

## LyondellBasell, REHAU, TU Chemnitz and Eschmann Textures join forces to advance sustainable mobility

Rotterdam November 5, 2020 – LyondellBasell, one of the largest plastics, chemicals and refining companies in the world, REHAU, a well-known 1st tier supplier for painted plastic exterior components in the automotive industry, and surface specialist Eschmann Textures today announced the successful creation of a physically foamed rear lower trim with an excellent surface appearance.

With growing concerns about climate change and environmental degradation, sustainability has become a strategic priority for automotive manufacturers. When the BMW Group was looking for a bumper design for a new car model, which had to meet the companies' sustainability goals, engineers from LyondellBasell, REHAU and Eschmann Textures took up the challenge.

Very quickly, the three partners opted for a foamed part to achieve the necessary weight reduction. Thanks to the combination of the expertise from all three companies – raw material, part design & molding and ceramic coating – the foamed part achieved the highest surface/quality ranking and passed a certificated test series with good results.

LyondellBasell's mission was very clear from the start. Create a grade which would allow the production of a lightweight automotive part with an excellent optical appearance. The innovative foaming material, Hifax TYC 2182F, is a polypropylene compound ideal for producing exterior parts with long flow paths and long flow path/wall thickness ratios. The material met the need for high scratch-resistance. Depending on the technology applied, weight savings can be achieved.

REHAU's challenge in the exterior project was to design and mold the visible polypropylene foamed automotive trim. This had never been done before and was a very delicate exercise. The parts had to be filled in a steady and safe way, with low internal stresses, low scrap rate and no post blowing. For the initial mold validation, foamed molded parts were produced on a prototype tool by using Eschmann Textures' surface technologies.

As part of the project, the three companies have also collaborated with scientists from the Chemnitz University of Technology who examined studies on the influence of the coating on physical thermoplastic foam injection molding (TFI). Over the investigation period of 100.000 cycles, tactile and optical analysis methods have shown that the ceramic coating has a positive effect on the flow behavior within the cavity. In addition, a very high wear resistance was determined. In conclusion, ceramic tool coatings represent an alternative for optically streak-free TFI components and without an increase in cycle time.

Eschmann Textures, therefore opted for the coating process. They successfully created a surface texture for a physically foamed component using TFI while meeting the highest demands on function and design. The ceramic coating in combination with the material, process and tooling know-how of the project partners, ensured a uniform and highly accurate structural reproduction and good corrosion protection.

The success of this project has not only been achieved thanks to the expertise of all companies involved, but, more importantly, due to their readiness and willingness to change practice.

The foamed lower trim is now being manufactured in serial production.

### About LyondellBasell

LyondellBasell (NYSE: LYB) is one of the largest plastics, chemicals and refining companies in the world. Driven by its employees around the globe, LyondellBasell produces materials and products that are key to advancing solutions to modern challenges like enhancing food safety through lightweight and flexible packaging, protecting the purity of water supplies through stronger and more versatile pipes, improving the safety, comfort and fuel efficiency of many of the cars and trucks on the road, and ensuring the safe and effective functionality in electronics and appliances. LyondellBasell sells products into more than 100 countries and is the world's largest producer of polymer compounds and the largest licensor of polyolefin technologies.

### About REHAU Group

The REHAU Group is a polymer specialist with annual sales of around EUR 3.3 billion. The independent, privately held company has approximately 20,000 employees at more than 170 locations worldwide. The company employs 12,000 throughout Europe and 8,000 in Germany. For more than 70 years, REHAU has been working on making polymer products lighter, more comfortable, safer and more efficient. The company manufactures solutions for construction, automotive and industry and supplies its innovative products throughout the world.

### About Eschmann Textures

Since its founding in 1989, Eschmann Textures is a partner of the plastic-molding industry. We develop and produce design textures according to customer wishes across a wide range of markets – from high-quality packaging to automotive applications, domestic appliances to leisure products. We have continually expanded our range of services to suit our customers. Today, we are represented with our know-how worldwide with more than 170 employees at six locations in Europe and three in India. Globalization means competition, but also international partnership. We offer a wide spectrum of technologies for your projects through selected companies worldwide. Furthermore, as a brand of voestalpine high performance metals GmbH, we offer a wide range of services in the field of steel and its working and processing.

Visit us at:

<https://www.voestalpine.com/highperformancemetals/de/>

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