

TESTING SOLUTIONS FOR GLASS FIBERS

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The market for glass fiber composites is growing with more than 5% per year. Especially the high-volume automotive market has strong quality requirements and standards. In addition, the industry is looking for better methods for characterization of these non-isotropic materials. Textechno, market and technology leader in testing instruments for synthetic fibers and yarns, has developed a number of instruments to measure the properties of single glass fibers, yarns, rovings and fabrics, as well as the fiber-to-matrix interface. These include:

- FAVIMAT+ AIROBOT2, an automated testing system measuring the cross-sectional area as well as tensile- and friction properties on single glass fibers. The integrated vibroscopic linear-density test section and a high-resolution compensating load cell guarantee highest accuracy, e.g. of modulus values. The AIROBOT2 automatic storage feeder allows to automatically test up to 500 fibers.
- FIMATEST, a brand-new system to determine the fiber-to-matrix adhesion in terms of the local interfacial shear strength and the interfacial toughness. FIMATEST is suited for thermoplastic and thermoset matrices as well as cement and has received the JEC World Innovation Award 2016. The system was developed in co-operation with the well-known expert in the field, Prof. Edith Mäder from the Leibniz IPF in Dresden, as well as with the Faserinstitut Bremen (FIBRE).
- COTTONSCOPE HD, a fast instrument measuring the diameter distribution of glass fibers in a very efficient way. This instrument has been developed by the Australian company Cottonscope in co-operation with CSIRO, Australia, and is exclusively marketed in Europe by Textechno.
- STATIMAT 4U, a fully automatic tensile tester for high-tenacity yarns, suited for a broad range of linear densities of yarns and rovings. STATIMAT 4U is widely used in the field of high-tenacity yarns made from PET, PA, Aramid, or UHMWPE and is already in industrial use for glass yarns and rovings, too.
- DRAPETEST, an automatic drapeability tester for woven and non-crimp fabrics. A circular sample is subject to deformation by a standardised deformation body. Two different camera system as well as a triangulation sensor detect all upcoming defects like gaps, undulation, wrinkles, etc. This instrument is now standardized according to DIN SPEC 8100.

We will present Textechno's innovative instruments that can build the basis of an efficient quality control and precision R&D in the glass fiber industry.