STOPA shelving system for long-span goods increases productivity

The long-span goods shelving system operated by DOLL Fahrzeugbau AG in Oppenau is a model of convenience and cost-effectiveness. The LG B3, supplied by STOPA Anlagenbau GmbH, Achern-Gamshurst, stores round and flat steel stock, UNP sections, rectangular tubes, seamless tubes and other kinds of sectional steel. It uses space very efficiently and provides fast, random access to the material. Moreover, the system lightens the workload of the storage and production workers.

Separate processes for greater efficiency

The storage system has separate processes in order to ensure an efficient material flow. All tasks can be performed without waiting times because storage and retrieval are independent of processing. The system has quick access to the sectional steels without relying on a buffer. Thus it eliminates the effort of searching for material and provisioning it, which significantly enhances productivity. The storage system is connected to the company's ERP system, ensuring high availability, long equipment lifetime, better work safety and continuous inventory monitoring.

Before cassettes are put into storage at the incoming goods station, the control panel shows the employee which of them are empty and which are loaded with the same material and can be added to existing stocks. When the employee selects a cassette, a cart driving at the front of the shelf tower brings it to the station. The cart has a frequency-regulated control system for gentle starting and stopping. A photoelectric sensor makes sure that the specified loading height is not exceeded. Using a crane and a magnet, the operator fills the load carrier, and then the cart returns to the store at a speed of up to 16 metres per minute.

Exact positioning

The robust storage and retrieval unit uses a cassette carrier that can travel on both sides. Equipped by STOPA with a frequency-controlled drive, it checks whether shelves are occupied and whether cassettes sit properly. A

The STOPA long-span goods shelving system has separate processes, enabling DOLL to handle storage and retrieval independent of processing and perform all other tasks without waiting times and buffers.

digital travel measuring system ensures exact longitudinal positioning. An additional absolute, load-independent digital measuring system permits precise vertical positioning without having to move to a reference point. Data are transmitted to the storage and retrieval unit via a photoelectric transceiver without any physical contact. The unit reaches speeds of up to 80 metres per minute when travelling and up to 30 metres per minute when lifting and performing fork operations.

Warehouse management computer always busy

The shelving system is controlled by an industrial PC with an integral processor. The PC is used to operate the system and display its status, while the processor controls the system's components. An uninterruptible power supply (USP) ensures reliable operation. Employees can continuously read out the status of the storage and retrieval unit in plain text. A graphic display shows a plan view of the high-bay warehouse and the SRU.

The long-span goods shelving system provided by STOPA uses space very efficiently and provides fast, random access to the material

The control unit shows which cassettes have been removed from storage, along with their numbers and material lists. It also provides a graphic display of the warehouse aisle in question, including free, occupied and blocked shelves, plus empty and filled load carriers and their loading heights. DOLL specifies a minimum quantity for each kind of sectional steel in order to ensure a continuous supply for its machines and keep them working to capacity. The system automatically checks these quantities by comparing the target and actual values.

The control system communicates with the warehouse management computer, which continuously monitors stocks and material data and provides a clear picture of the stocks at all times. The storage management software is responsible not only for long-span goods but also for the sheet metal storage system that STOPA installed in the same building. This also includes the interface between the warehouse management computer and the company's ERP system.

Compelling economic benefits

Sectional steels are stored in a compact manner, allowing DOLL to save a considerable amount of space without cutting back on material. An unstaffed third shift can also increase the capacity. The long-span goods shelving system makes it possible to put more machines to work without increasing the staff and to operate the storage system at the same time. In addition, the system increases work safety.

The system also enables DOLL to simplify order processing and plan orders more easily and exactly. Moreover, production quality is improved because the sheets suffer less damage in handling. Materials are handled more gently because fork lift trucks are not used and dirt is avoided. Cycle times are reduced by roughly 50 percent through the elimination of manual chores and better organisation. All of these factors add to the economic benefits.

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