

Food Fight: Metal vs. Plastic Belting

Virtually every manufacturer employs conveying systems in their processing operations. Different conveyor belting options are available to manufacturers, and each presents its own benefits to various applications. *Chem.Info* sister publication *Food Manufacturing* asks two experts to sound off:



Jamie Card, Marketing Specialist, Wire Belt Co. of America

Processing plants face many different challenges, including increased pressure to avoid downtime and keep lines running. It's important to understand your unique processing conditions to determine the appropriate conveyor belt for the application. How quickly should the products heat up and cool down before the next phase of production? Does the conveyor belt meet your sanitary guidelines and how costly is it to clean?

Stainless steel conveyor belts provide substantial benefits to many processing environments, including the hygienic design and high temperature capacity. Stainless steel, by nature, is more sanitary than plastic belting and provides a greater ability to adapt to extreme heating and cooling conditions. The features that are best attributed to metal conveyor belts include:

Sanitary Design — Processors are facing higher sanitary requirements and need equipment in their process that will live up to these standards. The surface of a plastic belt can become scratched during cleaning cycles far more easily than stainless steel surfaces, which creates pits and cracks or topography patterns in the belt. These not only become places for allergens and pathogens to hide, but depending on the process, could also promote biofilm contamination and buildup over time. Wire Belt's entire line of metal belting products are accepted by the USDA NSF/ANSI/3-A hygiene standards.

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High Temperature Functionality — Metal belts are ideal for extreme temperature environments. They have high melting points and have lower coefficients of thermal expansion compared to plastic. This means that a metal belt will typically hold its form (dimensions) better than a plastic belt under temperature changes.

Environmental Responsibility — Open-mesh metal conveyor belts are extremely easy to clean and keep clean. There are no hinge-pins or connecting rods, so there is less chance of product build-up which makes sanitizing easier. All of Wire Belt's metal belts are Clean-In-Place and can be cleaned using equipment that manufacturers already own. Metal belts typically use less material than plastic belts, in which lower belt mass translates into lower power consumption, faster processing, and more product throughput.

Metal conveyor belts are hygienically designed to protect your products and have no hiding places for pathogens. Stainless steel can be recycled and allows processors to reclaim some of their original costs and won't end up in a landfill. Metal belts provide optimal performance in a variety of applications such as breading, battering, frying, coating, baking, grilling, cooling, and freezing.

For more information, please visit www.wirebelt.com [1].



Mike Hosch, Director of Engineering, Dorner Manufacturing

Flexibility and sanitation are two key advantages plastic chain conveyor systems bring to manufacturing applications.

Made of injection-molded polyethylene or acetyl plastic, plastic chain belt conveyors involve linking together rows of modules by hinge rods to form a continuous belt chain. Plastic sprockets around the conveyor's spindle positively drive the conveyor. These spindles provide excellent tracking by preventing belt slippage during operation, especially in wet environments.

By its very nature, plastic chain belting gives users great flexibility in designing their conveyor systems. Plastic chain belting can easily make turns and flex to go up inclines or down declines. Such flexibility can help to save production space and

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reduce the number of product transfers, which can eliminate areas for product loss.

Another example of its flexibility is seen in custom-built conveyor systems. Plastic chain belting can be made to virtually any width or length, giving customers the ability to order a conveyor system to fit their exact application specifications. If a system calls for multiple conveyors, a smaller pitch plastic chain belt can be used to accommodate tight transfers of product from one conveyor to another. With these tight transfers users are able to reduce product loss at transfer.

Many applications call for an open-mesh plastic chain belt for enhanced sanitation or for cooling or air flow. As implied by its name, open mesh allows for water and cleaning agents to drain off the belt; drainage isn't as good on a standard belt conveyor, as water only wicks off the sides.

Plastic chain belts are resistant to water and most cleaning agents, which gives the customer the ability to wash down the conveyor. Their open mesh design allows for optimal drainage and minimal downtime. The plastic chain belts have easy-to-clean surfaces, and are extremely durable, offering resistance to cuts. If part of the plastic chain belt does get damaged, repairs can be quickly made by simply removing the hinge rod of the affected chain module and replacing it with a new section — the rest of the belt can remain in place on the conveyor.

Common food applications where plastic chain conveyor systems offer the greatest advantages are meat, poultry, snack food and confections, ready-to-eat foods, bakery and seafood.

Customers using plastic chain conveyor systems find that added flexibility and increased sanitation are two critical elements that make them an ideal fit in the food manufacturing industry. These features, along with many others, give plastic chain conveyors more production time and a higher return-on-investment.

For more information, please visit www.dornerconveyors.com [2].

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[1] <http://www.wirebelt.com/>

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