

## Messtechnik GmbH

- Highly reproducible pressure measurement
- Reduced container storage and trash volume
- Up to 16 liters unspoiled foam samples
- Can be used with existing FOAMAT devices

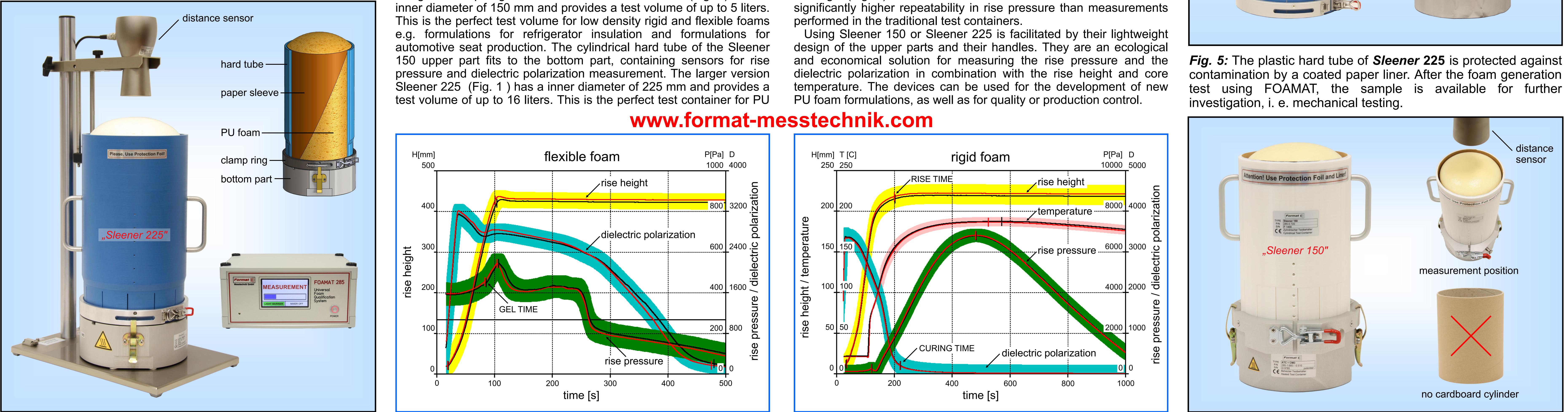


Fig. 1: The Sleener 225 comprises a plastic hard tube of 225 mm inner diameter and a heated bottom part, containing sensors for foam analysis. The Sleener 225 is connected to the Foam Qualification System FOAMAT<sup>®</sup> 285.

## New sleeved test containers for measuring the generation process of polyurethane foam

Established test containers for measuring the rise pressure and the slabstock foams or formulations for automotive seat production that rise profile of polyurethane foam formulations are usually made of a are injected directly from a mixing head into the Sleener 225. In order disposable cardboard cylinder and a bottom plate with sensors from to protect the cylindrical tube of the Sleener from the fresh foam, a piece of paper, plastic or metal foil is placed inside the tube before the bottom. Alternatively a reusable and heated metal cylinder is each test. The Sleener upper part is clamped onto the Sleener bottom provided coated with a release agent. The disadvantage of a part. As a result, the foil is fixed, and the test container is sealed to disposable cylinder is that for each test a new cylinder is required. From an ecological as well as an economic point of view, this is the bottom. After the test the Sleener upper part can easily be disadvantageous: The water content of the cardboard cylinders may removed from the lower part (Fig. 5). cause variations in the chemical reaction and thus spoil the For rise height measurement the whole assembly is placed under the ultrasonic sensor LR 4 of the Foam Qualification System measurement result. Reusable metal cylinders need time consuming FOAMAT. The rise pressure as well as the dielectric polarization can application of release agents. Subsequent cleaning is often be measured simultaniously. For measuring the core temperature, necessary.

To overcome this, Format Messtechnik GmbH has designed new several holes for inserting a thermocouple are available. Additionally, sleeved test containers named Sleener 150 and Sleener 225. They the test container can be heated from the bottom. Comparison are both made of a cylindrical plastic hard tube and a special measurements have been performed with flexible (Fig. 2) as well as designed clamp ring. The new container Sleener 150 (Fig. 4) has an with rigid (Fig. 3) foam formulations. The measurement curves show

Fig. 2: Two superimposed measurements (black and red) of a flexible polyurethane foam generated in the Sleener 225. The colored bands are master curves for quality control, showing the acceptable margins.

Fig. 3: Reproducibility measurements of a rigid polyurethane foam tested in the *Sleener* 150 which has a nominal diameter of 150 mm. The RISE TIME and the CURING TIME evaluated by the software FOAM are displayed.

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Fig. 4: The Sleener 150 has an inner diameter of 150 mm and a test volume of up to 5 liters. It replaces the Foam Pressure Measurement device FPM 150. No disposable cardboard cylinders are needed for each test.