

PRESS RELEASE

Weinsberg, June 2019

Just-in-time precast floor slabs for the Belgian housing industry

The Belgian building materials specialist Daerden is expanding its capacity in the production of serially prefabricated semi-finished concrete parts. Just-in-time within 24 hours, it will in future be possible to supply its customers in the booming Belgian housing industry with floor slabs. Automated processes and Vollert technology make this possible.

With 372.8 inhabitants per square kilometer, Belgium is one of the most densely populated countries in the world, ranking 11th ahead of Germany or France. The majority of the 11.4 million citizens live in metropolises and suburbs. The demand for apartments, especially in social housing, is growing strongly. "80% of residential buildings in Belgium are more than 20 years old. We have pent-up demand, therefore the building industry booms and the building projects of our customers become larger, reports also Patrick Vos, owner and Managing Director of the building material specialist Daerden. "The local government of Wallonia is investing more than 240 million euros in social housing alone in the coming years." According to the Statistical Office Statbel, this region in the south of Belgium will lack around 150,000 social housing units over the next eight years.

"Construction companies and architects throughout Belgium are increasingly relying on the precast building system," says Patrick Vos. Fixed schedules for construction projects and industrially controlled processes in pre-production ensure reliable construction progress in shorter periods of time. "So far, we have been successfully producing hollow-core slabs and special concrete parts such as columns and beams for customers throughout Wallonia for several years. Our aim is always to be able to supply our customers within 24 hours at short notice if required. In the last one or two years, however, the demand for prefabricated, semi-finished concrete elements, especially for floor slabs, has increased for larger construction projects. We have reacted to this".

Production processes flexibly adapted to the order situation

In 1995 Daerden was a real pioneer with its concrete plant in the newly developed industrial area Op't Reeck in Riemst near Maastricht. Today, almost 25 years later, the company continues to expand. For the expansion plans, a further 4.19 ha plot was acquired in 2017 next to the existing main building. "Philippe Marrié, Senior Sales Manager at the concrete

plant specialist Vollert, who as an experienced general contractor supplied the know-how and the plant technology, describes it this way: "Away from a purely stationary solution, towards a modern plant concept for the production of floor slabs with flexible processes and the latest technology. "We have optimally adapted the degree of automation of the plant components and the processes to the requirements and capacities of Daerden".

In one circulation principle, up to 20 shuttering pallets circulate permanently at the same time. "Maximum system productivity on a small floor space of 63 x 20 m" adds Philippe Marrié. More than 100,000 square meter of precast floor slabs are to be produced per year in future. "We guarantee our customers maximum delivery readiness. It must be possible to produce different element lengths and widths just-in-time. We have to react to this at short notice and be able to adapt the system sequences and pallet occupancies accordingly quickly," explains Bart Thijs, Technical Manager at Daerden. For this purpose, several floor slabs of different sizes can be produced simultaneously on one circulation pallet (13 m x 2.80 m), only the lateral edge shuttering is permanently mounted. The warehouse and production processes are controlled centrally via the VCC production control system (Vollert Control Center), which creates the order planning list, optimizes pallet occupancies, determines storage and retrieval sequences and manages curing times and loading processes. Statistical evaluations of plant efficiency are available at all times. Printouts of labels or reports make the production process transparent and storage location management simple.

The right degree of automation is decisive

For precise recording of the contours of the floor slab parts, a SMART PLOT plotter applies colour according to CAD/CAM specifications before the shuttering profiles are manually positioned and the reinforcement grids inserted. A SMART CAST concrete spreader applies the precisely specified amount of concrete, whereby hydraulically operated flat slides can cut out individual sections, for example for electrical or sanitary recesses. The concrete is compacted by means of a SMART COMPACT² shaking station, which creates a smooth exposed concrete surface on the underside. This takes place at low frequency and thus without any major noise development, which was a requirement due to the proximity of the industrial area Op't Reeck to the adjacent residential areas. A roughening device then roughens the top surface for a better bond with the in-situ concrete.

Another technical highlight: the fully insulated VARIO CURE curing chamber with two rack towers arranged in series. The rack system with 17 pallet compartments one above the

other and an intermediate passage level offers a particularly innovative, space-saving concept thanks to the tandem design. After concreting, the freshly concreted element slab moves at ground level to the intermediate level of the curing chamber, another one can follow in series. "What's special here is that there are 8 shelves below the entrance level and 9 shelves above," explains Frank Langenfeld, Project Manager at Vollert. A stationary VARIO STORE storage and retrieval machine, which is installed centrally behind the two rack towers, takes over the first retracted floor slab element, whereby the second floor slab element moves into the front rack tower via a special coupling system. The following storage and retrieval operations are carried out according to the same tandem principle. Sectional lifting doors ensure that no heat is lost during retraction and extension. After the complete curing process, a SMART LIFT lifting beam removes the floor slabs for loading and transport to the customer's construction site.

Well positioned for the future

"State-of-the-art technology and an appropriate degree of automation are the hallmarks of this plant concept", summarizes Patrick Vos. "Above all, the flexible work processes enable us to react quickly to a changing order situation. And, of course, to deliver 1a quality to our customers." Thanks to plant components that have proven their worth in practice for many years, combined with detailed further developments and customer-specific preliminary planning, the entire new construction project was completed within an extremely short period of just a few months, from project enquiry to commissioning. "After only 8 weeks, 70% of the maximum production capacity has already been reached," says Vos.

"We are pleased to have extended the circle of our satisfied customers with Daerden and wish Mr. Vos and his team a successful future" adds Philippe Marrié.

About Vollert Anlagenbau GmbH

With more than 370 built precast concrete plants, Vollert Anlagenbau GmbH has become worldwide one of the leaders in technology and innovation in the precast concrete industry since 1925. Vollert always offers its customers state-of-the-art technology, from simple start-up concepts to highly automated multifunctional plants and systems for large and structural concrete elements or prestressed concrete sleepers for tracks and rail networks.

The specialists provide manufacturers of construction materials, construction companies, and property developers with advice on the latest developments in precast concrete manufacturing technology and devise customized, turn-key plant and machine concepts, ranging from high-performance tilting stations and battery moulds for stationary production to automated circulation systems and special formwork, for example, for columns, beams, and prefabricated staircases.

Vollert's plant and machine solutions are deployed in more than 80 countries around the world and in Asia and South America the company's own subsidiaries strengthen in addition the sales activities. Vollert employs more than 300 people at its company headquarters in Weinsberg. **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



Image 1
The Belgian building materials specialist Daerden expands its capacities in the production of serially prefabricated concrete semi-finished parts.



Image 2
For precise recording of the contours of the ceiling parts, a SMART PLOT plotter applies colour according to CAD/CAM specifications.



Image 3

A SMART CAST concrete spreader applies the exact amount of concrete required.



Image 4

A roughening device roughens the top surface for a better connection with the in-situ concrete on.



Image 5
Another technical highlight: the fully insulated VARIO CURE curing chamber with two rack towers set in a row.



Image 6
The stationary VARIO STORE storage and retrieval machine takes over the floor slabs for storage and retrieval.



Image 7

After the complete curing process, a SMART LIFT lifting beam removes the element slabs for loading onto the construction site.



Image 8

Cleaning of shuttering profiles from dirt and concrete residues.



Image 9
Loading the floor slabs onto the construction site.