

Do Away with the High Costs of Washdown

Case #11019

BACKGROUND:

Alba works exclusively through OEMs, System Integrators and Distributors. Our partner's customer, a creamery located in Wisconsin, started up a new Bulk Cheese Curd Processing Line.



Product handled: 40" X 48"

plastic totes filled with cheese curds having a maximum weight of 1,500 lbs.

Cleanability is among the highest priorities that food processors have for conveyors. There are, of course, a wide variety of conveyors and many different ways of keeping and maintaining cleanliness. Any Alba partner regularly working in food processing facilities keenly understands the need for effective washdown equipment, but stainless steel isn't the one-size-fits-all answer to washdown applications as many assume. For our application, we will focus on galvanized steel and zinc plating.

At Alba, we commonly encounter the misconception that all washdown conveyor must be stainless steel, when in fact it doesn't. Choosing the right conveyor finish to prevent corrosion is driven by three primary factors:

1. Does the conveyor come in direct contact with the food itself?
2. Is the conveyor required to be sanitary?
3. What are the environmental conditions?

There are five factors that influence metal corrosion: moisture, salt, acidity, temperature and metal-to-metal contact. Among other methods, conveyors can be painted, powder coated, galvanized or constructed from stainless steel. Paint, although suitable for most applications, has its drawbacks. With a bond strength of roughly 600 psi (pounds per square inch), paint is vulnerable to chipping and scratching.

Hot-Dipped Galvanizing involves taking Alba's standard structural steel components and "dipping" them into a pool of molten zinc. Galvanized steel is superior to paint and powder coating in that its bond strength is much higher at 3600 psi, so it's less likely to scratch or chip.

An even superior finish to hot-dipped galvanizing is **Zinc Plating**. A zinc (plated) coating is created by electro-dipping, a process in which the steel is dipped in an electrolyte solution containing zinc and makes use of electrolysis to create the coating. The resulting finish is a bright almost mirror-like finish producing a hard scratch resistant surface. Zinc plating is typically reserved for use on Alba's conveyor rollers for its ability to take the constant abuse of conveying pallets and other heavy items without the cost or brittleness of stainless steel.

PROBLEM OR CHALLENGE:

- Customer needed to simplify their labor-intensive process
- Previously, a fork truck operator would have needed to constantly exchange totes into and out of fill position taking up valuable time and floor space.
- Although food wouldn't have direct contact with the equipment, all equipment in this vicinity required frequent washdown.
- From a safety perspective, the likelihood of injury from an accident was high due to the human interface with fork truck operators.

SOLUTION:

The material handling process was automated using Alba equipment. By utilizing a combination of galvanized and zinc plated structural steel components, we provided a solution with substantial cost savings and structural integrity over stainless steel constructed conveyors.



RESULTS:

- The new U-shaped production lines allowed four empty totes to be staged prior to the fill position and two full totes queued after.
- Throughput improved dramatically allowing a product susceptible to spoilage to be accelerated through the supply chain.

- Fewer direct operator interactions meant less chance for an accident, injury, or flaws due to human error; also, the elimination of redundant tasks which lead to greater operator efficiency.
- Since the conveyors wouldn't directly contact the food, the customer was able to avoid the high stainless-steel costs by using Alba's washdown solution.

ABOUT US:

Alba Manufacturing, established in 1973, engineers and designs heavy-duty roller conveyor systems. Our systems consist of chain driven live roller (CDLR), zero pressure accumulation, drag chain, gravity, lift and rotate, pallet stackers and dispensers, turntables, chain transfers and transfer cars. Our corporate office and manufacturing facility is located in Fairfield, Ohio, approximately 30 minutes north of Cincinnati, Ohio.



For more information regarding this application/solution, please contact us via phone at 866.252.2634; via web at www.albamfg.com or via email at RockSolidConveyor@albamfg.com.