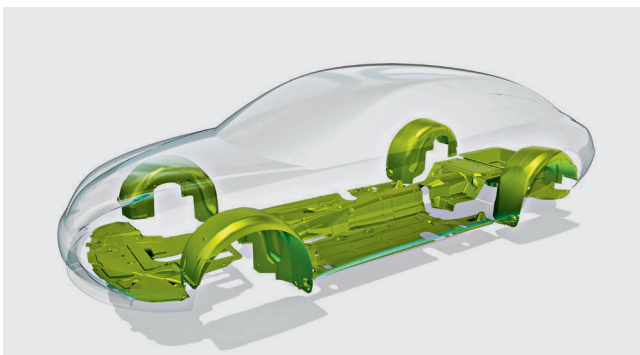


Lightweight and Multifunctional Solutions Underbody Systems and Heatshields



Autoneum is the global market and technology leader in acoustic and thermal management solutions for vehicles and is partner to vehicle manufacturers around the world. The Company provides multifunctional and lightweight technologies and components for optimal protection against noise and heat.

Autoneum's innovations make vehicles quieter, lighter and safer and help to reduce fuel consumption and emissions. Based on long-standing expertise and unique technological know-how, Autoneum develops and produces systems and components for the vehicle engine bay, underbody and interior floor as well as for the body-in-white.



Available worldwide, designed individually.

Autoneum's customers are the leading light vehicle manufacturers in the automotive markets of Europe, Africa, North America, South America and Asia. Global presence and proximity to the customer is a key success factor and crucial competitive advantage. As a result, the Company carries out both R&T and manufacturing around the world. Sophisticated measurement systems and simulation software enable customized solutions.

Autoneum offers among others the following products for underbody application:

- Under engine shields
- Under floor shields
- Wheelhouse outer liners
- Floor pans
- Battery boxes
- Heatshields

These products include a number of features and advantages:

- Aerodynamic improvement
- Heat protection
- Light weight
- Body protection
- Interior and exterior (pass-by) noise reduction

Customers of Autoneum's underbody components:

Audi, BMW, Daimler, Ford, Honda, Jaguar Land Rover, PSA, Renault-Nissan, Toyota, Volkswagen and Volvo

Autoneum. Mastering sound and heat.

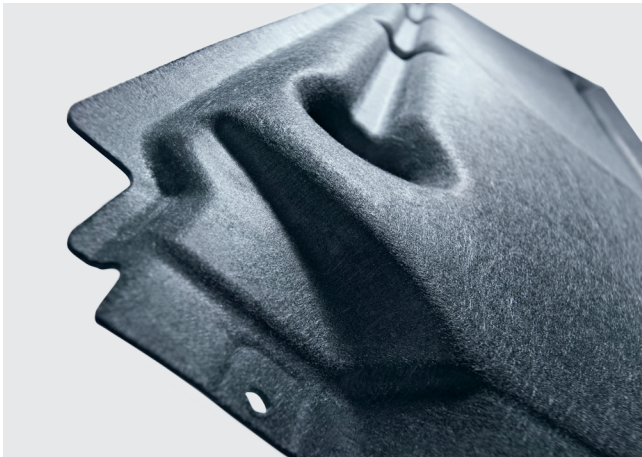
Ultra-Silent

The lightest textile underbody system

With underbody systems made of Ultra-Silent, Autoneum offers the most lightweight textile underfloor systems for vehicles: They are up to 50% lighter compared with equivalent plastic components. Underbody systems made of Ultra-Silent also convince with a high degree of impact resistance and optimum stone chip protection. The PET based, glass-free mono-material is resistant against water and heat and fully recyclable.

At the same time, Ultra-Silent absorbs sound and in doing so reduces the vehicle noise by up to two decibels. In addition, underfloor systems made of Ultra-Silent enhance the aerodynamics of vehicles by reducing their air resistance. This contributes to lower fuel consumption and thereby reduces CO₂ emissions.

The sophisticated engineering behind Ultra-Silent helps reduce mass, the number of fixation points, part numbers, overall complexity and costs. This makes Ultra-Silent a convincing value offer for OEMs.



Underfloor shield made of Ultra-Silent

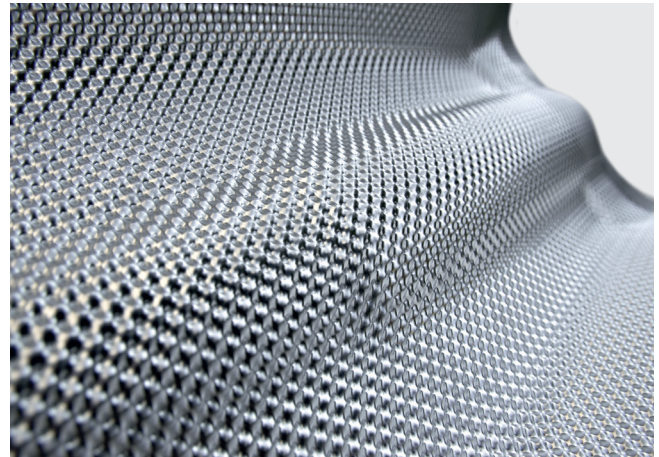
RIMIC

Heat protection and noise absorption

Heatshields are used in vehicles primarily to provide protection against the heat that arises in the engine bay and the exhaust system. In order to shelter this radiant warmth, these shields are heat-resistant up to 500°C.

Heatshields based on Autoneum's lightweight and fully recyclable RIMIC technology not only protect against heat. At the same time, they also lower noise emissions of vehicles. This noise reduction is achieved by means of a special perforation developed by Autoneum. It converts the airborne sound into thermal energy and absorbs it. Using in-house production processes, these perforations are applied specifically only at predefined areas to ensure optimal heat protection and durability.

The acoustic performance of heatshields is controlled by the number of openings per shield. RIMIC can be used as a single layer, with glass fiber mats or in combination with the Theta-Cell acoustic absorption technology in order to facilitate the absorption of high-frequency sounds of between 2-6 kHz.



RIMIC heatshield

For further information, please contact: Autoneum | Global Product Management Underbody | underbody@autoneum.com www.autoneum.com

