

Stress Relaxation Test system



A Stress relaxation test system conducts tests on rubber materials according to ISO 3384-1 and 2 norm.

An Endurance Testing system fit for continuous measuring of relaxation (also known as creep) of visco-elastic materials, under a preloaded compression- or tensile force.

ENDUTEQ

ENDUTEQ develops automatic Test- and Measuring systems to measure movement (position, speed and acceleration), force and temperature.

In close cooperation we develop tailor-made solutions for every testing challenge you may have.



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Why test stress relaxation of rubber?

Rubber is a visco-elastic material, in tension or compression, a part of this material (the viscous part) will start to creep this is called stress-relaxation.

Stress relaxation (also known as creep) is a reduction in the counterforce for maintaining the applied strain, the force is not constant but decreases in time when the material ages. This is shown as a percentage of the initial force.

By continuously measuring the force applied on the material, the stress relaxation can be found.

The process that is responsible for stress relaxation can be chemical or physical in nature, under normal conditions both types of processes will occur simultaneously.

However at low or normal temperatures, or over a short time, stress relaxation is dominated by physical processes. Over long time periods of high temperatures chemical processes are dominant.

Stress Relaxation Test system

A stress relaxation test system consists of:

- Quadruple heating station (fit for 4 testtrigs)
- Stress relaxation testtrigs
- Control system incl PC and display; prepared up till 20-fold relaxation testing.
- Software; prepared up till 40-fold relaxation testing.

Range in	Compression	1.000 N or 2.000 N.
	Tension	100 N
Accuracy		± 0,1 % of full range.
Resolution	Compression	0,1 N or 0,2 N
	Tension	0,01 N
Temperature		max. 250°C

Testtrigs are available in different versions:

Compression or tensile testtrigs, testtrigs for conducting tests in fluids, testtrigs for tests at elevated temperature.

Quadruple heating station, temperature can be individually set at every station. Every station can start and stop a test individually; but can also start and stop simultaneously.

Software for Stress relaxation testing

Software evaluates the results of stress relaxation testing according to ISO 3384 1 and 2. Software is user friendly.

Software Functions

- Evaluation points showing relaxation at different times.
- End condition can be set as F/F0 or time.
- Automatic increase of logging time interval.
- Switching between graphics from absolute force in N or F/F0.
- Switching between absolute time or relative time.
- Easy to "zero" force.
- All relevant information shown on main screen.
- Graphics shown as linear or as logarithmic time.

