

## PRESS RELEASE

Steel storage with access in seconds

### **SSAB stores up to 6000 tons of steel in a high-bay warehouse**

**The steel manufacturer SSAB in Oxelösund produces steel plates in one minute tact cycle. The information which plate comes next for what customer is only available three minutes prior to the production exit, thus the intralogistics system must react with appropriate speed. The solution supplied by the Vollert plant engineering company from Weinsberg, is achieved by conversion from a surface warehouse to a high-bay warehouse system with two MEGA AS/RS that enable short cycle times despite loads of tonnages.**

The world hungers for steel. 1.343 billion tons of crude steel have been produced last year alone. 2007 has been the 5th year in succession with an average growth index beyond 7 %. Driving force are above all the emerging markets in Asia and Latin America but also the CIS countries. As successful as this development is, the manufacturers already reach the limits of their capacity. In the area of quenched and tempered steel for instance, the demand exceeds supply for a long time already. This is why in the past, the steel manufacturer SSAB had no other alternative but to turn away new customers. Due to the development of an additional painting line in the Swedish Oxelösund, the production now will be enlarged and the capacity considerably increased on a long-term basis. "Criteria for the increase in production is the new painting line and in addition a warehouse with sufficient place and fast functional intralogistics systems", explains Magnus Rådth, project manager at SSAB Oxelösund: "We therefore plan to increase the capacity of delivery for prepainted steel plates by 30 % up to the year 2009. "Within a period of 12 months only, the Vollert plant engineering company, specialists for many years in intralogistics systems for heavy loads, developed in its capacity as general contractor a so far unique solution in the steel area: a high-bay warehouse for up to 6000 tons of steel with access in a matter of seconds.

As soon as the 3rd painting line runs with SSAB in the Oxelösund factory from 2009 with full efficiency, every 60 seconds a sheet steel board of up to 15 x 3.5m size comes out of production. After blasting and painting and prior to order-picking a barcode will be directly printed with ink on the sheet plate by use of a new procedure that prints among others the type of steel plate, the weight and the customer allocation. After this a crane will set the steel plate onto a pallet, which at the desired time will have been brought, arranged and then at the end of the process, returned to be stacked and stored in the warehouse, by one of the two AS/RS stacking devices. The central control system automatically allocates the

pallets to certain customers or to supply contracts so that different steel plates of one order can be assorted and compiled according to order-picking, ready for delivery.

### **Short cycle times at extreme loads**

The challenge for the Vollert engineers has been to manage short reaction time and simultaneously high loads. Only three minutes prior to the production exit, the control system transfers the information to the central storage management system stating to which customer – and onto which pallet – the steel plate belongs to. Now everything must be carried out quickly: One of the two AS/RS starts running and takes the right pallet out of the warehouse where some tons of order-pre-picked steel may already be set. The two AS/RS developed by Vollert, so-called mega AS/RS are working in overhead execution and each one lifts a payload of 32 tons. With the double-storey structure of the AS/RS stacking devices, the simultaneous transport of two pallets of 16 m length and 3,5 m width can be carried out. Hence, two pallets can be exchanged in one working step thus reducing the cycle time and increasing the storage capacity. The facility, in an extreme case must run a distance of 80m as well – that is the length of the warehouse with its 500 places. At the same time high speeds grant short cycle times: The equipment manages at the rack storage and retrieval process a speed of 2.2 m/second and on the way through the warehouse of up to 4.5 m/second regardless of the total equipment weight of 140 tons. Due to this it is possible to move 60 pallets in our hour, hence.

Calculated with maximum values, 64 tons of steel dash up to 60 times per hour with 4.5 m/second through the storage aisle. In practice 5000 tons of steel on average are weekly transferred at approx. 10 tons of steel per pallet. "Short cycle times due to high speeds at large payload –our pre-settings are fulfilled at best with this equipment", according to Magnus Rådth.

### **Simultaneous storage and order picking**

The interface between SSAB and Vollert is between painting and packing. The central storage management system that controls the driving jobs of the AS/RS decides autonomously where which pallets are stored. Customer orders at SSAB can only be carried out parallel, not side by side since the individual production steps always allow a certain steel plate type only, for instance with a certain amount of thickness. This is why different steel plates ordered are picked one after another on a pallet. This pallet is automatically asked for by the warehouse management system as soon as one steel plate is ready for the allocated

customer. After de-stacking the steel plates the AS/RS stores the pallet back to the warehouse till it is required again for order-picking or for delivery to the customer. An optimum coordination of components and control system between SSAB and Vollert achieves a trouble-free connection of the production and warehouse control system.

### **Shorter ways thanks to high-bay warehouse**

On the one hand the increase of capacity is based upon the high speeds of both AS/RS. However due to the high loads, the limits of feasibility are quickly reached. The second challenge at transfer therefore has been to shorten the distances. Instead of the hitherto existing surface warehouse, a high-bay warehouse had to be built with the necessary stability to withstand the strain. The storage system plus the hall that has been accomplished is unique and one of the largest of this type worldwide. "With our high-bay warehouse for heavy loads we set the trend to convert from surface to high-bay warehousing in the steel industry" Andreas Gebhart explains, project leader in the sector of intralogistics systems for metals and automotives from the Vollert plant engineering company. "Shorter ways mean shorter cycle times and at the same time space saving". In addition the Vollert logistic solution offers utmost security. With the double execution of the AS/RS stackers and the parallel arrangement of both aisles, a fail-safe production on 365 days/year and 24 hours can be implemented round the clock. Even the annual maintenance of the equipment can be carried out under running production.

## **About Vollert Anlagenbau GmbH**

As specialists for heavy loads and large parts, Vollert Anlagenbau GmbH develops turnkey intralogistic concepts for the aluminum and metal industry. As a general contractor and full-service provider, the service range encompasses state-of-the-art material flow, storage and packaging technology as a stand-alone solution or integrated into a larger logistics environment.

Whether fully automated mega-high bay systems for aluminum coils, intelligent material flow systems for the leading aluminum extrusion press manufacturers, the world's most efficient storage and retrieval machines for the storage of sheet metal plates, automatic crane systems for 50 tons and more or the most modern surface coating systems – Vollert is everywhere.

Vollert's plant and machine solutions are used in more than 80 countries worldwide. Its subsidiaries in Asia and South America also strengthen the sales activities. Vollert employs 250 people at its company headquarters in Weinsberg. [www.vollert.de](http://www.vollert.de)

## **Press contact**

### **Frank Brost**

Senior Marketing Manager

Vollert Anlagenbau GmbH  
Stadtseestr. 12  
74189 Weinsberg/Germany  
Phone: +49 7134 52 355  
Fax: +49 7134 52 203  
E-mail: [frank.brost@vollert.de](mailto:frank.brost@vollert.de)



**Image 1**

The steel manufacturer SSAB stores 6000 tons of steel in a high-bay Vollert warehouse. The advantage: short distances and high speeds enable rapid cycle times. With storage cycle times of 60 seconds, two mega AS/RS move and store up to 64 tons of steel.



**Image 2**

The two innovative AS/RS work as overhead systems and lift a payload of 32 tons each with a travel speed of 4.5 meter/second – and a system total weight of 140 tons.



**Image 3**

80 m length, 45 m width and 20 m height that is the new fully automatic steel warehouse from SSAB. On an area of 500 storage places, large steel plates of up to 15 x 3.5 m size are simultaneously stored and picked-up.



**Image 4**

SSAB Oxelösund uses the mega AS/RS from Vollert for lifting and order picking of the steel plate packages up to a weight of 32 tons.