

Avermann Betonfertigteiltechnik GmbH & Co. KG, 49078 Osnabrück, Germany

PPHU Mackiewicz has invested in a tilting table production line for manufacturing precast concrete components

Investment in new systems by the precast concrete component industry was for many years very limited in Poland. In December 2017, Avermann received an order from PPHU Mackiewicz based in Łomża to supply a tilting table production line for manufacturing flat precast.

The town of Łomża, where precaster PPHU Mackiewicz has its head office, is about 150 km north-east of Polish capital Warsaw, so there is a very large potential delivery area close to the new production facility.

The major part of the equipment, with which PPHU Mackiewicz wanted to expand its production, was supplied by Avermann Betonfertigteiltechnik GmbH & Co. KG with their head office in Osnabrück, Germany. Avermann's extensive expertise and experience gathered over many years in precasting played a decisive role in this.

After the existing production hall at Łomża had been completely refurbished in 2018, Avermann set up the new equip-

ment there during the first quarter of 2019. The tilting table line was designed, supplied, assembled and commissioned on time in an extremely efficient, professional manner.

Assembly in the first quarter, commissioning in the second

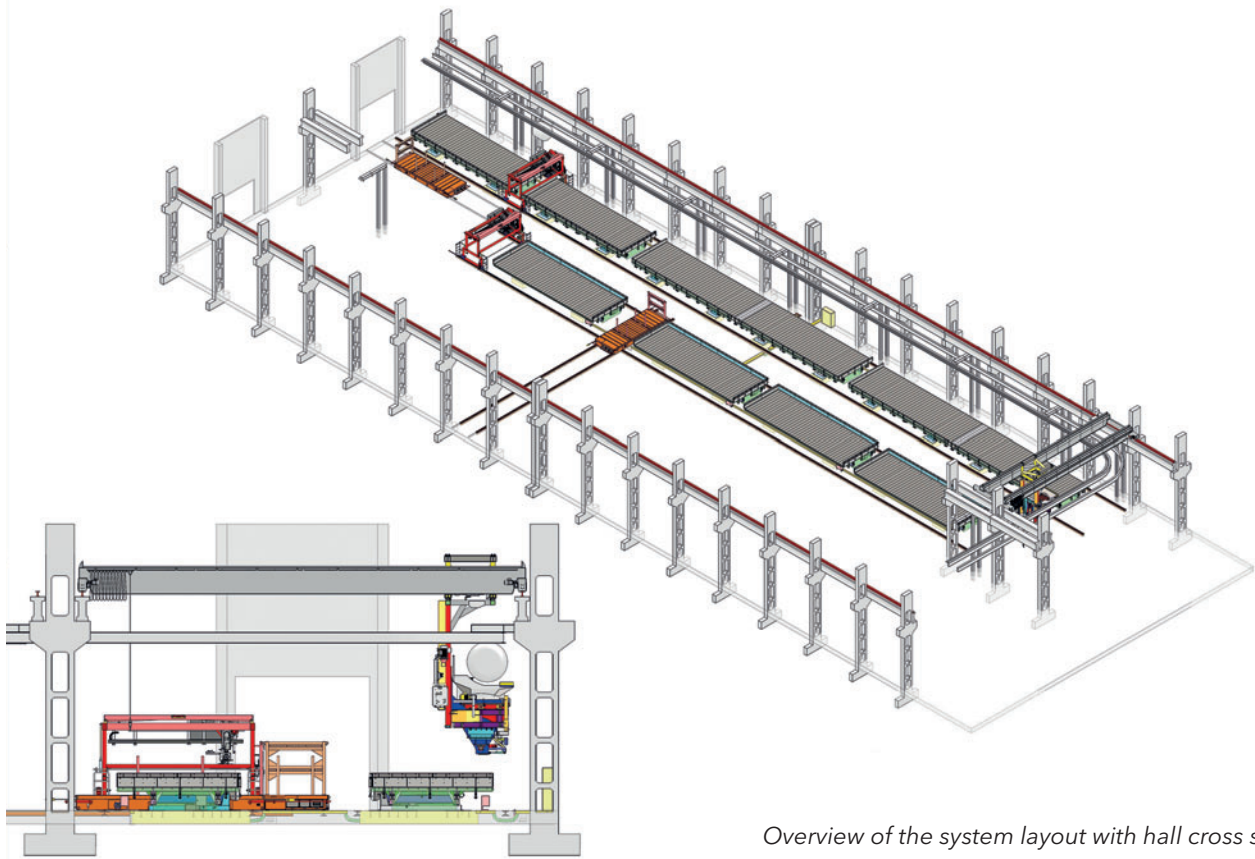
This applies equally to commissioning and commencing production with a new precast system subsidised by an EU grant in the second quarter 2019.

One of four factory building sections measuring 105 x 18 m (L x B) was reserved for the equipment from Avermann. The hall's height is approximately 10.70 m up to the lower edge of the roof trusses.

The tilting table production line for manufacturing walls was installed in this hall section. The line is composed of: ten tilting tables (13 x 4.5 m) with a 750kg/m² load-bearing capacity, a crane-operated concrete spreader, a power trowel for smoothing concrete components, two battery-driven, run-off carriages to bring the components to their place of storage.

The refurbished halls at the PPHU Mackiewicz precasting facility





Overview of the system layout with hall cross section



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Avermann Betonfertigteiletechnik GmbH & Co. KG
Lengericher Landstr. 35 · 49078 Osnabrück/Germany
Tel.: +49 5405 505-0 · Fax: +49 5405 6441 · info@avermann.de



Pictures from the production hall



Tilting table

Many differing types of wall and façade elements can be concreted on the ten hydraulic tilting tables, which are partially set up as tandem groups. All tables have been fitted with edge formwork possessing infinitely variable adjustments in height as well as permanently installed vibration technology so that sandwich walls can be manufactured in thicknesses up to 50 cm from SCC and conventional concrete.

The tilting tables are heated with hot water using a pipe system laid out under their surface. This enables the curing process for each component to progress more rapidly.

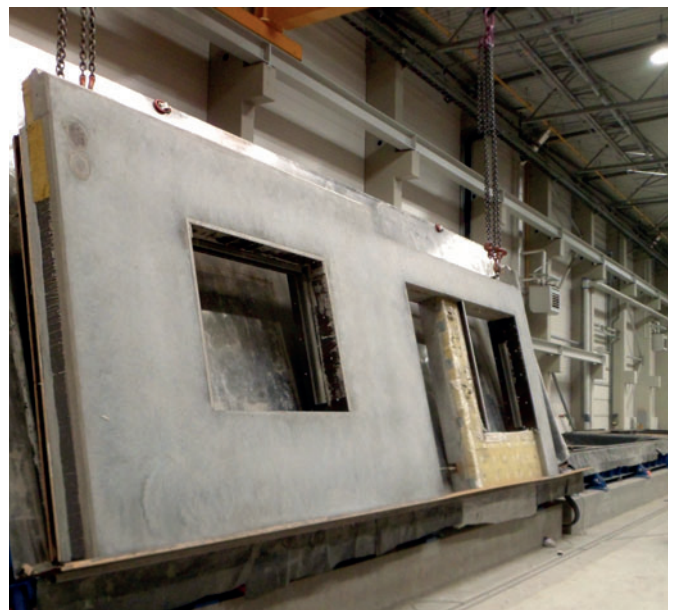
Approximately 350 m² precast can be produced at a 60% occupancy rate of the tilting tables. The PSV system made by Ratec GmbH is employed as loose stops.

Concrete spreader

Two twin-girder overhead bridge cranes are available in the hall section. One of the cranes was supplied in a special version to handle coupling up the concrete spreader. The spreader is simply hung onto the crane and travels on a crab frame using an appropriate adapter so that the crane can be utilised for other tasks. The coupling and decoupling procedure for the spreader including automatic power cable supply takes just on two minutes.



Tilting table line for producing walls





Concrete spreader being coupled to the crane

Concrete is supplied by a bucket conveyor made by Rekers. Once the operator has requested concrete, the mix will be produced in the mixing system and transported to the crane with the spreader by means of the Rekers bucket conveyors. This saves time as concrete can now be transferred at any place in the hall.

The spreader has a 2 m³ capacity. The concrete is delivered onto the tilting table tailor-made using the spreader's inbuilt hoisting unit in conjunction with a turning device. All functions are radio remote controlled.

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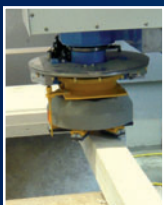
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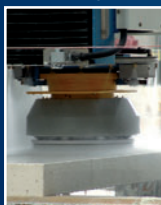
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Power trowel during the smoothing process



Smoothed concrete component

Power trowel

A floor-guided power trowel travels over the ten tables for smoothing the components; it assures an especially smooth surface.

The power trowel glides over the surfaces of the components once the concrete has set. It requires a deft touch to find the right point in time for the preliminary smoothing process (with a disc plate) and subsequent polishing. This calls upon the operator's skills and experience.

The power trowel travels along the ground longitudinally with its own running gear and can be positioned on each production line by means of the hall crane. Waiting times can be avoided in the production process thanks to this flexibility – of having access to every component at any time – that is especially important because the proportion of products need-

ing smoothing is growing continually. All functions are radio remote controlled.

Run-off carriage

Finished components travel to their place of storage at the hall's front end on battery-driven run-off carriages guided on rails.

Summary

PPHU Mackiewicz can manufacture a wide range of precast concrete components on its cutting-edge machines from Avermann and is excellently positioned on the Polish market. Avermann carried out the project to the customer's complete satisfaction. ■



Run-off carriage

FURTHER INFORMATION



Avermann

Avermann Betonfertigteiletechnik GmbH & Co. KG
Lengericher Landstraße 35
49078 Osnabrück, Germany
T +49 5405 505 0, F +49 5405 6441
info@avermann.de, www.avermann.de



Mackiewicz

PPHU MACKIEWICZ Danuta Genowefa Mackiewicz
Al. Piłsudskiego 117 A
18-400 Łomża, Poland
www.mackiewicz.podlasie.pl