Art.-No.: 61-471-010

COESFELD Tear Analyser
System Bayer

Measuring appliance for dynamic determination of the fracture mechanical behaviour of elastomer samples and determination of crack growth.

- under variable load profiles and selectable elongations
- with compensation of the remaining elongation by servo-motorical restressing
- measurement of the forces vs. time, the elongation vs. time and the crack sizes during the test.

The system consists of:

- basic unit with 10 measuring stations in a temperature adjustable testing chamber and a drive system for the load profiles
- hydraulic unit with cooling system (heat exchanger) for the hydraulic oil
- control cabinet with electric and electronic, SPS, hydraulic controller and industrial PC
- control panel for display and operation with TFT monitor, industrial keyboard and trackball.

Drive:	servo-hydraulic
Strain profiles:	sinus, rectangle, pulse, saw tooth, external signal input
Strain movement:	0,1 – 50 mm
Frequency:	1 – 60 Hz
Temperature:	-50°C to +150°C
External dimensions:	approx. 2.500 x 2.800 x 800 mm (W x H x D)
Power:	400 V Mp, 50/60 Hz, approx. 32 kVA

The tester is equipped with a complete measuring and controlling setup per sample position:

- servo-motor for the compensation of the remaining stain during the test (traverse path 70 mm)
- load cell for force measuring vs. the load profile (DMS, measuring range 0,2 – 200 N, resolution better than 0,1 %)

The strain, the energy density, remaining elongation, total energy and energy loss are acquired for each measuring station.

All components are mounted and integrated in the test appliance or in the switch gear cabinet.

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Optical crack growth measuring system

The system is equipped for recording crack growth with an optical measuring system:

- CCD camera system (780 x 582 up to 2.048 x 2.048 pixels, macro-zoom with individual focus at a parameterized stain.
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- XZ linear-robot to position the camera in front of the samples, the illumination panel in the test chamber backlights the samples.

The camera moves automatically during the test. The measurement is made at a adjustable trigger time while the load profile. Subsequently an image processing calculates the crack contour length and crack depth. The measurands are recorded. Furthermore a video is made for each sample. Every picture is defined with the count of the cycle in which the picture was taken.

Tear-Analyzer

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MATERIALTEST

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