

Fully automated high-bay warehouse for corrugated-board packaging running optimally



System from AKL-tec detects dimension-based data on-the-go

TRICOR Packaging & Logistics AG is market leader in heavy-duty corrugated board packaging in Germany and is specialized in the areas of packaging technology, design, production, logistics and servicing concerning packaging processes. With highly sophisticated, slim production processes, which are centrally connected, the company meets the demands of the continuously increasing service demands of the industry as system supplier, full-range provider and logistician. With the build of their new headquarters in Bad Wörishofen, Allgäu, Europe's most powerful corrugated-board and logistic industrial park was created on 130.000 square meters with a second-level area of 66.500 meters.

Precisely loading a fully automatized high-bay warehouse

For the newly built plant in the headquarters a concept for a high-bay warehouse was sought, that would enable a flexible flow of material as well as a storage concept. Additionally, information about dimensions, shape and orientation of a packaging stack should be collected and evaluated. This data is especially important since it is a fully automatized high-bay warehouse. Next to heavy-duty corrugated board stacks without a pallet, euro pallets and special pallets are also transported to the high-bay warehouse and must precisely fit onto the tracks inside the warehouse. „This is the reason why we needed the high precision between 1 and two centimeters with regards to length, width and height. Even the position of the pallet underneath the heavy-duty corrugated board must be precisely determined. The system has to detect the precise dimensions and transfer those to the higher system.“, explains Klaus Peter Weidenhaupt, responsible for the area of intra-logistics and energy management at TRICOR Packaging & Logistics AG. During the planning stages of the plants renovation he contacted AKL-tec since both companies had already met at a trade show. Next to the precision of the data the specification sheet demanded a thorough measurement portfolio since the system needed to detect numerous types of loading units. The own heavy-duty corrugated board device is connected to the high-bay warehouse through a conveyor system and raw product needs to be measured while passing through. After storage, the product should be transported out of the warehouse automatically and brought to packaging and then be placed on pallets and strapped.

What follows is another measurement to gather dimensional data and the storage inside the warehouse and finally the loading onto a truck. „ We needed a system, which would detect raw product without a pallet and the final product with a pallet. Furthermore, the system needed to handle the six to seven thousand daily movements the warehouse delivers.“, states Weidenhaupt. Die demanded needs are met with our seven APACHE conveyor systems with the additional horizontal scan of the sub-pallet from AKL-tec.

Measure heavy-duty corrugated board stack on-the-go

APACHE conveyor measures and detects the dimensions, volume as well as the weight of heavy-duty corrugated board stacks on-the-go. Therefore, each system is equipped with two laser scanning heads placed above 2,5 meters wide PVC conveyor systems and one laser scanner placed underneath. These detect the object to be measured and transfer the data to the specially designed software, which initiates the fully automated transport to the high-bay warehouse. Thanks to the precise measurement the loading units with and without a pallet can be transported fully automated and additionally the automated 3D detection of each heavy-duty corrugated board stack enables the documentation of an image of the contour data. Even the evaporation of the corrugated board at 70 degrees was an issue that created issues since the laser rays were reflected by the steam. A quick fix was a fan system which blows away the steam. „Without the APACHE system we could not operate the high-bay warehouse. Due to the high amount of storing and retrieving the manual measurement of goods is impossible and creates a high risk of error.“, says Weidenhaupt explaining his choice and adds, that it was the quickest installation period of all the systems at their plant. The company is furthermore planning another factory renovation, which is assumed to be even larger than the one in Bad Wörishofen and also requires contour checking. „The cooperation with AKL-tec was to our full satisfaction and everything was well prepared. We can only report positive things about the functionality and reliability of the system. Especially in our fully automated process we try to prevent interruptions, which we have succeeded in so far. We will definitely rely on our measuring experts for future projects and already have a small challenge for them: Configure the laser ray in such a way that it is not influenced by the steam“, summarizes Weidenhaupt grinning, but happy.

