



“Project aim: Development of a heterogeneous laminate into a monomaterial laminate made of polyester”

“MoMenT (Monomaterial Membrane Textiles) - Development of monomaterial concepts for recyclable membrane textiles using the example of shoes and workwear”

The textile sector has a very high consumption of primary raw materials and as a result large production quantities. The amount of recycled raw materials is still very low. In particular, the recycling of more complex functional textiles (shoes, occupational safety) is still in the early stages of development. In these product areas, the major challenge of recycling is the separation of a considerable mixture of materials.

Very thin and mechanically resistant polyamide textiles are used in footwear and work safety laminates, which are bonded to a membrane (e.g. made of polyester) using a polyurethane adhesive. This makes the pure separation of the heterogeneous laminate a hurdle for high-quality recyclability.

The aim of the project is to develop a recyclable monomaterial laminate that corresponds to the properties of the heterogeneous laminate. For this purpose, PES knitted fabrics are developed as a PA substitute and the PUR adhesive is also replaced with PES, so that a pure PES composite material is ultimately created. In this way, new ways of recycling are opened up and the transfer to the recycling of other polyester-based composite materials with dominant PUR-based bonding agents is created.

Project partner

The research project is being carried out in cooperation with the company Sympatex Technologies GmbH and is supported by the associated partners Mattes & Ammann GmbH & Co. KG and KÖBA-Sewifa GmbH.

Duration

18 Month (01.01.2023 – 30.06.2024)

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