**Ein Bild, das Zeichnung enthält.

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**Press release**

**BBG: use a single universal mold for the PU encapsulation of up to 15 different water tanks**

**Flexible-to-use and partially automated molds reduce cost**

*Mindelheim, 16 June 2020.* BBG, the manufacturer of molds, machinery and plants, develops and manufactures flexible-to-use molds for encapsulating different water tank sizes with insulating rigid polyurethane foam (PU). The series-production molds are designed in such a way that it only takes a few steps to adapt them to different tank sizes, model versions and connection types. They can be operated manually or, on the basis of a PLC control system, semi-automatically, and then either hydraulically or pneumatically. The layer of fine-cell polyurethane rigid foam with a closed cell structure that is created when the tanks are encapsulated ensures that gas transport is delayed. This results in particularly good insulating properties so that the stored hot water maintains its temperature for a long time.

Encapsulation with a few universal molds increases the economic efficiency of water tank production. Mold cost can be reduced significantly in particular when small batch sizes are produced with a high variety of types. Furthermore, the easy handling of the mold and a sensor system for process monitoring and control ensure short set-up times.

A number of BBG’s customers already use the series-production molds for encapsulating drinking and process water storage tanks. The most versatile molds can be used to encapsulate up to 15 different tank models with capacities ranging from 100 to 1,000 liters. They are used in combination with solar systems, heat pumps, oil or gas heating systems and solid fuel boilers, as well as for hot water supply in low-energy buildings.

**Many manufacturers have several hundred molds in stock**

Most manufacturers of water tanks offer their customers a large number of different model versions. These differ in terms of size, equipment and location of connections for water inlet and outlet pipes, threaded sleeves, temperature sensors and other elements. “Many producers have hundreds of molds in stock. This means that many thousands of euros are tied up in molds that can often only be used for a single tank model“, Gerhard Hörtrich, sales and project manager at BBG, describes the situation in the industry.

**BBG cooperates closely with their customers**

BBG develops their universal molds in close cooperation with their customers. In the process, they clarify, among other things, which sizes and insulation thicknesses, how many tank versions and which equipment options are desired. BBG then uses those specifications to design the mold. To ensure that the mold can be used universally for all versions, the upper edge of the foam can be adjusted to match the tank height by means of a movable lid. There are also exchange strips for type-specific elements, which are inserted into the mold to match the model. BBG attaches great importance to a high level of precision of all parts to ensure that no polyurethane penetrates to the outside despite the high internal pressure during the encapsulation of the tank.

**Partly automated manufacturing**

For encapsulation purposes, the water tank is placed on the retractable base plate of the mold and rolled into the open upright mold shells. Type-specific coded strips are mounted in the mold to accommodate the model-specific equipment features.

In a partially automated production process, the PLC control checks whether or not the mold is prepared correctly. Sensors automatically detect the tank model and the position of internal parts. A status inquiry with position control checks whether the clamping device closes the mold correctly. Encapsulation can only be started once the control system sends the enabling signal. While the polyurethane is injected into the mold and cures, externally mounted heating mats ensure a constant temperature and an optimum encapsulation process.

**Toolmaking and customer orientation awards for BBG**

BBG relies on more than twenty years of experience in toolmaking. In 2018, the company was honored as one of the best toolmakers in the German-speaking world within the framework of the "Excellence in Production" competition. Among more than 300 participating companies, the family-owned company made it to the final round of the competition, which is organized by the Machine Tool Laboratory WZL of the Rheinisch-Westfälische Technische Hochschule (RWTH) and the Fraunhofer Institute for Production Technology, which are both based in Aachen.

**BBG’s customers are active the world over**

BBG GmbH & Co. KG, a manufacturer of molds, machinery and plants, is a renowned specialist for the plastics-processing industry. In addition to end-to-end production facilities, we design, develop and produce molds for the processing of polyurethane (PUR), PVC, TPE and other elastomers as well as a wide range of fiber-reinforced materials. This includes production processes such as PUR-CSM (PUR Composite Spray Molding), LFI (Long Fiber Injection), RTM (Resin Transfer Molding), SMC (Sheet Molding Compound) or GMT (Glass Mat reinforced Thermoplastics), which are selected depending on the desired qualities of the finished products. Further important areas include solutions for light-weight design, the processing of composites and the manufacturing of components made of fiber-reinforced plastics for a large number of industries.

BBG, the family-owned business, which is located in Mindelheim/Allgäu and is run by Hans Brandner, the managing partner, supply their products to their customers all over the world, with the Asian market playing an important role in addition to the markets in Europe and North America. With a headcount of around 170, BBG generated worldwide sales to the tune of 25.4 million Euros in 2019.

**Photos:**

Ein Bild, das drinnen, sitzend, Tisch, Computer enthält.

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Photo 1:

The layer of fine-cell polyurethane rigid foam that is created when the tanks are encapsulated offers particularly good insulating properties so that the stored hot water maintains its temperature for a long time (photo: Marani BPU 300 – 500 combined storage tank, photo: Bosch Thermotechnik GmbH, Buderus Germany).

![Ein Bild, das weiß, Tisch enthält.

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Photo 2:

Most manufacturers of water tanks offer their customers a large number of different model versions. These differ in terms of size, equipment and location of connections for water inlet and outlet pipes, threaded sleeves, temperature sensors and other elements (photo: combined storage tank Logalux KNW ... EW, rear view, Photo: Bosch Thermotechnik GmbH, Buderus Germany).

Ein Bild, das Computer enthält.

Automatisch generierte BeschreibungEin Bild, das Küche, Kühlschrank enthält.

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Picture 3 (top) and 4 (bottom):

Encapsulation molds for the insulation of hot-water tanks: the picture at the top shows the closed mold while the picture at the bottom shows the open mold (photo: BBG).

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