DRAPETEST
Automatic Drapability Tester
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The behavior of standard- and non-crimp fabrics in forming and draping is of importance in any production process of non-flat, fabric-reinforced composite parts. As automation of such production processes progresses, drapability and the detection of defects during draping like gaps, loops, or wrinkles become even more important.

DRAPETEST, a new automatic drapability tester, allows to automatically characterize drapability and the formation of defects during draping and forming. The tester combines the measurement of the force, which is required for forming, with an optical analysis of small-scale defects such as gaps and loops by means of image analysis. An optional triangulation sensor can determine large-scale defects such as wrinkles.

As a standardized simulation of the draping process a flat circular sample of the fabric to be tested is deformed at its center by means of a motor-driven piston. A camera with an appropriate illumination inspects the sample at several elevation steps while the sample is rotated in order to inspect a maximum percentage of its surface. In the same manner the sample is scanned by the optional triangulation sensor.

A Windows® PC is connected to the instrument via USB. It is used for parameterization and control of the test, the image analysis, as well as for the evaluation, storage, and display of the measured data.

DRAPETEST is suited for fabrics made of glass, Carbon, Aramid, and similar materials. It is based on an earlier development by SAERTEX, a leading producer of non-crimp fabrics, and proved its function and the relevance of results in practice. Image analysis technology developed at the Faserinstitut Bremen (FIBRE) allows the automatic detection of faults.
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- Faserinstitut Bremen e.V. (FIBRE), Bremen
- HAINDL Kunststoffverarbeitung GmbH, Bremen
- Institut für Textiltechnik (ITA) of RWTH Aachen University, Aachen
- SAERTEX GmbH & Co. KG, Saerbeck
- J. Schilgen GmbH & Co. KG, Emsdetten
- Textechno H. Stein GmbH & Co. KG

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