



Best practice example

for lightweighting in Germany

Sandwich moulded parts



Sandwich moulded part e.g. as a car floor pan

Sandwich moulded parts

Fields of application



Automotives

In this example, lightweighting allowed for the following reductions compared to a conventional model made of aluminium:



Weight approx. -50%



Energy approx. -15%

Application

The sandwich moulded part is a sandwich construction made from renewable raw materials that are pressed into moulded parts and used as load-bearing and flat elements in passenger cars.

Challenge

The aim is to integrate renewable raw materials into load-bearing lightweight construction elements and to optimise their weight for lower energy consumption.

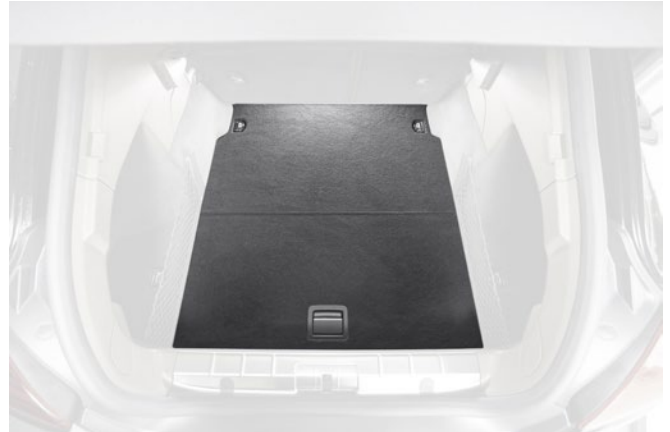
Solution

This can be achieved by using renewable fibres in various matrix systems that are specifically deformed for various applications.

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Another example of a sandwich moulded part



Installed car floor pan

Other potential applications



Commercial vehicle construction



Shipbuilding (boatbuilding/yachts)

The base boards made from renewable raw materials offer many advantages over other materials. The three-shell sandwich structure combines the two current megatrends of lightweight construction and renewable raw materials. The multi-stage manufacturing procedure used makes it possible to adjust

the design of the base boards individually for the required environmental conditions and load situations. In this way, new innovative mobility concepts are created and the carbon footprint can be significantly improved.

Compliance with all requirements relevant for the sector is being ensured. Research activities are being conducted so as to further improve health and safety, environmental protection and recycling.



The LIGHTWEIGHTING ATLAS

The LIGHTWEIGHTING ATLAS is an interactive web portal that pools information on those active in lightweighting and their skills across different industries and materials. The atlas is free to use and entries into the atlas are also free. You can find the LIGHTWEIGHTING ATLAS at www.leichtbauatlas.de

The Lightweighting Initiative

Modern lightweighting is of pivotal importance for German industry and its competitiveness. The Federal Ministry for Economic Affairs and Climate Action has established the Lightweighting Initiative to support lightweighting in Germany. The Lightweighting Initiative Coordination Office in Berlin, which is financed as part of the initiative, pools all activities relevant to lightweighting and supports German companies, especially SMEs, as they implement lightweighting.

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