FULLY AUTOMATED INTRALOGISTICS FROM MINDA FOR SOENEN GOLFKARTON, WITH LATEST TRENDSETTING SOLUTION FOR MAXIMUM PERFORMANCE IN CORRUGATED BOARD PRODUCTION.

THREE HIGH-BAY WAREHOUSES, ONE GENERAL CONCEPT

With the new greenfield plant in Lanklaar, Belgium, in the tri-border area, Soenen Golfkarton is setting new standards in the corrugated industry. One of the most modern corrugators, which is designed for high output, is the heart of production. To achieve these high performance requirements in terms of intralogistics, Soenen relied on MINDA as a full-service provider. The result: a fully automated general solution with three high-bay warehouses, integrated conveyor technology, and intelligent control via Minda's own MoveIT data tracking software, ensuring consistent visualisation of the entire process. The project represents maximum transparency, process reliability and sustainability – from the first sheet to the pallet ready for shipment.

Efficient Warehouse Logistics

Minda's intralogistics solution allows for a wide variety of material flows and routings within the plant. The software strategies adapt to the dynamic changes in daily production. Special emphasis is placed on combining different types of storage: directly after the creation of corrugated board, the sheets are transported to various storage types via an intelligently connected conveyor system. One target for the calculation of the storage capacity was to be able to provide around 5 million sqm of corrugated board for conversion at any time. Redundancy for process reliability was also required. For this reason, two high-bay warehouses, each with three aisles for formats up to 3600mm in length, as well as up to 4500mm in length and 2800mm in width, were connected.

The two warehouses disconnect the production from the conversion of the corrugated board and form the backbone of the warehouse logistics in the plant. This ensures high availability for conversion.

To ensure independence between the cycle-based high-bay warehouses and the conversion, an area storage system was installed in front of the converting machines, which provides a stock for the next few hours (frozen zone) for each converting machine. Transportation from the corrugator to the high-bay warehouse and on to conversion takes place without internal labels on the stacks, as data tracking via the secure Minda system offers full transparency at all times.

Intelligent Conveyor Technology and Machine Connection

To ensure consistent efficiency improvements, all transfer cars in the plant are designed with two conveyors to enable parallel transport of two blocks, thereby significantly increasing the cycle rate.

The converting machines are connected via these transfer cars and buffer zones. Stacks of corrugated board larger than 4500mm can, for example, be stored separately in a corresponding conveyor storage.

The machines are supplied according to demand and with anticipation so that sufficient material is always available.

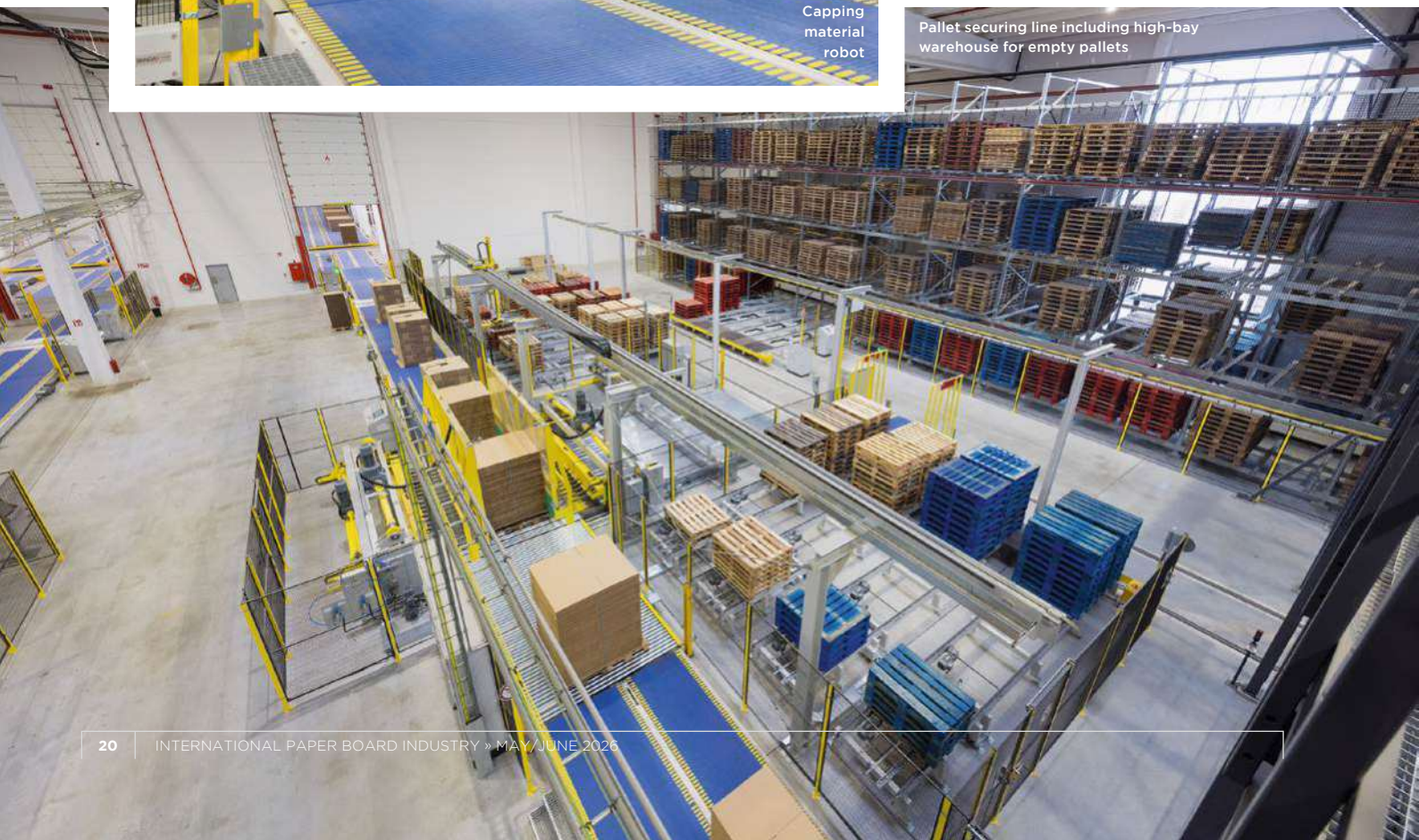
Another key feature of the project is the fully automated feeding of protective and intermediate sheets from the corrugator up to the fully automated palletisers.

Fully Automatic Pallet Securing Lines

In the entire plant, the transport is done without pallets. The stacks are only positioned centrally on pallets in the pallet securing lines. This is done with the Minda pallet loading stations BoP (block on pallet) where the goods are carefully put on pallets. Due to the high output rate in the final expansion stage and the variety of pallet types, cover plates and cover sheets, this also requires sophisticated logistics and space-saving storage of the necessary carrier pallets. A further high-bay warehouse with one aisle was planned here, so that the supply of empty pallets is ensured for a long time without having to refill.

A third high-bay warehouse has therefore been specially designed for storing empty pallets of different sizes, capping materials and protective sheets. It offers space for up to 17,500 Euro-pallets and supplies the two BoP loading stations and the capping material robots with the required material fully automatically.

Capping material robot



Pallet securing line including high-bay warehouse for empty pallets

WE CREATE STRONG CONNECTIONS

...as only reliability and trust provide best possible solutions – which are created in an intensive dialog with our customers and other interface partners. Already in the planning phase we develop interfaces for further intelligent processes. Together with our partners, we develop customer-specific industrial solutions for intralogistics.

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This means that in the entire plant a total of seven storage and retrieval machines are in operation within the three high-bay warehouses.

The highly complex area for pallet securing is provided with protective and capping material, and the stacks are strapped and wrapped. A total of 10 linear robots within the pallet securing system ensure the fully automatic handling of empty pallets and the positioning of protective sheets and capping material.

Since in-house transport takes place without labels, labeling is done fully automatically via the Minda EMIL system (Economic Minda Labeling) on up to four sides of the stacks, which ensures that the products are clearly assigned to the respective orders. Up to 240 pallets are prepared for dispatch every hour.

The Soenen project demonstrates how modern intralogistics solutions can raise production in the corrugated industry to a new level.

Real-Time Transparency

The Minda MoveIT control and visualisation system represents all processes in the plant in real time. The entire material flow is mapped transparently and consistently, ensuring complete tracking of the stacks without a black box.

Prior to the storage, the blocks are weighed and measured to ensure that they meet the requirements of the respective storage areas. The storage strategy considers the format, weight and subsequent machine allocation. The interplay of data analysis, process intelligence and real-time control imposes the highest demands on system architecture. The intelligent strategies of sequential retrieval increase efficiency throughout the plant – and all this fully automated.

Labeling robot EMIL (Economic MINDA Labeling)

Trendsetting Project

Minda developed an intralogistics system that not only reliably transports and stores the large quantities of products leaving the ultra-modern corrugator at high speeds but also ensures the necessary buffering and supply of the downstream processes. The entire intralogistics system is designed to continuously follow the production output of the corrugator – from the first stack to the finished pallet in the dispatch area.

The variety of formats and materials – including FanFold, protective sheets, intermediate sheets and special pallets – was also considered during the planning process. Automated palletising and labelling minimise manual intervention and enable optimum dispatch preparation.

The Soenen project in Lanklaar demonstrates how modern intralogistics solutions can raise production in the corrugated industry to a new level. As a full-service provider, Minda has created a highly complex, fully automated system that sets standards in technical integration, operational efficiency and sustainability. The combination of sophisticated warehouse technology, high-performance conveyor technology and intelligent control make this plant a benchmark project for the industry. ■