Ebawe Anlagentechnik GmbH, 04838 Eilenburg, Germany

New circulation system for long-standing customer

HTB Hoch- und Tiefbaustoffe GmbH & Co. KG has expanded its plant in Könnern in Saxony-Anhalt. At the end of 2017, a dilapidated building was razed to the ground and the surrounding area prepared for the construction of the new ceiling and wall circulation plant by Ebawe Anlagentechnik, a Progress Group company. The construction of the new factory building quickly took shape, so that the production plant was already operational in May 2019.

The history of the company dates back to 1840 when the U. Roth's Dampfziegelei und Zementfabrik was founded at the foot of the Saalberg. In 1957 the company merged with Otto Hoffmann KG - a plant for the production of precast concrete products. In 1992 the company was privatised and is now run as HTB Hoch- und Tiefbaustoffe GmbH & Co KG by managing director Michael Seiffarth and authorised signatory Roland Troschke. The precast concrete company currently employs approx. 100 employees from the production, vehicle fleet, administration and technical office departments.

The producer of precast concrete elements from Saxony-Anhalt supplies its customers with wall elements and floor slabs, special structural components, concrete stairs, platforms, columns, transoms, filling and washing stations as well as car-wash boxes and car washes. The elements are planned and drawn with the aid of modern CAD programs, which guarantees a very high degree of planning reliability and quality. The company produces the required aggregates in a nearby gravel pit. The products are subject to continuous quality control and are approved for concrete production as well as for underground construction, road construction and hydraulic engineering.

HTB GmbH & Co KG already has an old plant from the former Ebawe Maschinenbau GmbH. The production plant for the manufacture of precast slabs with in-situ topping, installed in 1998, was still in operation until recently and is now to be sold. The ageing concrete spreader in the old plant had already been equipped with a new model from Ebawe in 2017.

The producer of precast elements HTB Hoch- und Tiefbaustoffe GmbH & Co KG has so far purchased double walls from external suppliers. With the new production plant, it can now produce both precast slabs with in-situ topping and

In the new circulation plant at HTB Hoch- und Tiefbaustoffe GmbH & Co KG in Könnern, the pallet surface is optimally cleaned by the pallet cleaner after deshuttering.

The combined shuttering and deshuttering robot from progress Maschinen & Automation works with the Infinity Line® shuttering system, which significantly reduces the amount of shuttering required and enables very high-quality outer edges to be produced.

The reinforcement was also automated to the greatest possible extent in the new factory for double walls and precast slabs with in-situ topping in Könnern. The Wire Center laying robot places longitudinal and transverse bars as well as the lattice girders into the shuttered pallets with two robot arms.

double walls. The newly built hall has two hall aisles: the new circulation plant is located in one of them and the production of the structural concrete parts is being relocated to the second hall aisle.

Attention was paid to automation in the new production plant: four pallets can be produced per hour. On the 37 pallets, double walls and precast slabs with in-situ topping can be produced in any length and height within the pallet dimensions of 12.50 x 3.55 m. The Infinity Line® shuttering system supplied can offer decisive advantages when shuttering

The new concrete distributor from Ebawe takes over the fully automatic concreting of the precast slabs with in-situ topping and double wall elements.

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HTB has horizontal compaction as well as a combined compaction device at its disposal for the compaction of the freshly concreted elements.

the elements. Straight element edges can be shuttered without any polystyrene addition if the length is in cm increments. By configuring the different shuttering lengths, the customer can produce many different dimensions without the need for manual insertion of filling elements. Although the system requires a slightly higher number of shuttering profile lengths, the advantages are obvious: a significant reduction in the manual shuttering work and a significant improvement in the quality of the end products. In addition, the elimination of polystyrene filling elements means that outer edges of very high quality can be produced from chamfer recesses.

The shuttering purchased from Ratec is set by a combined shuttering and deshuttering robot from progress Maschinen & Automation, which is also a Progress Group company. The storage robot takes over the storage and retrieval of the shuttering profiles.

The reinforcement is produced directly and just in time in the new hall: with an MSR straightening and cutting machine, the reinforcing steel is straightened from the coil and cut to the required lengths. The spacers, which are stored in two pots, are shot fully automatically onto the bars. Through this additional automation, the customer achieves high savings on spacers, which would otherwise have to be inserted manually in larger numbers. The lattice girders are purchased, stored in an active warehouse and, during production, are cut with the GTA lattice girder cutting machine to precisely fit the elements to be produced. The reinforcement is inserted fully automatically with the help of the Wire Center laying robot, which places longitudinal and transverse bars as well as the lattice girders into the shuttered pallets with two robot arms.

Concreting of the wall elements and floor slabs is carried out with an automatic concrete distributor from Ebawe Anlagentechnik. HTB Hoch- und Tiefbaustoffe GmbH & Co KG has two compaction units at its disposal for the compaction of the fresh concrete: a horizontal compaction device and a combined compaction device with movement in the horizontal and vertical planes. The stacking rack offers space for 36 pallets and is served by a lifting transfer table. The heating system installed in the stacking rack was supplied by CureTec Energietechnik. Further components of the circulation plant are a turning device for the production of double walls and a tilting device for lifting the wall elements. There are also cleaning facilities for the pallets and shuttering profiles and a fixed release agent spraying device which wets only those surfaces of the pallets to be covered with concrete with release agent.

In the course of the new hall construction, investments were also made in a mixing plant from Nisbau GmbH as well as in a new bucket conveyor from Kübat Förderanlagen.

The system is rounded off by the ebos® control system from Progress Software Development, another Progress Group company. In addition to the main module, various cockpits

For the construction of double walls, the cured first shell is turned over and set down over the freshly concreted second shell. This process is implemented with an automatic turning device.

have been set up in Könnern, e.g. for printing worksheets and labels, and the necessary sub-systems for the corresponding machines have been programmed. The Graphical Performance Analyzer – a patented analysis tool for the investigation of production processes – allows a film-like replay of the entire process afterwards, making delays and bottlenecks easier to detect and eliminate.

HTB Hoch- und Tiefbaustoffe GmbH & Co KG has not only built on a long-standing business relationship with Ebawe/ Progress, but has also set itself the goal of strengthening the regional economic power. Thus, a large part of the investment was awarded to local companies that have demonstrated a high level of efficiency.

HTB looks confidently to the future. The new plant can also produce solid concrete wall elements with a thickness of 16 cm. The production of façade elements in very high quality is now also assured - the new mixing plant can produce concrete from white cement and colour aggregates.

The stacking rack offers space for 36 pallets and is served by a lifting transfer table.

Productivity at the new plant in Könnern was increased by 100%. With the same number of employees, twice as many wall elements and floor slabs are produced.

This product is rounded off by the dosing of plastic and steel fibres, which is also possible with the mixing plant and which results in improved stability and reduces cracking in elements. The freshly concreted elements pass through the drying chamber integrated in the circulation, which guarantees a high degree of consistent quality.

Managing director Michael Seiffarth is very satisfied with the new pallet circulation system: "We were able to increase our productivity by 100%, i.e. the same number of employees produces twice the amount of floor and wall surfaces". ■

FURTHER INFORMATION

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