

INNOVATIVE CORRUGATED BOARD DISPOSAL

TRICOR PACKAGING OF GERMANY PARTNERED WITH HÖCKER POLYTECHNIK FOR ITS STATE-OF-THE-ART WASTE AND DUST EXTRACTION SYSTEM.

In less than two years, the town of Bad Wörishofen, Germany, has seen the development of one of the most modern and efficient corrugated board production and logistics facilities in Europe. In its newly constructed industrial part, Tricor Packaging & Logistics AG focuses on state-of-the-art production technologies.

The production lines, the equipment for the disposal of corrugated board waste, and the dust extraction system were carefully planned and matched in order to achieve optimum results.

The company partnered with Höcker Polytechnik GmbH, Hilter, Germany, for the corrugated board and dust disposal undertaking. The expert team from Bad

Wörishofen contributed the extraction and filter technology know-how obtained through multiple turnkey projects provided for the corrugated industry. In close cooperation with its customers, Tricor AG and the machine manufacturers, an integrated waste disposal concept was developed that could operate under full load of all production facilities continuously and reliably, around the clock, seven days a week.

One Contact Point

Concentrating the technical knowledge made the planning and successful implementation easier. During the planning phases Karl-Heinz Plogmann and his Höcker Polytechnik team provided Tricor AG with the necessary support and acted as the key contact for any waste disposal questions. Thus, coordination problems were eliminated.

This strategy has proven itself on a daily basis for several months. Dust is



Product Review



SHREDDER PROCESSING SHEETS AND TUBES.

removed from all machines in a reliable manner. Underground conveyor systems transport the chads away safely. Margin edges are removed, shredded, and pneumatically transported at high production speeds. Corrugated sheets and cardboard tubes are recycled and transported safely. Last but not least, the waste materials are pressed into large balls inside an automated disposal and recycling center.

By using two briquetting presses, the dust extracted from the corrugated board is cleanly and safely processed into briquettes. Höcker Polytechnik provided the technical expertise necessary to find the right solution on how to dispose waste accumulating in the corrugated board area. In most cases, the company uses its production depth in order to manufacture the equipment in-house.

TWO MULTISTAR FILTER SYSTEMS EXTRACT THE ACCUMULATING DUST FROM ALL PRODUCTION MACHINES AND FROM THE CONVEYING AIR OF THE CORRUGATED BOARD PLANT

Handling Dust

In Bad Wörishofen, dust is removed systematically to ensure a clean working environment and a high degree of production quality. Two MultiStar filter systems with integrated sliding floors extract the accumulating dust from all production machines and from the

conveying air of the corrugated board plant. Both filter systems operate at a low noise level. They were tested for pressure surges and integrated into the factory halls using the least possible space requirements. Depending on the differential pressure, compressed air is used to regenerate the filter bags in an energy-saving manner.

The dust is extracted at vacuum conditions, using the clean air fans that are integrated into the filter attachment module. This guarantees a high degree of efficiency. A cascade control architecture and regulation of the fans' speed saves energy and adjusts the air quantity automatically. A return air duct equipped with residual dust sensor returns the purified air to the production facilities; thus reducing heating costs. Two BrikStar briquetting systems compress the filtered dust to high-strength briquettes.

Product Review

In order to extract the incidental margin edges, a solution was developed that includes shredding fans and the pneumatic transport through pipelines. Shredder fans are used to comminute the margin edges, which are subsequently transported via a pipeline system to the PMA material separator. Here, the dust and board are separated. The latter is fed into the ball press machine for recycling purposes.

Underground Highway

A waste disposal highway is located underneath the production lines. A conveyor belt system measuring 426 ft long and 4 ft wide runs below the corrugated converting lines. Smaller conveyor belts transport cross-cutting waste from the corrugated machines and peeled materials to the main conveyor belt. More than 820 ft of conveyor belts traverse the factory underground.

An online weighing system provides continuous information about the

accumulating waste during the production and processing. This ensures added safety. If the scale indicates that the specified weight limit is exceeded, the conveying process in the direction of the ball press is switched off immediately and automatically. The scale will detect any personnel traveling on the conveyor belt, and its integrated stop function contributes to additional safety.

This conveying system is also used for the disposal of sheet material and cardboard tubes. In order to meet this requirement, two shredder systems with an operating height of 78 inches are available.

One of the shredders is used to process tubes. It goes without saying that the accumulated dust will also be extracted during the process.

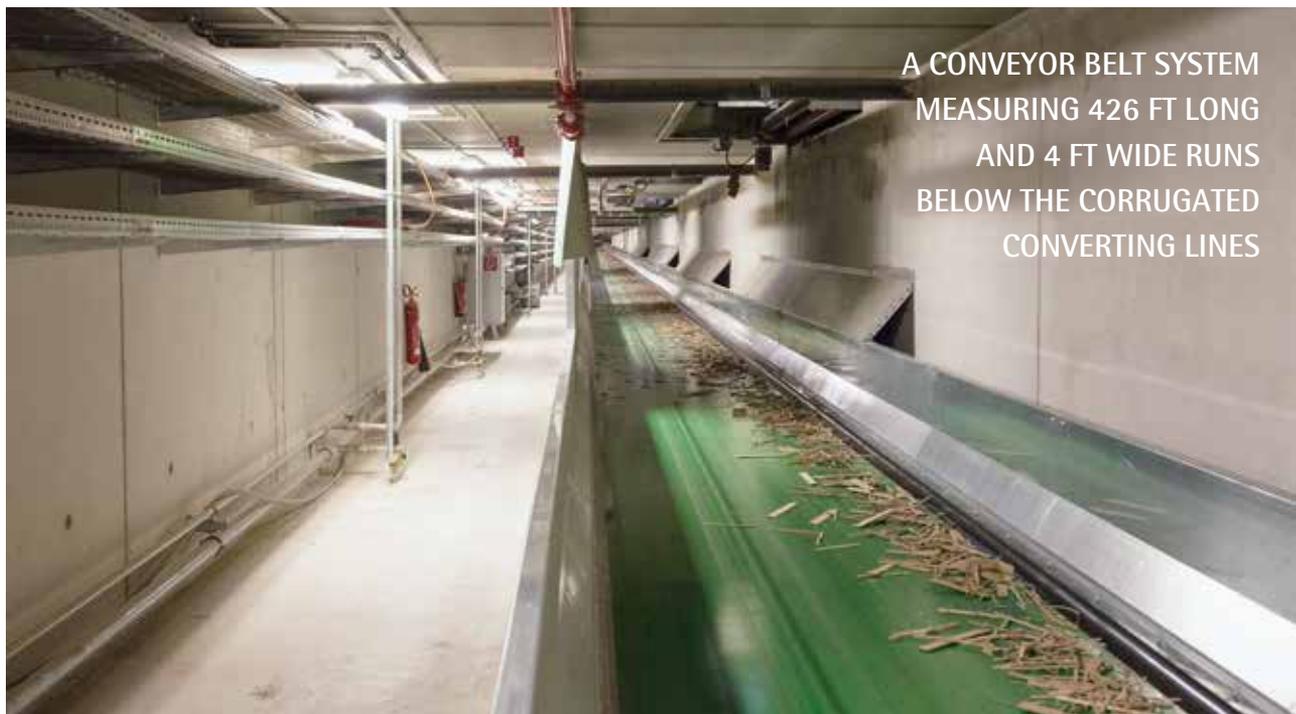
All waste generated during processing and manufacturing will be transported to the fully automated waste disposal center. A chain belt conveyor is used to transport the large size corrugated boards to the automated ball presses.

Here, the balls will be automatically pressed and tied. Subsequently, a forklift truck is used to transport the balls away on a regular basis.

Several switching cabinets with PLC and linked to one another control the entire disposal system. A touch panel provides the option to access the most important data and allows minute adjustments. The Tricor factory management and the 24-hour Höcker Polytechnik support staff can access the network in order to retrieve the information. Thus, all data is available with a click of a button.

The Tricor industrial park has been operating for one year and the corrugated board disposal has proven extremely reliable thanks to the close cooperation between Tricor and Höcker Polytechnik.

After all energy-saving features were integrated, a comprehensive fire protection system was implemented, and dust-free working places were created. ■



A CONVEYOR BELT SYSTEM MEASURING 426 FT LONG AND 4 FT WIDE RUNS BELOW THE CORRUGATED CONVERTING LINES