

PRESS RELEASE

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Fast turnaround times for 25-ton aluminium coils

High-bay and automated intralogistics system speeds up production for Aleris

Aleris International, Inc. plans to boost production capacity in Duffel, Belgium with a new Sexto mill. To ensure smooth operation, Vollert Anlagenbau from Weinsberg will provide a fully-automated intralogistics system with high-bay warehouse. Up to 32 coils with a maximum unit weight of 25 tons are moved in and out of the warehouse each hour.

Aleris is expanding its production in response to the increased demand for alloy metals in the automotive industries. The facility in Duffel is one of Europe's largest aluminium rolling plants and specialises in manufacturing sheets and coils made from aluminium. Since the high-bay warehouse for this facility will be the first of its kind for Aleris in Europe, the company turned to Vollert Anlagenbau, which has been providing intralogistics systems to the aluminium industry for many years. As engineers developed a customised solution, they were able to overcome different challenges: heavy loads, fast turnaround times, and automated transport of coils with and without a reel. The system also had to be designed to handle a wide range of coil diameters, which continually change throughout the milling process.

25 Tons on a Single Arm

The new high-bay warehouse, which is 26 metres tall, 11 m wide and 88 metres long, functions as a temporary storage area that can accommodate up to seven coils on top of each other as they pass through the milling phases. Weighing in at up to 25 tons each, the coils are lifted and transported on the outer surface at a speed of 2.5 meters per second by a rack feeder with a single telescopic arm. "The coil diameters change continuously during milling, which is why the outer surface is the only part of a coil that remains balanced, and can therefore be used for transport, regardless of how large or small the coil is. It is also possible to handle coils with or without a reel, which makes internal transport very flexible", explains Lars Strobel, project manager at Vollert. The high-bay warehouse has direct access to a continuous annealing line with a pre-treatment facility (CALP). The coils are transferred by four coil lift trucks.

Coil manipulator ensures smooth operations

A custom-built manipulator from Vollert with slewing, hoisting, and running gear and a 19.5 meter span width unloads arriving lorries. The manipulator then performs all of the following steps automatically. Transport takes place across three axes at 1 m/s with a hoisting speed of 0.5 m/s. The gripper picks up the "eye" of the coils at the balanced centre point via an automatic measuring system and transports them to the high-bay warehouse, a separate buffer warehouse, or directly to the Sexto mill as required. The manipulator also serves an oven. After being treated, the hot aluminium coils (which can reach temperatures of 500 °C) return to the high-bay warehouse to cool down. All internal transport takes place fully automatically, with no manual intervention required.

The entire system was delivered to Aleris in the third quarter of 2012. The plants have been working to full productivity since the beginning of the year and the official opening of the plant took place in March 2013.

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

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Image 1

After the manually-operated unloading of the lorry, Aleris takes over all further processes fully automatically with a custom-built manipulator from Vollert with slewing, hoisting, and running gear.



Image 2

Four lift trucks transport the coils from the high-bay warehouse to the rollers and back again



Image 3

In the high-bay warehouse, 25 tons of heavy coils are transported with a single telescopic arm on the outer surface.