

PROCESSING CONVEYORS

is the one going to packaging, he says, explaining: "By the time the finished item reaches the packaging machine there are no systems in place to remove damaged product." The overarching goals for system design, Seidel points out, are to maintain quality, minimize scrap and waste, and increase productivity.

MATCHING SYSTEMS TO PURPOSE

Central to ensuring quality and limiting discards, the type of belt is dictated by product, application, production speed and food safety issues, according to Mike Galvanauskas, industry specialist at Habasit America.

For example, Galvanauskas says that when dealing with chocolate, a nonstick surface offers slip-and-grip product handling as well as the ability to be cleaned in a manner that prevents bacterial growth. Processing sticky candy, on the other hand, he explains, requires surfaces be washed down frequently, so a smooth stainless steel surface is preferable.

"According to the Safe Quality Food Institute, code requires that food contact surfaces be built with FDA-compliant materials that are easily cleaned to prevent contamination, such as ultra-high-molecular weight polyethylene and stainless steel," Reynolds says, adding it's important conveyors be built with skeletonized frames so every aspect can be easily accessed and properly cleaned.

However, maintaining hygiene might be easier said than done, particularly in an open processing environment, Seidel notes. As a result, he says, enclosed systems have gained in popularity during the past decade, and Food Safety Modernization Act guidelines will require even greater adherence to clean processing.

"An estimated 50 percent of the problem is human touch, keeping outside contaminants out of the process," he explains, adding hairnets, booties and gloves are only a starting point. "Multiple handling points increase risk,

which is why enclosed systems help reduce points of human intervention."

Spangler notes belts made from thermoplastic elastomers are gaining acceptance because they're easy to clean and designed to allow worn or damaged sections to be replaced in lieu of complete replacement.

In setups with vibratory feeders, which slide the product forward gently while slipping back underneath, Paul Kuharevicz, engineering manager for Dynamic Conveyor Corp., says the feeder design should keep product away from the sides of the conveyor.

"Easy disassembly of the line is another important feature, so the design should be modular, such as removable retaining walls," he notes. "Polyurethane belting gives you a solid surface with no links and allows dry flight spacing. That allows the pusher to move the product off the belt when it travels uphill."

When selecting a conveyor, Kuharevicz' colleague Chris Cooperman, designer of lines, suggests to **Candy & Snack TODAY**: "Look for ease of assembly, and the absence of exposed nooks, crannies and pockets. In addition, the hardware and tools needed should be as few as possible. Keep a tool list to avoid having to make a maintenance call. Most important, select a conveyor with a simple design. If it looks complex, look elsewhere."

Conveyors should have minimally exposed nuts, bolts, gears and other components that could trap food and lead to excessive downtime, Seidel explains, and suggests enclosed lines not only trap particulates and dust; they reduce cleaning time.

In operations where highly combustible sugar or flour dust is an issue, Kadinger advises choosing conveyors with a stainless steel grounding arm to prevent electrostatic charges from building up or ground the bed to the frame or electrical system.

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'The most critical part of any production process is ensuring the conveyor line starts and runs all day, every day, without failure.'

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