum material exits the conveyor outlet into a large blender; 50-lb. bags of gum material are manually added at the adjacent bag dump station fitted with vibration and a dust hood. The five-ft. long horizontal flexible screw conveyor installed at the base of the bag dump station transfers the contents of the smaller bags into the mechanical conveyor. Once it is appropriately blended, the gum material is vacuum transferred to a screening system and then packaged.

System B includes two stainless steel 3.5-ft.³ hoppers, two stainless steel flexible screw conveyors, a stainless steel three-in. aero mechanical conveyor and a weigh batch control panel. In this process, 50-lb. bags of gum material are simultaneously emptied into two bag dump stations fitted with vibration. A five-ft. long, horizontal, flexible screw conveyor installed at the base of one hopper transfers the contents of the bags into the mechanical conveyor. A four-ft. long flexible screw conveyor, positioned at 30° and installed at the base of the second hopper, transfers the contents of the 50-lb. bags into the 22-ft. long mechanical conveyor. Positioned at 60°, the conveyor transfers material up 20 ft. to another elevated blender or directly to screening and packaging.

Muhlsteff is very pleased with the results, saying, "Our Spiroflow powder handling systems have been operating since 2007. The solution is reliable and continues to exceed our expectations." ♦

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