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REPRINT | CONCRETE PRODUCTS & CAST STONE

Customised solutions for the
Wetcast and Precast sector



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Customised solutions for the Wetcast and Precast sector

The Wasa Construct division within the Wasa Group is growing at an unexpectedly high rate. After the production of polyurethane wetcast molds was started 13 years ago, the production of large-format form liners and molds for the Precast sector was added in 2018. At last year's bauma, the business segment was supplemented by the Wasa Tools range, products in the area of wear parts, and the Wasa Shuttering business segment brand, shuttering systems for all flat precast concrete parts. These various expansions also necessitated larger hall areas at the Thuringia plant and investment in new plant and technology.

The largest polyurethane mold ever to leave Wasa's plant in Neubrunn in Thuringia measured 7.00 x 2.20 metres. The Precast molds were used to produce parts of the cladding of the

Budapest Puskás Ferenc football stadium. With a net weight of over 2,000 kg, they were also the heaviest polyurethane molds ever produced at Wasa. To produce such molds, models are always required, which are milled from a single piece and then serve as a template for the master mold. Wasa has since had to have these models milled by external service providers. On the one hand, this led to long delivery times in some cases, as the service providers did not, of course, operate their milling machines exclusively for Wasa. On the other hand, Wasa has always been dependent on quality control by an external company.

This contradicts Wasa's philosophy, where great importance is attached to the greatest possible vertical range of manufacture. Consequently, the company decided to purchase its



View inside the mold production at Wasa. On a total of 4,000 m² in two halls, everything from the initial idea to the finished product takes place here.

The new 5-axis portal milling machine in operation.



own CNC-controlled 5-axis portal milling machine. With model processing dimensions of 5,000 x 2,800 x 1,000 mm (length x width x height), the company is very well equipped for future orders and can now mill complex and large-volume casting models in-house. For Wasa's customers, the investment of 400,000 EUR means that everything from the initial product idea to the ready-to-use casting resin mold is supplied from a single source. The advantages are not only considerable time and cost savings, but also the shortest possible development cycles for new stone series and façade structures.

Milling machine as 3D printer

Wasa is pursuing a completely different application purpose with the idea of also using the milling machine as a 3D printer in the future. A research project is currently underway with the Technical University of Chemnitz. The aim is to use a very specific material, which for reasons of secrecy may not yet be discussed, to first print the models with oversize, then to bring them into their final form with the help of the 5-axis portal milling machine and finally to subject them to a final treatment. The surfaces of the models are finished after CNC pro-

cessing. The models then receive an additional coating to ensure a smooth and closed surface. By entering the field of modern 3D printing, Wasa enables its customers to implement even the most complex structures and mold requests. But the new milling machine not only does a good job when it comes to the production of large-sized molds. The new technology is also used in the area of smaller wetcast molds or in the Wasa Tools division. For example, models for coating steel elements or for wear protection (e.g. feed pawls) on the milling machine are produced under the Wasa Tools business segment brand.

Wasa Shuttering

Wasa offers universally usable longitudinal and transverse shuttering systems under the Wasa Shuttering brand. Here, wood-based panels made of European spruce veneer are coated with polyurethane in Shore A-65. The edges of the wooden beams are also provided with the flexible polyurethane and thus give the production table a laminar seal. Wasa's shuttering systems are supplied with a standard bevel at the factory to produce smooth and clean edges on all sides of the cast stone. The highly wear-resistant PU coating on the



*New Wasa Shuttering system
for flat precast concrete elements*

concreting and edge side reduces the wood swelling of the veneer layers used. Elaborate silicone work, which is usually required to seal the shuttering and form the chamfers, is now a thing of the past. Wasa Shuttering thus saves material resources and valuable working time for equipping the shuttering in the long term. The shutters can be used for all standard commercial adapters and magnet systems.

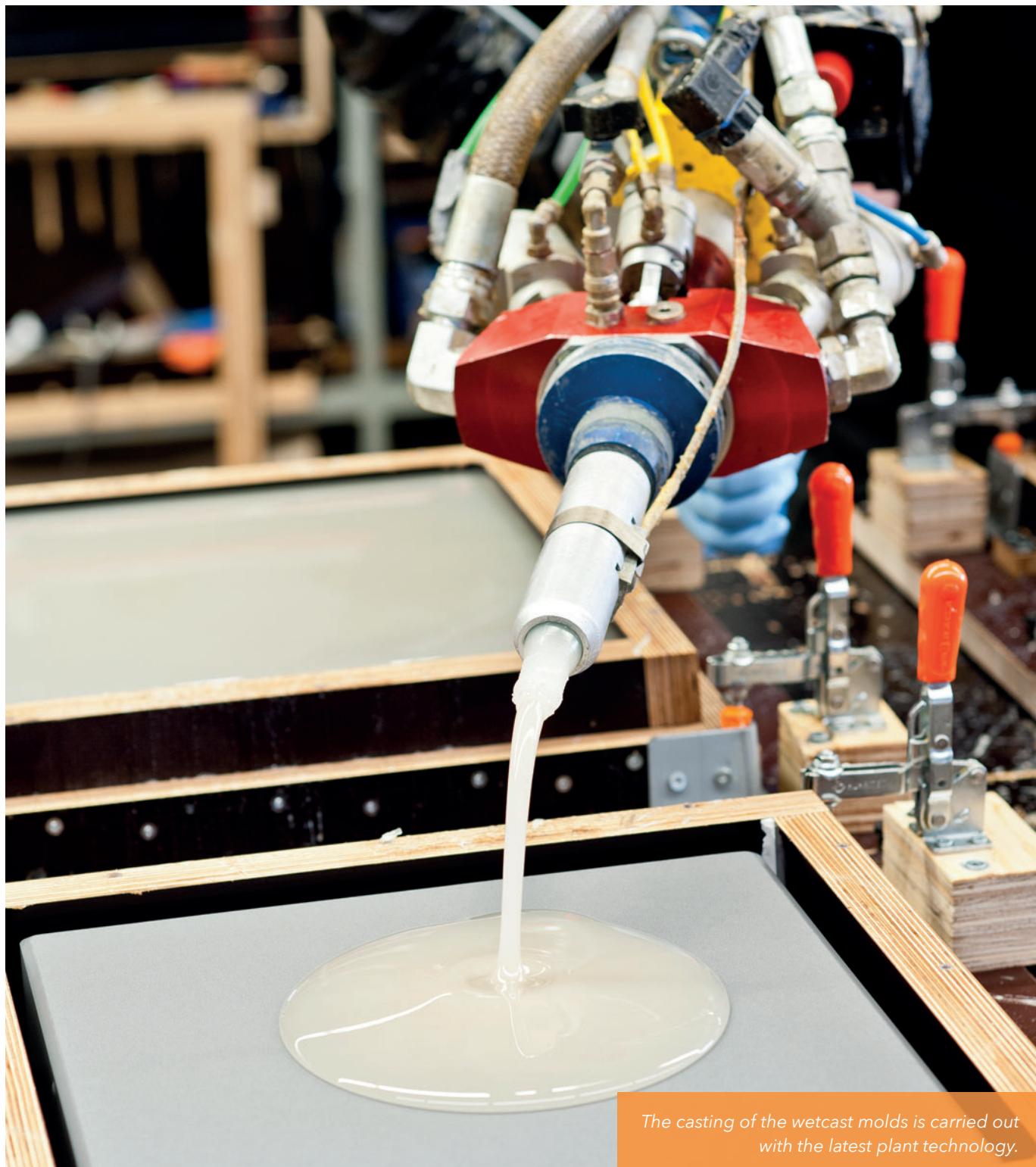
Wetcast molds

The comprehensive project development of the wetcast molds for later trouble-free concrete block production is

carried out individually for each customer. The installed or planned demolding method, the block geometry, the release agent and the application of the release agent play very important roles here. Customers in the concrete block industry currently have four different polyurethane systems with different degrees of hardness at their disposal: Shore A-30, Shore-A45, Shore A-65 and Shore-A80. The materials used by Wasa are easy to process and are highly resistant to abrasion and release agents. Further advantages are the greatly reduced shrinkage behaviour and high tear propagation resistance. All materials also meet the requirements of the European Chemicals Regulation REACH.



*Weighing over 2,000 kg
and seven metres long:
one of a total of 30 molds
for the Puskás Ferenc
stadium in Budapest.*



The casting of the wetcast molds is carried out with the latest plant technology.

Not every customer wants to purchase production-ready molds, but may already have their own mold production facility and is simply looking for the best raw material. Wasa supplies a wetcast sampling kit as a special offer for the production of proprietary polyurethane molds. The set enables the customer to mix the materials himself and thus to test the project in advance in small series. For those who would like to get into mold production after successful sampling, Wasa Pur

Polyurethane is available in pure form, which Wasa offers in various container sizes from 7.5 kg buckets to 1,000 kg IBCs. Wasa Pur is a low-viscosity, two-component casting resin. Due to the low viscosity of both components and the extended pot life of at least 30 minutes, the casting compound is easy to process in open, manual pouring. In addition, Wasa Pur is free of plasticizers and mercury and does not stain the end product.



High vertical range of manufacture: from model making to the finished wetcast mold, every step of the process takes place at Wasa.

13 years after the production of the very first wetcast mold at WASA's Neubrunn plant, the polyurethane sector has developed considerably. However, the research and development team around the responsible persons Dr. Arno Schimpf, managing director, and David Werning, authorized signatory, are far from having reached the end of their ideas. And so it remains exciting to see what other product innovations from southern Thuringia will find their way into the wide world of the concrete block industry.

FURTHER INFORMATION



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