Press information

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Efficiency potential in door module production thanks to the special material properties of a newly developed 2-Component Polyurethane foam gasket

New material properties for sealing car door modules

Düsseldorf – Nowadays, drivers no longer want to do without the technology and electronics installed in the car door in the areas of safety, infotainment, lighting and air conditioning technology. The carrier of these electronic and mechanical units is the so-called door module, made of galvanized stamped sheet metal or glass-fiber reinforced plastic.

The door module is installed in the car doors and serves as a barrier that protects the interior of the car against external weather influences. For sealing, a polyurethane sealing foam is applied to the contour of the door module fully automatically via a CNC-controlled mixing head of the Sonderhoff dosing system. However, the units installed in the door module of a vehicle door, such as electronic window regulators, door locks or loudspeaker mounts, must also be sealed against water and dust and to prevent driving-related vibrations.

Henkel has developed a new foam gasket system for these applications – the 2-component polyurethane seal foam Sonderhoff Fermapor K31-A-5055-1-G / K31-B-4. It meets the mechanical property requirements demanded by OEMs and suppliers and is hydrolysis and temperature stable in accordance with delivery specification DBL 5452.

One of the outstanding material properties is the combination of a relatively long pot life with fast curing of the foam gasket, which is crucial for the fully automated production process of door modules. On the one hand, the foam gasket must remain workable after being dispensed onto the door module until the foaming time begins; on the other hand, the foam gasket must be cured quickly enough so that it can be installed at short notice. This enables short application processes and rapid part processing until final acceptance of the door modules.

This also saves costs, as there is no need for intermediate storage and only short curing bands are required for curing the foam seal. Another advantage is the approx. 5 % lower specific density with the same material properties, which results in lower material consumption and is therefore more economical compared to systems available on the market.

The low installation forces of the foam gasket are an advantage when installing the door module in the body-in-white door and when installing the sealed components for additional units such as loudspeakers, window regulators and locking system in the door module. When installed, the foam seals of the door module and the components mounted on it are pressed evenly over their entire contour. In addition, the foam gasket compensates for any dimensional tolerances of the components. The sealed parts therefore achieve a consistently high level of tightness.

As a result, the new sealing foam is groundbreaking for manufacturers of door modules and achieves a corresponding efficiency potential with short cycle times and large quantities in door module production thanks to lower material consumption and less weight.

About Henkel

With its brands, innovations and technologies, Henkel holds leading market positions worldwide in the industrial and consumer businesses. The business unit Adhesive Technologies is the global leader in the market for adhesives, sealants and functional coatings. With Consumer Brands, the company holds leading positions especially in laundry & home care and hair in many markets and categories around the world. The company's three strongest brands are Loctite, Persil and Schwarzkopf. In fiscal 2024, Henkel reported sales of more than 21.6 billion euros and adjusted operating profit of around 3.1 billion euros. Henkel's preferred shares are listed in the German stock index DAX. Sustainability has a long tradition at Henkel, and the company has a clear sustainability strategy with specific targets. Henkel was founded in 1876 and today employs a diverse team of about 47,000 people worldwide – united by a strong corporate culture, shared values and a common purpose: "Pioneers at heart for the good of generations." More information at www.henkel.com

Photo material can be found on the Internet at www.henkel.de/presse

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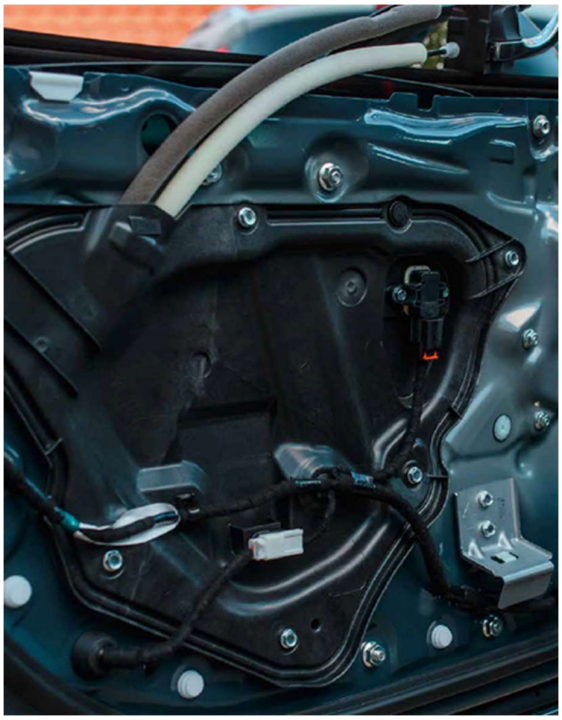
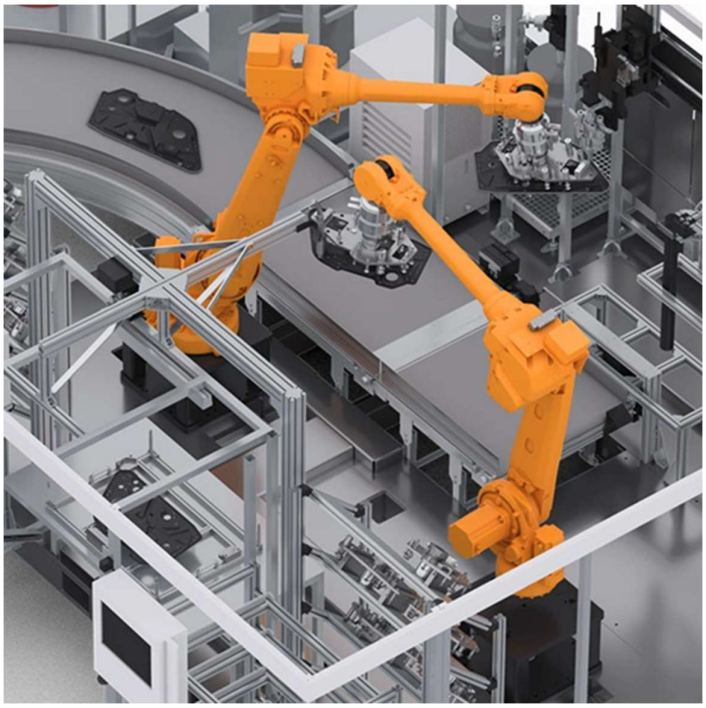


Door module with contour seal in the body-in-white door

The fully automatic dosing application according to FIPFG technology is carried out with the CNC-controlled MK 825 PRO precision mixing head and the DM502 dosing system with high dosing accuracy.



System configuration with Sonderhoff DM 502 mixing and dosing machine with two 6-axis robots for part handling, plasma station and a conveyor belt for feeding out