



Best practice example

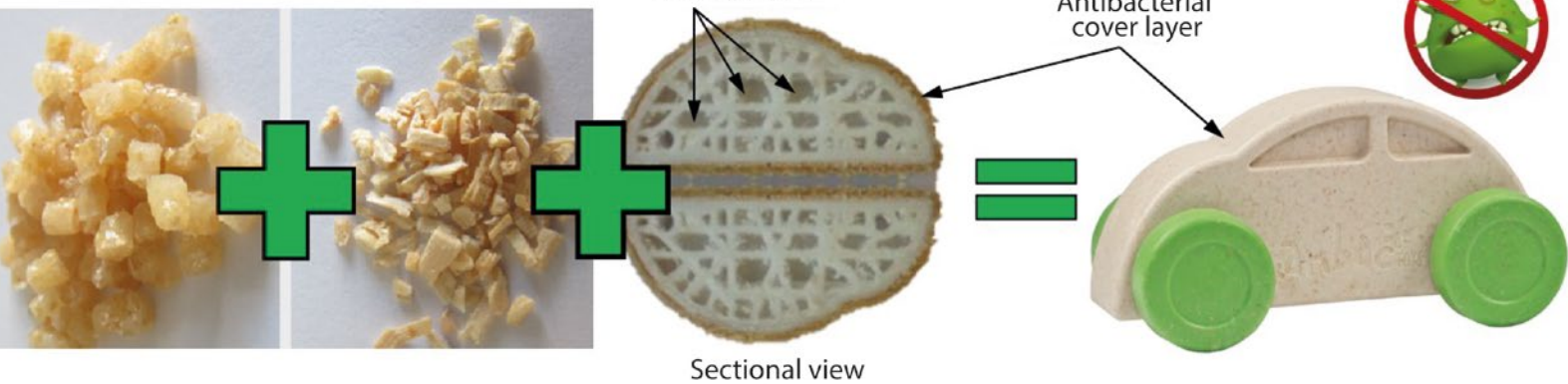
for lightweighting in Germany

BioanBak

Bioplastic

Antibacterial
wood

Lightweight



Functional integration on bio-based lightweight components

100 % bio-based and biodegradable composites with antibacterial effect

Fields of application



Construction sector



Medical technology



Sports and leisure
equipment

In this example, lightweighting allowed for the following reductions compared to a conventional model made of polypropylene/wood composites:



Weight approx. -30%



Energy approx. -25%



Cost approx. -15%



Cycle time approx. -15%

Application

This project focuses on everyday objects in public spaces that are touched or used by a large number of people and are therefore carriers of pathogens. Examples of these include sanitary equipment, vehicle handles, escalator handrails, and toys in surgeries and hospitals.

Challenge

The challenge was to design and modify 100% bio-based and biodegradable, synthetic lightweight materials in a way that produces the highest possible antibacterial effect. This meant managing without substances containing heavy metals.

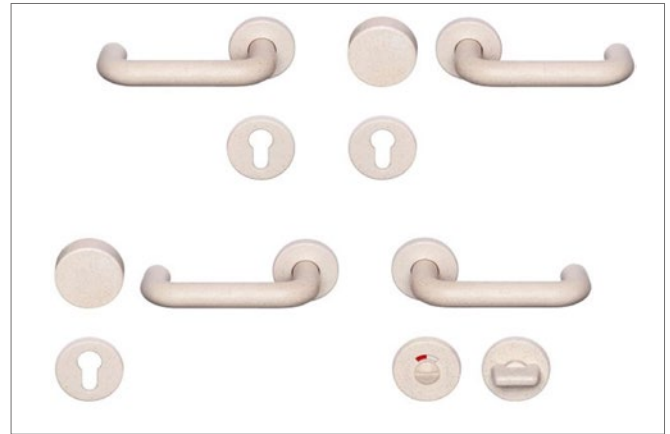
Solution

It made sense to utilise natural active ingredients, such as pine heartwood. The lightweight construction was realised using foaming, hollow chamber segments and twin-component injection moulding.

Best-Practice-Beispiel | BioanBak



Antibacterial toys made of lightweight materials



Functional integration in everyday objects

Other potential applications



Automotives



Machinery
and plant
construction



Aircraft
construction



Furniture
making



Construction of
rolling stock

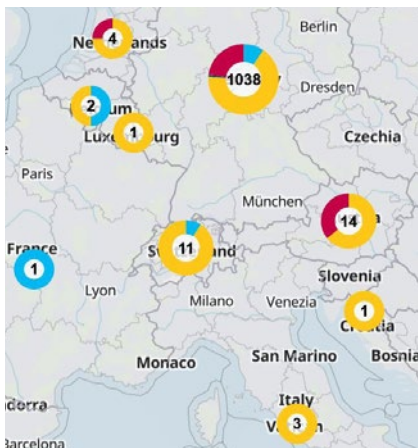


Shipbuilding

The Plastics Technology Group was able to prove that it is possible to produce 100% bio-based lightweight mouldings with an anti-bacterial effect.

The findings of this research can be transferred to a wide variety of everyday objects and thus help foster sustainability.

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



Der 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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