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Impact resistance meets thermal insulation: lightweight composite impact protection plate for electric vehicle batteries

Autoneum's new impact protection plate, made from thermoplastic composite material, shields the battery of electric vehicles from impact, fire and corrosion. The lightweight component not only meets the highest requirements in terms of shock resistance and durability but also contributes to improved energy management and thus to a longer range thanks to its thermal insulation properties.

The ongoing transformation of the automotive industry towards an increasingly electrified mobility requires new shielding technologies to protect the battery system in electric vehicles. In this regard, Autoneum's new impact protection plate offers a high-performance, safe and cost-effective option thanks to its mechanical and thermal insulation properties, low weight and ability to withstand extreme temperatures.

Autoneum's composite impact protection plate shields the vehicle battery from damage caused by impact, fire and corrosion. It is significantly lighter than metal alternatives and at the same time thermally insulating, which contributes to a longer driving range. In addition, the part meets the highest requirements for impact resistance and springs back into shape without structural loss or deformation even after repeated exposure to stones and road debris. The new impact protection plate is based on long-fiber thermoplastic (LFT) technology, which allows the greatest possible freedom in terms of design and construction as well as waste-free production. Moreover, the additional reinforcement of the basic structure ensures maximum rigidity and impact protection at minimal weight.

The impact protection plate reflects Autoneum's technological expertise in underbody shields, thermal management and the application of the LFT process, adapted specifically for battery electric vehicles. The technology for the composite impact protection plate has been validated by simulations and vehicle testing at different European OEMs.

Photos:

Images can be downloaded at: www.autoneum.com/images/2025_05_20/Impact_protection_plate_1 and www.autoneum.com/images/2025_05_20/Impact_protection_plate_2

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About Autoneum

Autoneum is globally leading in acoustic and thermal management for light and commercial vehicles. The company develops and produces multifunctional, lightweight and sustainable components and systems for the interior floor and interior trim as well as the engine bay and the underbody. Customers include almost all automobile manufacturers in Europe, North & South America, Asia and Africa. Autoneum is represented in 25 countries, employs around 16 500 people and operates 77 production facilities worldwide. The company with its headquarters in Winterthur, Switzerland, is listed on the SIX Swiss Exchange (ticker symbol: AUTN).

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