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Battery undercovers based on Ultra-Silent: optimal noise and heat protection for electric vehicles

With sales of electric cars picking up speed worldwide, demand for innovations that are particularly suited for this vehicle category is also growing. Components are required whose low weight enable a greater driving range and that regulate noise levels at the same time. In order to support vehicle manufacturers in the production of lightweight and environmentally-friendly e-models, Autoneum is extending its product portfolio with textile battery undercovers made of Ultra-Silent that optimally meet the specific requirements for acoustic and thermal management of electric vehicles.

Electromobility is on the rise around the world. While the number of newly registered electric vehicles is also growing substantially in Europe and North America, the largest production and sales market is China: More than 40 percent of all electric vehicles produced globally are manufactured in the Middle Kingdom, in part due to government subsidies. However, an expansion of charging infrastructure and improved driving range are decisive for the global breakthrough of this vehicle category. As the market and technology leader in acoustic and thermal management, Autoneum already today offers various multifunctional components such as carpet systems, inner dashes and underbody systems, which have a positive impact on the driving range thanks to their light weight and which are specially tailored to the acoustic and thermal management needs of electric vehicles.

With battery undercovers made of Ultra-Silent, the Company has adapted this textile underbody technology for use in electric vehicles for the first time. The components act as insulators helping to lower sound that enters the passenger cabin, for instance caused by tires, and also pass-by noise. Sound-reducing components are essential for electric models as well because external and internal sources such as fans, pumps and electronic drive components are more audible due to the lack of engine noise and accordingly influence driving comfort. At the same time, the textile battery undercovers also convince thanks to their low weight: They are up to 50 percent lighter than corresponding components made of plastic and thus ensure a greater driving range.

Undercovers made of Ultra-Silent are installed underneath the battery casing, providing the battery cells with the best possible protection against significant cooling or heating and ensuring a constant temperature with a correspondingly optimized battery capacity. As a result, the components help to improve battery performance. They are also resistant to water, stone chipping and vibrations and thus help to protect the battery casing. In order to calibrate the temperature resistance and material stiffness of undercovers, Autoneum uses a broad range of internally developed simulation tools. They are deployed in both the development phase of new electric models as well as in the further development of those already on sale.

Lightweight components made of Ultra-Silent are mostly made from recycled PET fibers that can be fully reclaimed, making them particularly environmentally-friendly. Components made of Ultra-Silent are produced in the Company's plants in Sevelen, Switzerland, Gundershausen, Germany, Jeffersonville (Indiana), USA, and Pinghu, China, and are already in use in models of European, US and Chinese automobile manufacturers. From July 2020 onwards, the first battery undercovers will be produced in series at the Gundershausen plant for the fully-electric model of a German premium manufacturer.

Picture:

A visualization of a battery undercover based on Ultra-Silent is available for download at www.autoneum.com/2019/05/09/battery-undercovers-ultra-silent.

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About Autoneum

Autoneum is globally leading in acoustic and thermal management for vehicles. The Company develops and produces multifunctional, lightweight components and systems for interior floor and engine bay as well as the underbody. Customers include almost all automobile manufacturers in Europe, North & South America, Asia and Africa. Autoneum operates 55 production facilities and employs around 13000 people in 25 countries. The Company with its headquarters in Winterthur, Switzerland, is listed on the SIX Swiss Exchange (ticker symbol AUTN).

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