

## Accessories for HAAKE MARS

### Support fixture for the analysis of textile samples

The Thermo Scientific HAAKE MARS rheometer is now available with a support fixture for the comparative analysis of elasticity and sensoric (haptic) properties of textile samples.

The fixture consists of a lower adapter plate on which an exchangeable measuring plate of 60 mm diameter can be mounted. The stainless steel measuring plate is available with different surfaces: plain, sand-blasted or profiled. Individual diameter and/or materials can be done on request. The textile sample is positioned onto the measuring plate using the clamp ring, which is automatically centered by three pins and then fixed by its screws to avoid slippage. Due to the length of the pins, even thick textiles can be analysed.

The following tests are recommended for comparative measurements on different textile samples:

The normal force feature of the HAAKE MARS can be used to determine the elasticity. An upper plate of the same diameter as the measuring plate will be positioned at contact to the sample's surface using the RheoWin software. A constant normal force can then be programmed to observe the sample compression as a function of time. The HAAKE MARS can measure normal forces in the range of 0.01 and 50 N.

To simulate haptic behaviour, a stress sweep can be defined. If shear stress is increased continuously with time, the transition between static and dynamic friction can be seen. To evaluate the measurements, deformation can be plotted as a function of shear stress. The critical stress between static and dynamic friction can be determined by the intercept of two tangents fitted to the deformation curve before and after the transition.

#### Key-words

- HAAKE MARS
- Textile support fixture
- Simulation of haptics
- Normal force measurement
- Elasticity
- Static friction, dynamic friction

#### Ordering number:

603-0233 Support fixture for the analysis of textile samples of different thickness, for use with the HAAKE MARS rheometer. Consists of lower adapter plate for exchangeable plate geometries and clamp ring to fix the textile sample with 3 screws. Three exchangeable stainless steel plates of 60 mm diameter with different surface treatment (plain, sand-blasted, profiled) are delivered.



Fig. 1: Components of the textile support fixture: exchangeable measuring plate with fixing screw, lower adapter plate with centering pins, and clamp ring with screws to fix the samples (left), textile support fixture assembled without (middle) and with sample (right).

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