



DRAPETEST

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Textechno

textile testing technology

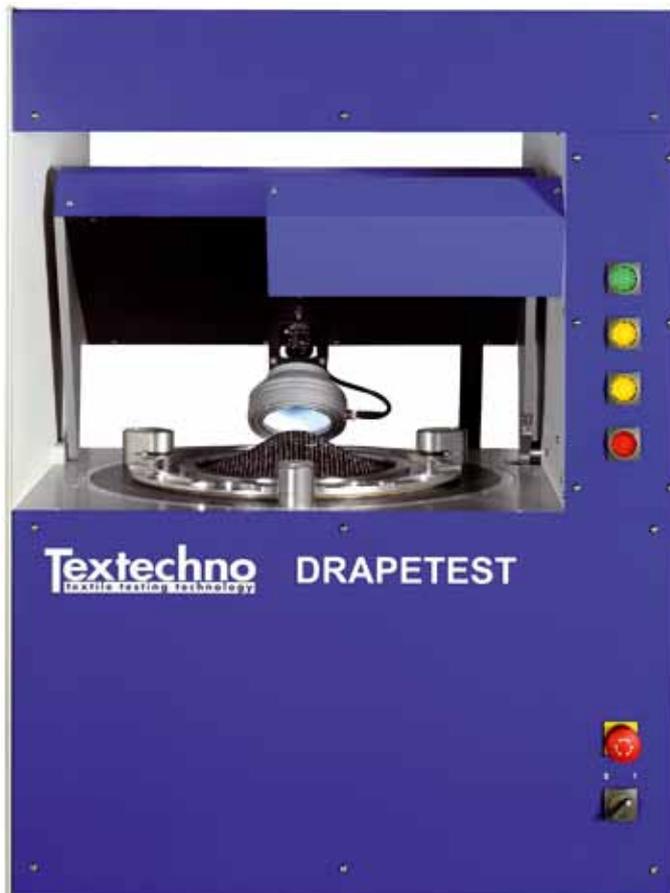
Automatic Drapability Tester

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.

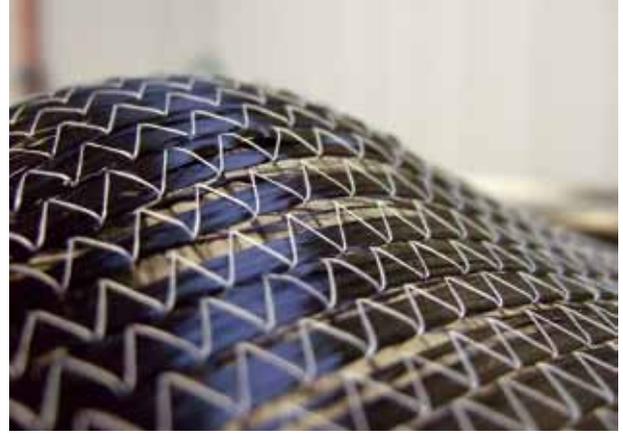
As a standardized simulation of the draping process a flat circular sample of the fabric to be tested is deformed at its center by means of a motor-driven piston. A camera with an appropriate illumination inspects the sample at several elevation steps while the sample is rotated in order to inspect a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





Carbon fabric with loops



Carbon fabric with gaps



Glass fabric with loops



Glass fabric with gaps

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.

The instrument is developed within a research program funded by the German ministry of economics and technology, which includes the following partners:

- 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
- Text techno H. Stein GmbH & Co. KG

Supported by:



on the basis of a decision
by the German Bundestag

Technical data

- Sample diameter: 310 mm;
- Maximum elevation (path of piston): 100 mm;
- Mains supply: 230 V, 50 (60) Hz, current requirement less than 2 A;
- Lacquer finish: RAL 9006/5002;
- Dimensions: height 820 mm, width 620 mm, depth 680 mm;
- Weight: approx. 70 kg;

The above technical contents can be subject to changes by Text techno.

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