Sächsisches Textilforschungsinstitut e.V.

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HIOS - Highly integrated component-specific organic sheets based on rCF nonwovens and functionalised TFP tape

Problem / Motivation

- Increasing quantities of carbon fibre waste in the coming years, particularly from the aviation and wind power sectors
- Technology development for the quasi-continuous production of component-specific organic sheets from recycled materials for secondary structures in aviation
- Closing material cycles insufficient, reducing downcycling and increasing the degree of prefabrication for subsequent processes

Solution

- Scaling of static pressing tests to a quasi-continuous production technology and development of tool concepts for thickness-variable semi-finished products
- Introduction of load-path-compatible reinforcement structures for local functionalisation
- Development of variable-thickness organic sheets with local and load-path-compatible functionalisation in one process step under variation
    - the grammage of the nonwoven
    - the polymer systems (PP, PA6, PPS) and
    - the textile reinforcement structures (woven fabrics and embroidered structures)
- Testing of customised joining technologies and thermoforming of organic sheets into a demonstrator

Project Launch

07/2022

Project Partner

BÜFA GmbH & Co. KG

CTC GmbH

Faserinstitut Bremen e.V.

RUCKS Maschinenbau GmbH

Tenowo GmbH

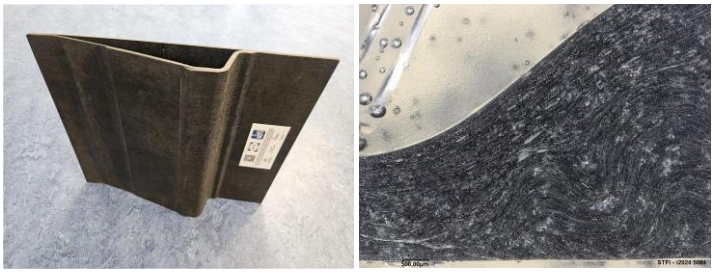

Figure 1: Demonstrator (left); micrograph from thickness jump from 2 to 6mm (right)

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