TRICOR USES LATEST SOLUTION

Innovative corrugated board disposal from Höcker Polytechnik

Over the last two years, the town of Bad Wörishofen in Germany has seen the development of one of the most modern and efficient corrugated production and logistics facilities in Europe. In its newly constructed industrial park, Tricor Packaging & Logistics AG utilises state-of-the-art equipment. The production lines, the equipment for the disposal of corrugated waste and the dust extraction system were carefully planned and specified in order to achieve optimum results.

Höcker Polytechnik GmbH from the town of Hilter, Germany, was the sole partner for the corrugated waste and dust disposal solution. The team from Bad Wörishofen contributed their extraction and filter technology know-how gained through multiple, turnkey projects for the corrugated industry. In close co-operation with Tricor AG and the machine manufacturers, an integrated waste disposal concept was developed that could operate under full load, continuously and reliably.

Entire process

During the planning phases, Karl-Heinz Plogmann and the team at Höcker Polytechnik provided Tricor AG with the necessary support and contact for any waste disposal questions. Underground conveyor systems transports the waste to the baler house. Edge trim is removed, shredded and pneumatically transported away at high speed. Sheets and tubes are also recycled and transported safely. Last but not least, the waste materials are pressed into large bales at an automatic disposal and recycling centre. By using two briquetting presses, the dust extracted is cleanly and safely processed into briquettes. Höcker Polytechnik has long had the technical expertise to find the right solution on how to dispose of waste and in most cases, the company manufactures the equipment in-house.

Dust attacked

Dust is handled systematically to ensure that a clean working environment and a high degree of production quality are a matter of course. Two MultiStar filter systems with integrated sliding floors extract the accumulated dust from all production machines and from the conveying air of the plant. Both filter systems (1,100 sqm/350 sqm) operate at a low noise level; they were tested for pressure surges and integrated into the factory halls, using the minimum of space. Depending on the differential pressure, compressed air is used to regenerate the filter bags in an energy-saving manner.

The dust is extracted, 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; this reduces heating costs. Two BrikStar briquetting systems compress the filtered dust to high-strength briquettes.

Reliable solution

In order to extract waste trim, a solution was developed that includes shredding fans and pneumatic transport through pipelines. Shredder fans are used to deal with the trim which is subsequently transported via a pipeline system to the PMA material separator. Here, the dust and board are separated. The latter is fed into the baler for recycling purposes.

Underground conveyor belts

A waste disposal 'highway' is located under the converting hall. A conveyor belt system, measuring 130m in length and a belt width of 1.40m, runs below the converting machines. Smaller conveyor belts transport cross-cut waste and delaminated materials to the main conveyor belt. More than 250m of conveyor belts traverse the factory underground. An online weighing system provides continuous information about the accumulating waste during 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 baler is switched off automatically. The scale will detect any personnel travelling on the conveyor belt and an 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 achieve this, two shredder systems with an operating height of 2.0m are available. One of the shredders is used to process tubes.

Automated centre

All waste generated during the processing and manufacturing is transported to the fully automated waste disposal centre. A chain belt conveyor is used to transport the large-sized corrugated sheets to the automated balers. Here, the bales are automatically pressed and tied. A forklift truck is used to transport the bales away on a regular basis.

Several switching cabinets with PLCs 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 information. ■