Application Data Sheet

Materials Handling Company Chooses Cromgard for Quality Screw Conveyors

Cush-cush screw conveyor at Lafourche Sugars in Thibodeaux, Louisiana.

It's known that sugar cane is aggressive material to handle through all of its processing stages. It retains moisture, is acidic and will wear through unprotected steel in a very short period of time—in fact, one campaign season is not uncommon. Mills and sugar-related equipment manufacturers are on a constant quest to make handling equipment efficient, durable and economical.

New Orleans-based R.J. Tricon, Co. has been a leader in power transmission and materials handling equipment since its founding in 1921. The company has decades of experience in the design of systems and components for a variety of industries, including sugar cane. In early 2000, engineers began exploring new materials to use in the production of specific components. In a particular case, a screw conveyor used to handle cush cush—the leftover shredded cane—was under review and the RJ Tricon team of designers was tasked with choosing materials that would increase overall performance in this highly abrasive and corrosive environment. The conveyor trough and spiral are the important contact areas and material selection here has a considerable bearing upon the service life and operating performance of the handling system.

The company had been using carbon steels for years due to the material's low-capital cost, availability, and ease of fabrication and installation. However, high maintenance and poor durability most often led to a short service life making the carbon steel unacceptable for such an application. The material RJ Tricon selected was Cromgard utility stainless steel from American Utility Metals. Essentially an engineering steel, it was specifically developed to be a low-cost and easy-to-work with alternative to conventional stainless steel. In typical sugar applications operating life has been increased by a factor of four to five years and in some cases much longer.

"After considering different alternatives, we chose Cromgard for the corrosion resistance and formability," stated Tom Biggio, RJ Tricon sales manager. "Plus, it's less expensive and we were really impressed with its low friction and slideablity that we saw in applications in a range of industries."

Although higher priced than mild steel, Cromgard requires less material to be used and there are no corrosion allowances that need to be considered, further reducing any initial cost differential.

"Before we used Cromgard, corrosion and wear was a huge problem for us," explained Biggio. "We were using carbon troughs, which we would then line with UHMW plastic. That used to last three to four years. However, the current screw conveyors that utilize Cromgard have been in place since 2001 and as of 2009, they show very little sign of wear. Now that's performance."

Using life-cycle models which take into account the cost of capital, commissioned cost, maintenance and production intervention, RJ Tricon engineers have been able to offer a lower annual cost projection, decrease maintenance and produce an all around better product.