

Zbych-Pol & Mobet Sp. z o.o., 88-300 Mogilno, Poland

New production lines for the manufacture of pre-stressed slabs and multi-layer walls

Polish precast manufacturer Zbych-Pol & Mobet Sp. z o.o. recently implemented a complete Nordimpianti processing line for the production of "HC"-type pre-stressed floor slabs and a complete line for the production of multi-layer walls delivered by Avermann. The implementation of the new technology at Zbych-Pol & Mobet Sp. z o.o. has significantly strengthened the company's competitiveness on the market.

The Polish family-owned company Zbych-Pol & Mobet Sp. z o.o. is a manufacturer of precast elements for modern residential and industrial construction markets. It has been strengthening its market position for many years. Since the beginning of its operations in 2003 the company has been committed to the systematic development and investment in new production lines, a technological fleet and modern technologies. The aim of the company's operations is to provide its customers with top quality products meeting their defined needs and expectations, starting from design to transportation, installation of finished elements for the infrastructural (pre-stressed bridge elements, road and railway culverts, road slabs), industrial (columns, pre-stressed girders, purlins and TT slabs) and residential (floors, flights and walls) construction sectors.

In the years 2018 and 2019, the company implemented a complete Nordimpianti processing line for the production of "HC"-type pre-stressed floor slabs and a complete line for the production of multi-layer walls delivered by Avermann.

High quality smooth slab surface

The plan for the entire enterprise was created in 2016, when construction works for a production and storage hall with an area of 6,500 m² started and a third concrete batching plant was purchased. Specialists developed a detailed concept of the entire production process for the manufacture of pre-stressed slabs, from the arrangement of the 108 m long prestressing beds with a suspended concrete distribution system, a concrete curing system and a transportation system for the precast elements. The production process is characterised by a high degree of automation and the slab formation with an extruder ensures a high-quality smooth slab surface. The production technology allows for the manufacture of approx. 400 m² of "HC"-type pre-stressed floor slabs per day, the slabs having a desired length and a modular width of 1,200 mm and 600 mm, and a height of 150 mm, 200 mm, 220 mm, 265 mm, 320 mm, 400 mm or 500 mm.



Extruder EVO casting machine with fully automatic concrete distribution system



Multi-angular cutting saw while cutting deep 500 mm hollow core slabs



Multi-function bed cleaner while preparing the casting bed



High quality hollow core slabs produced by Nordimpianti Extruder EVO machine

The implementation of the new technology at Zbych-Pol & Mobet Sp. z o.o. has strengthened the company's competitiveness on the market. Pre-stressed hollow core floor slabs are used as finished elements of slab floors for all types of construction industries.

High-quality tilting tables for multi-layer walls

Another notable enterprise was the launch of a complete line for the production of multi-layer walls in March 2019.

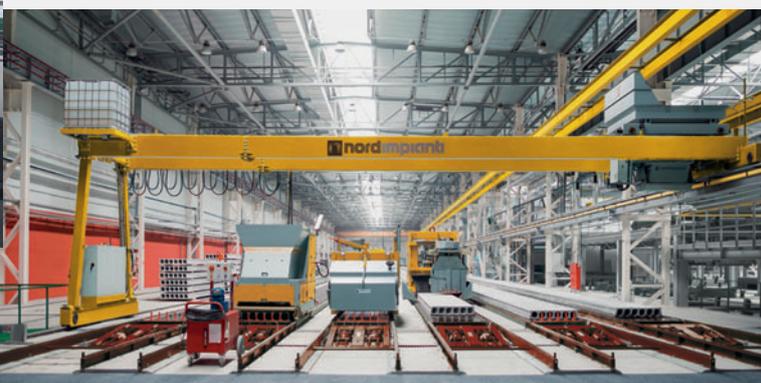
Eight high-quality tilting tables from manufacturer of machinery Avermann, including equipment for forming and smoothing of the surfaces of precast elements, were installed in another hall with an area of 4,500 m². The production process has a daily output of more than 400 m² of walls which are used as finished elements in the single- or multistorey residential construction industry and for public buildings.

With the new Avermann equipment Zbych-Pol & Mobet Sp. z o.o. now produces walls on eight hydraulic tilting tables with

nordimpianti



References Referências Референции Referenze 业务范围 Referencias Referanslar Referencje Referenzen



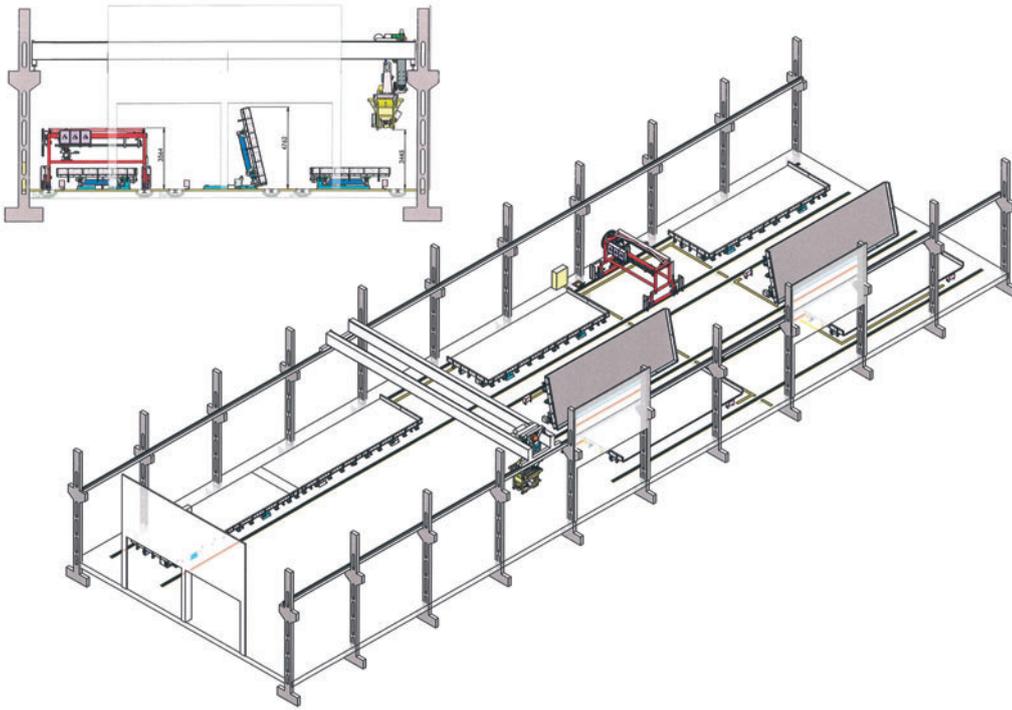
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Layout of the Avermann plant at Zbych-Pol & Mobet Sp. z o.o.

a size of 13 x 4.5 m each. Two of the tables were designed as a tandem group. All tilting tables are equipped with stepless height adjustable edging formwork systems as well as with fixed vibration devices. Thanks to these features Zbych-Pol & Mobet Sp. z o.o. can produce on these tables sandwich walls with a thickness of up to 50 cm made from concrete or self-compacting concrete (SCC).

The tilting tables are equipped with a piping system for hot water, which is installed underneath the table surface. This technology helps to speed up the hardening process of the precast concrete elements.

Smoothing device

A portal mounted smoothing device moves on rail tracks from tilting table to tilting table and smoothens the surfaces of the precast wall panels on all eight tables.

An indoor crane lifts the smoothing device, moves it to the production line and sets it down on the rail tracks of that line. This flexibility to move the smoothing device at any time to any desired tilting table makes it possible to work on any precast element at any time avoiding waiting times that otherwise could disturb the production process. This is even more important as the demand for precast elements with smoothed surfaces is constantly growing. All functions of the smoothing device are radio remote controlled.

Concrete spreader with stabilizer

One of the indoor cranes at the Avermann production line at Zbych-Pol & Mobet Sp. z o.o. is designed to pick up and transport a concrete spreader with stabilizer. The concrete

spreader is coupled to the crane and moved via the stabilizer and the trolley frame only when it is needed. It is decoupled from the crane if it is not needed. In this way the crane can also be used for other purposes. At the moment Zbych-Pol & Mobet Sp. z o.o. uses a truck mixer to feed the concrete spreader, but it is also possible to deliver the concrete with a bucket conveyor.



Eight high-quality hydraulic tilting tables with a size of 13 x 4.5 m each have been installed at Zbych-Pol & Mobet Sp. z o.o.



One of the Konecranes indoor cranes at the Avermann production line at Zbych-Pol & Mobet Sp. z o.o. is designed to pick up and transport a concrete spreader with stabilizer.



Avermann also delivered a device to smoothen the surfaces of the precast elements on the tilting tables (see foreground left).

The concrete spreader has a volume of max. 2 m³. As already mentioned above the spreader is moved via the stabilizer and with help of the bucket turning device the concrete is discharged freely and metered on the tilting tables.

All functions of the spreader are radio remote controlled.

Vast opportunities

The product offer of Zbych-Pol & Mobet Sp. z o.o. includes a wide range of walls: single-layer walls with a single load-bearing layer, double-layer walls consisting of a load-bearing and an insulation layer, and triple-layer walls consisting of a load-bearing, an insulation and a façade layer made of textured or smooth-trowelled architectural concrete.

The cooperation with Avermann was very efficient, from the signing of the contract to the final acceptance report. The contract delivery was completed within seven months. The installation of the new machinery took approx. 1.5 months.

“The technology of precast building construction in Poland is still underestimated by designers and general contractors. I feel that unfortunately we remember the proverbial large panel of the past to this very day. The plant's development has provided us with vast opportunities; thus, the company is ready for expansion and export. We are establishing contacts with investors in Poland but also in Scandinavia and Germany. Due to the high quality of our elements and common EU certification, the manufacture of precast units is not limited to the local market but also succeeds abroad,” says Iwona Szczęsna Dymel, President of the Management Board at Zbych-Pol & Mobet Sp. z o.o. ■

FURTHER INFORMATION



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