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## **E-Fiber flame shields: innovative and mica-free flame protection for electric vehicles**

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**Ensuring thermal safety is a hot topic for electric vehicle manufacturers today. Autoneum's new E-Fiber flame shields offer flame protection and electrical insulation inside the battery housing. They can withstand extreme temperatures, pressure and abrasions, thus significantly increasing the safety of passengers in the event of the battery overheating and catching fire. As the shields are made from a composite material, they are also considerably lighter, mechanically stronger and more cost-efficient than the mineral mica alternatives on the market.**

The number of lithium-ion battery electric vehicles (BEV) in use worldwide is growing rapidly. As a result, ensuring the safety of the battery pack and thus minimizing the risk of fire accidents has become a key issue for car manufacturers across the globe. In order to protect vehicle occupants in the event of a so-called thermal runaway, in which the battery heats up quickly and uncontrollably and, in the worst case, ignites or explodes, fire protection materials and components such as flame shields are among the most effective methods.

Autoneum's E-Fiber flame shields excel not only with their ability to withstand extreme temperatures, but also with their low weight and mechanical strength. In contrast to alternative standard products, which often consist of heavy and brittle mineral materials such as mica, the innovative shields based on E-Fiber are lightweight, stiff and stable and offer optimum flame protection and fire blast resistance. Due to the moldability of the material, the shields also ensure excellent battery coverage and design flexibility. Thanks to the possibility of manufacturing components with complex 3D shapes, there is also the potential to integrate an additional function to guide hot gases away from the battery. The shields are based on a composite material made of reinforcing fibers and resin, which are formed into thin layers of one to two millimeters. The heat resistance of up to 1400°C and the mechanical strength of the material significantly increase the shields' resistance to high temperatures, but also hot particle abrasion and gas pressure. Moreover, the fibers provide the part's non-conductive and insulating properties, which are necessary for the battery system's electrical insulation and thermal safety.

The E-Fiber flame shields can be installed between the battery cells and the battery cover or the vehicle floor and contribute significantly to increasing the safety of vehicle occupants in the event of a battery thermal runaway. They thus offer a lightweight, safe and geometrically adaptable alternative to standard flame shields on the market. In addition, the composite shields are completely risk-free from a compliance perspective. This is in contrast to mica-based products, which can prove problematic in terms of responsible sourcing.

Autoneum's E-Fiber flame shields have already been validated in battery tests and are currently in pre-development with various customers in Europe.

**Photos:**

Images can be downloaded at: [www.autoneum.com/images/e-fiber-flame-shield/](http://www.autoneum.com/images/e-fiber-flame-shield/)

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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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