An investment with many benefits

Pfanzelt, a manufacturer of forestry machines, has invested in a STOPA COMPACT system for storing sheet metal stacks as well as a variety of other materials in mesh boxes, on Euro pallets and in bulk. The advantages are clear organisation plus fast storage and retrieval.

Pfanzelt Maschinenbau GmbH, based in Rettenbach in southern Bavaria, makes many of the components it needs for the manufacture of forestry machines, which means that it has to store and retrieve them efficiently. Recently, the company decided to invest in a large-scale storage facility. Its in-house logistics system, which operates in two shifts, had reached its limits in terms of speed and available space. One aim of the decision was to free part of the storage space and make it available for production. Another was to optimise the storage and tracking of parts and streamline the company's order-picking operations.

"Pfanzelt's original idea was to install a conventional storage system for Euro pallets and mesh boxes," says Vadim Masharin, sales engineer for storage technology at STOPA Anlagenbau GmbH, Achern-Gamshurst. "We showed Pfanzelt the advantages of a STOPA COMPACT storage system, and after looking at the systems of other suppliers it chose ours."

Versatile load carriers

The storage system, which is located between a production building and an assembly building, mainly uses system pallets. The pallets can take up sheet metal stacks or four mesh boxes loaded with material. Euro pallets can also be used. Various containers offer other possibilities. In addition, the system can store unpackaged components and semi-finished products up to a height of 1,520 mm.

Pfanzelt had previously transported metal sheets and other materials from A to B using forklifts – a time-consuming process. It relied mainly on mesh boxes and Euro pallets as load carriers. Semi-finished products were stacked on the floor or in conventional shelves. These materials likewise had to be stored and retrieved with forklifts. The system occupied a large amount of space, and searches for parts were slow and laborious.

STOPA additionally installed a battery-powered transport cart that moves on rails without a power chain.

STOPA COMPACT as the centre of operations

The storage system chosen by Pfanzelt is 90 metres long and about ten meters high, and it can handle sheets measuring up to 1,500 x 4,000 mm. With 1,030 storage locations, a load-bearing capacity of 3,000 kg and a storage capacity of 3,090 tonnes, it is the central distribution point for material.

"The storage system, which is located between the production building and the assembly building, has transport carts at both ends," says Masharin. "In this way materials can be placed in storage at one end and retrieved at the other." A storage and retrieval unit (SRU) transports the system pallets. There is also a third station, where STOPA has installed transport carts. Powered by rechargeable batteries, it moves on rails without a power chain. Charging contacts are incorporated in the steel structure. The transport carts ride on special platforms in the storage area because the storage system is installed in a pit.

Floor space was freed for production through investment in the storage system.

Highlights of the solution

- Storage of a wide variety of materials
- Fast storage and retrieval operations
- Floor areas freed for production
- Broad range of load carriers
- Flexible operations

Overhead conveyor crosses the STOPA COMPACT storage system

The production and assembly buildings are connected by means of a manually operated overhead conveyor system that runs through the warehouse. The lines run mostly parallel in the top part of the STOPA COMPACT storage system. At about the halfway point, the conveyor crosses a bridge constructed in collaboration with STOPA, after which it follows a winding path to supply the assembly area with painted parts. In order to ensure safe crossing of the bridge by the conveyor, an employee at the control panel gives a signal when the bridge has to be folded down.

The storage and retrieval unit then travels automatically to a defined area of the storage system where it moves at a safe, reduced speed to load and unload the system pallets. Here there are two stations with transport carts where materials can be stored and retrieved while the bridge and overhead conveyor system keep running.

Masharin shows a photo. "For safety, STOPA also installed sliding gates on each side that can be opened by hand to allow transport of components over the bridge. This crossing is managed by the control unit and is part of the electric safety system."

Sophisticated software

The system components are controlled by a Siemens Windows Logic Controller with Real-Time Extensions (WinLC RTX), which is integrated in an industrial PC. The higher-level STOPA WMS-Extended warehouse management system operates the storage system, manages the material and records incoming and outgoing goods. It is linked by an interface to Pfanzelt's ERP system, permitting management of inventories and placement of follow-up orders at any time. The company can also access its master data with some 37,000 items, monitor its stocks and evaluate its booking journal. In addition, it can use the software to generate transport orders.

STOPA WMS-Extended also provides all of the functions necessary for operating and managing one or more high-bay storage systems. "What's more, when sensors are

installed on an SRU the software permits dynamic storage, also called random storage," says Masharin. In this case the company can choose between six different heights when placing pallets in storage. The system went into operation in January 2020, and the operators were quick to get used to this new procedure.

Wide range of advantages

According to Pfanzelt, the main advantage of the STOPA COMPACT storage system is its clear organisation, which puts an end to arduous searching. In order to see whether a particular item has to be reordered, employees only have to check the inventory by en-tering the article number. Another important advantage for the company is that it can store the many different parts it needs for production.

The production and assembly buildings are connected by means of a manually operated overhead conveyor system that runs through the warehouse.

Masharin is highly satisfied: "We also have quick access to components and semi-finished products, and we can move them in and out of storage in a short time. Other advantages include high performance, efficiency and damage-free handling of material. Our company also appreciates the tidiness of the solution and the benefits of having a larger warehouse."

Pfanzelt says that STOPA's sales engineer quickly responded to its request for quotation and accommodated its need for modifications. The same was true for the creation of layouts and offers, which were the basis for reaching a decision. Pfanzelt is thus an outstanding example from Bavaria of how STOPA succeeded in gaining another cutomer.

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Author: Jürgen Warmbold

Press contact:
STOPA Anlagenbau GmbH
Industriestraße 12
D-77855 Achern-Gamshurst
Tel. +49 7841 704-0
E-Mail: presse@stopa.com