HYPERELASTIC MODULE – REQUIRED TEST

Stress-Strain Behavior

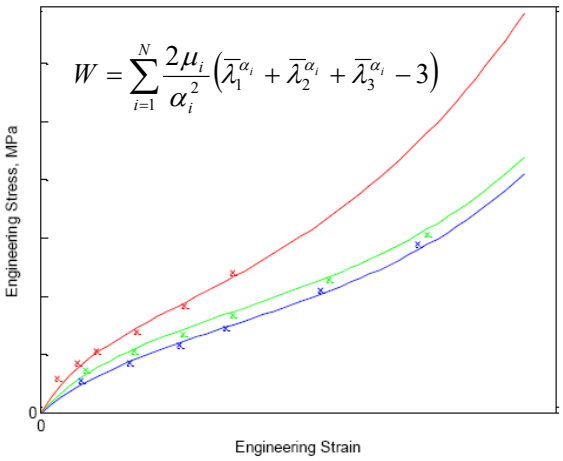
The Hyperelastic Module produces the basic information about nonlinear stress-strain behavior that is needed to run a finite element model and to represent initial transient softening (Mullins effect) in the model.

- simple tension, slow cyclic loading, raw data
- planar tension, slow cyclic loading, raw data
- biaxial tension, slow cyclic loading, raw data
- 5 strain levels
- number of slabs needed for test: 4

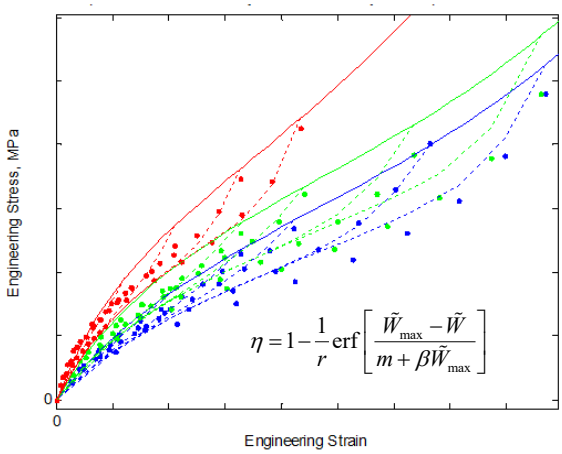
Use with
- Ogden hyperelastic law
- Mullins/Ogden Roxburgh
- and other hyperelastic laws on request

Analysis and Reporting / Deliverables

- identification of a suitable hyperelastic function and parameters for FEA
- identification of parameters for specifying Mullins effect in ABAQUS, ANSYS or MARC
- unit cube validation and stability check



Typical hyperelastic law fit to stress-strain curves measured in simple (blue), planar (green) and equibiaxial (red) tension.



Typical Mullins law fit to cyclic stabilized stress-strain curves.

FPM-H **Hyperelastic Module** completed at lab ambient temperature (23°C) **$2,100**

Additional Options

FPM-HV **Volumetric Compression Add-on to Hyperelastic Module** **$475**
Useful for specifying dilatational behavior of elastomers in highly confined deformation states. Requires 1 additional slab.
Recommended when p / K > 5%

FPM-H-TEMP **Temperature Upcharge for non 23°C Hyperelastic Module** **$925**
Indicate temperature with range of -40°C to 150°C