**Ein Bild, das Zeichnung enthält.

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**PRESS RELEASE**

* **BBG: Significantly less glass breakage and trimming in car glass PUR encapsulation**
* **BBG New PUR flush sealing concept for encapsulating molds is a great success story**

*Mindelheim, Germany, 2 February 2021.* Automotive glass that is encapsulated in molds on the basis of BBG’s new PUR flush sealing concept is much less prone to breakage than with conventional molds. The reject rate decreases noticeably while encapsulation with polyurethane (PUR) is more precise. As a result, necessary rework is reduced to up to a quarter of the time originally spent on reworking components. According to BBG, the manufacturer of molds, machinery and plants, this is reported by customers who already rely on the new BBG technology. It can be used for single-pane tempered glass, as well as laminated glass, and “fragile” semi-tempered glass.

**Large-format and switchable car glass: risk of breakage and costly rework**

Increasingly thinner and larger automotive glass panels, as well as the integration of additional features in switchable smart glass, for example for darkening the glass panels, present suppliers with ever more challenges. Bernhard Satzger, senior sales and project manager at BBG, has done comprehensive research into the subject: "One important reason why people are moving away from the classic sliding/tilting sunroof and are choosing panoramic windows and roofs instead is the fact that the latter allow more light into the interior of a car. Customers currently very much appreciate a bright ambience that creates a feeling of open space around them."

In addition, panoramic sunroofs are more lightweight, i.e. they allow car manufacturers to reduce the overall weight of the vehicle at the same time. In extreme cases, even the entire roof panel can be designed as a glass panel, thus resulting in considerable weight and cost savings. As Satzger adds, "This trend is very strong at the moment but it presents glass suppliers and glass processors with new challenges."

According to the automotive supplier Continental, around five square meters of glass are already fitted on average in a car today. A large panoramic sunroof adds another 2.5 square meters of glass. Before automotive glass is installed in vehicles, it is provided with frames made of polyurethane.

**Large-format glass panels are a challenge**

However, due to the manufacturing process, large-format glass panels often come with wavy edges and bending deviations of up to 5 mm. The panels are therefore difficult to handle and to encapsulate.

There are two problems: Bent glass panels that have a size of several square meters and come in complex geometries are usually made of multi-layer laminated glass. Glass panels have a total thickness of 4.8 to 6 mm and are prone to develop cracks during PUR encapsulation. Since the glass panels sometimes are very wavy, polyurethane often leaks onto the inside of the panel during the encapsulation process. "There is leakage of polyurethane, which causes imprecise edges, and then has to be laboriously removed by hand. This can take five minutes per panel."

Satzger has been involved in the project planning of molds for glass finishing with PUR, TPE and PVC at BBG for many years. He did not want to reconcile himself with the fact that more glass breakage occurs as automotive glass formats become larger and require costly reworking. He worked for over one year to improve the production quality of PUR encapsulation process. And his efforts have been crowned by success since the new technology helps overcome both problems.

**OK quality parts produced even with the first shot**

Both BBG’s customers and Satzger are enthusiastic about the first practical experience with the new solution: "We had no glass breakage! Normally, some glass panels break when a new glass encapsulation mold is run in. With our mold based on the new PUR flush sealing concept, on the other hand, we got it right from the very beginning. All further shots were equally successful."

The PUR-glass flush result was also excellent, explains the sales and project manager: "The new concept completely avoids any unwanted leakage of the polyurethane on the inside of the glass panel. Instead, a precise boundary is formed between the glass and the plastic when it is encapsulated with PUR. If the glass panel comes with wavy edges, there might some minimal small film residue but this can be easily removed with a pumice sponge."

**Manufacturing times and reject rates decrease considerably**

"Glass breakage has decreased dramatically and rework times have dropped from four to one minute per panel in a benchmark comparison," Satzger reports. The number of OK quality parts has increased dramatically, and manufacturing times have been reduced. According to Satzger, the customer, a glass supplier for the automotive industry, is very satisfied with the result: "His investment costs for redesigning the existing mold to include the new BBG PUR flush sealing concept have already paid off within in a short period of time.”

In his opinion, many manufacturers will be able to see considerable savings. This was also the case with a glass supplier for the automotive industry, who complained to Satzger about a reject rate of up to 50 percent for 10,000 panoramic glass panels. Satzger presented to him the prospect of a scrap rate of less than one percent when using a mold with a PUR flush sealing concept.

**More OK quality parts help save resources**

However, improved production will not only lower production costs but also result in the reduced consumption of resources. As the scrap rate decreases, fewer parts have to be produced, and CO2 emissions will be reduced accordingly.

**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 lines, BBG designs, develops and manufactures molds for processing polyurethane (PUR), PVC, TPE and other elastomers, as well as a wide range of composite 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. The company also focuses on solutions for lightweight construction, the processing of composites and the production of fiber composite components in a large number of industries. With its entry into the development and construction of packaging machines for pharmaceutical products and food supplements, BBG broke new ground in 2020.

BBG, the family-owned business, which is run by Hans Brandner and is located in Mindelheim/Allgäu, 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:**



Photo 1:

Wavy edges of a panoramic sunroof sized 2,000 x 1,400 mm (Photo by BBG).

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Photo 2:

Large car glass panels are prone to break when encapsulated with PUR in molds without the new BBG PUR flush sealing concept (Photo by BBG).

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Photo 3:

Since large-format glass panels may come with very wavy edges, excess polyurethane leaking during encapsulation must be removed laboriously by hand (Photo by BBG).





Photos 4 (top) and 5 (below):

Polyurethane encapsulation of a large panoramic sunroof made of laminated glass in a mold with new BBG PUR flush sealing concept (below) and without (top) (Photo by BBG).

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Photo 6:

Bernhard Satzger, Senior Sales and Project Manager at BBG, developed the PUR flush sealing concept (Photo by BBG).

**Please visit for a download of the press release (Word documents) and print-quality photos:** [**https://www.auchkomm.com/aktuellepressetexte#PI\_394**](https://www.auchkomm.com/aktuellepressetexte#PI_394)

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