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Produce Protective Coatings

Food Conveyor Technology

The newest generation in belting

CanadaGAP Program

An On-Farm Food Safety initiative

Product Shelf Life Testing

Optimizing consumer safety, satisfaction

The Next Step in Belting

By Sandra Milner

A popular means of material transport, conveyor belts have come a long way thanks to industry innovation and engineering.

Introduced during the Second World War, synthetic plied PVC/PU (polyvinyl chloride/polyurethane) fabric belts were the industrial revolution's answer to conveyor systems. They were widely acknowledged for supporting production by transporting products from one work station to another. However, these revolutionary belts had their share of problems. Most notably, the fabric reinforcement layers absorbed fluid causing the material to de-laminate and fray. This affected the work-life of the belt. Additionally, frayed fibres found their way into end products, drastically reducing hygiene levels. After some time it became obvious these belts were not ideal and much improvement was needed.

Along came fully extruded homogeneous PU conveyor belts, which were warmly welcomed into production plants as they did not absorb water, oil or chemicals, eliminating fraying and de-lamination, and proved simple to clean. These belts also proved to be safer for users, offering high abrasion and cut resistance. But the food industry was particularly impressed by the reduced bacteria levels and increased hygiene levels the belts offered. Immediately, it became apparent this would have a positive affect on the quality of food products as profitability in the industry went up reflecting the longer product shelf-life achieved.

Modular conveyor belts were introduced around roughly the same time as fully extruded homogenous PU conveyor belts. These belts solved logistical plant problems as they could be assembled to turn corners. Also, the specially engineered structure of the modules prevented belts from slipping, elongating or coming off their track. However, these belts have proven difficult to clean; they must be soaked in costly chemicals for long periods of time. This requires copious amounts of water, resulting in increased water treatment costs, and greatly impacts production time, which eats into profits. Essentially, sanitation has become a very expensive factor in the costing of the final product.

The newest generation in belting technology combines the benefits of existing modular systems with the ease of cleaning and improved hygienic levels characteristic of homogenous belts. But unlike previous belting systems, positive drive flat homogeneous conveyor belts do not require tensioning, limiting strain and allowing for a smaller drive motor, which reduces plant energy consumption, and, more importantly, have "teeth." Added to the underside of the belts, these integral teeth mesh with the teeth of the drive pulley, providing smooth and effective positive drive for the conveyor belt. The teeth also serve as a natural guide for the conveyor, eliminating off-tracking and slippage. This reduces maintenance costs and lengthens the system's work-life. Other benefits include reduced set-up time, allowing quick change over between product types and providing greater product flexibility. ●●



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