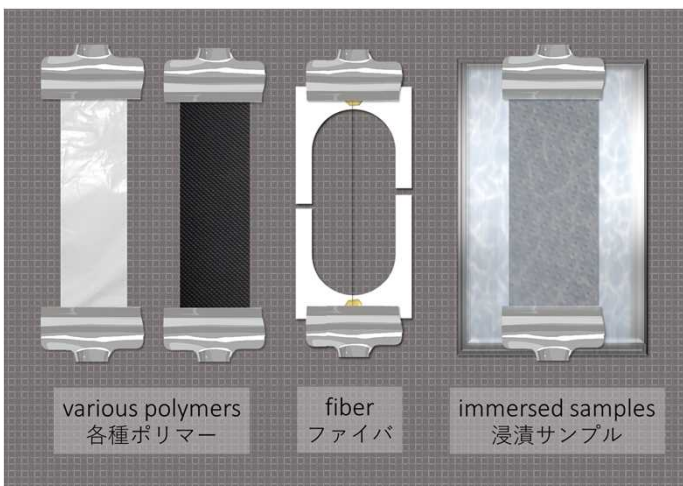


Stency, is a lightweight and compact tensile tester capable of measuring the stress-strain behavior of various materials.



Small Samples

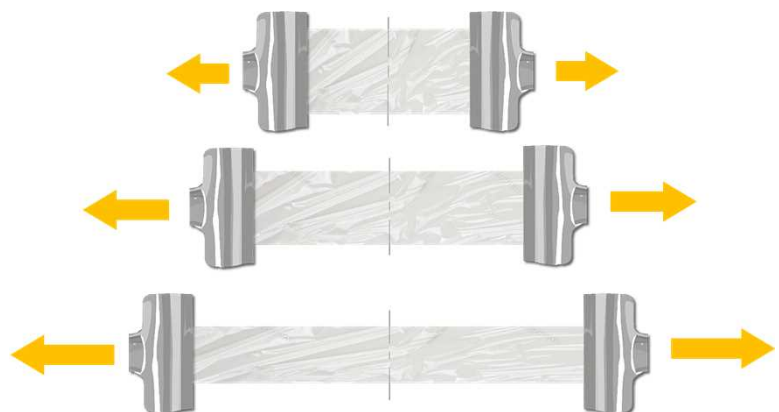
Capable of testing small sample sizes. These include delicate materials like fibers, thin films, skin, etc.

Customizable

Customizable for different types of test like fiber tests, immersion tests, and high temperature test.

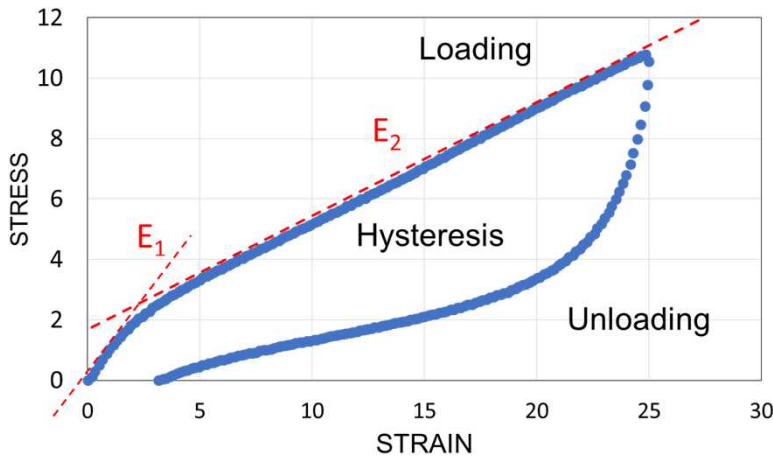
Bidirectional Pull

Unique from other tensile testers due to its bidirectional pull leaving **the center of the sample at a fixed position**. This ensure uniform tensile stress experienced by the material.



uniform stretching from both side
sample center remains in fixed position
両側から均一にストレッチ
サンプルの中心は固定位置のままです

The Stress-Strain Curve



Loading

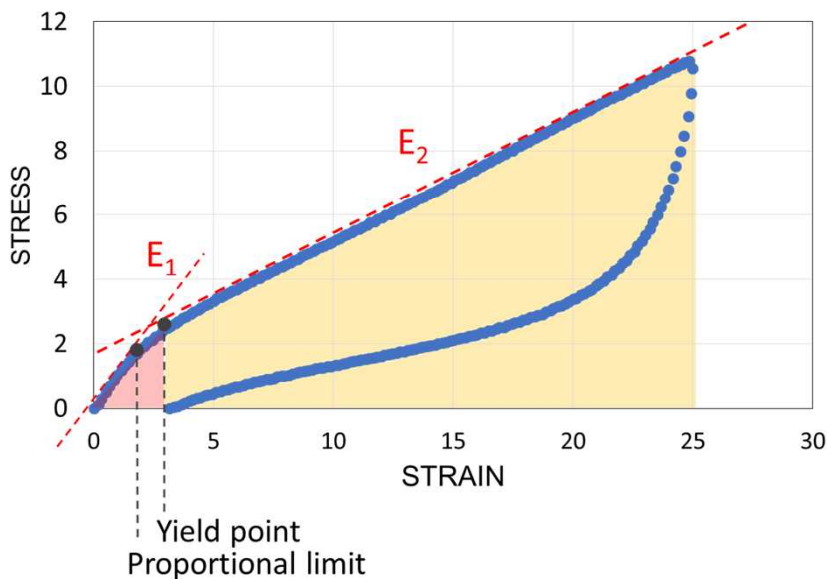
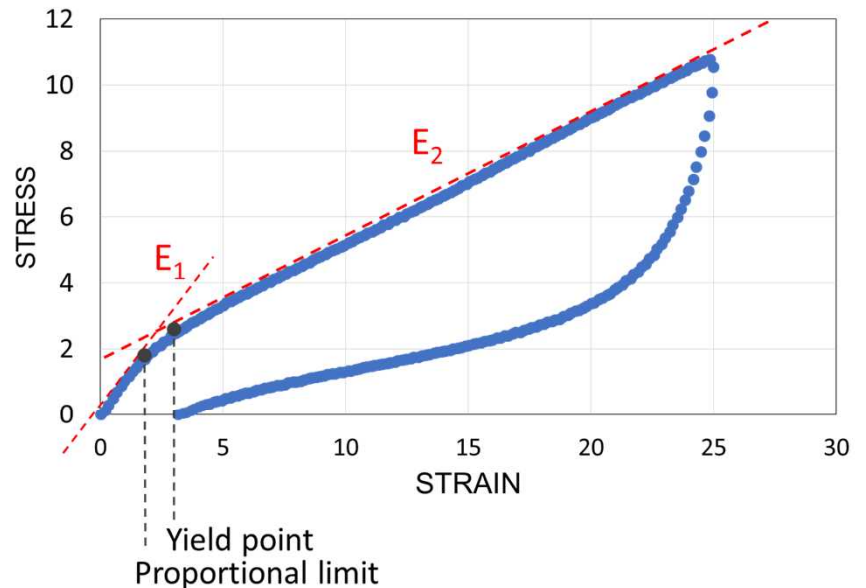
Material behavior when applied with tensile stress (i.e. stretched).

Unloading

Material behavior when stress is removed.

Proportional Limit is the highest stress at which stress is directly proportional to strain. When material is unloaded at this position, the material goes back to its original length.

Yield Point is the point at which material transitions from elastic to plastic deformation. Material experiences permanent deformation.



Elastic Region

Region at which material still reverts to its original state when stress is removed.

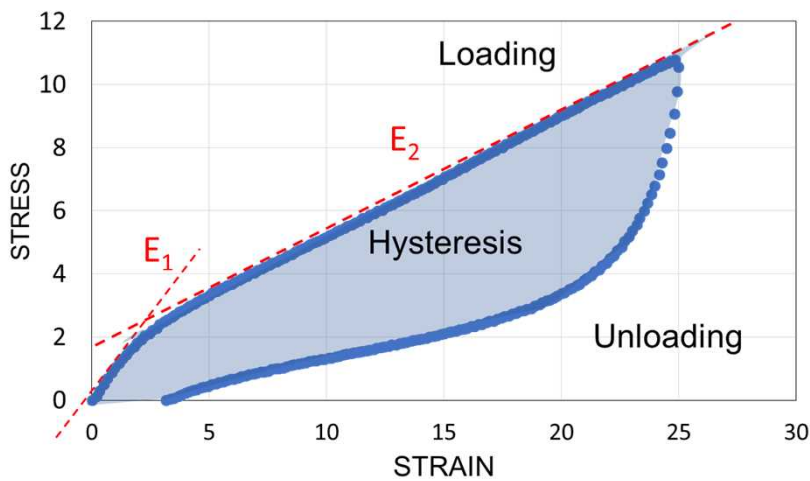
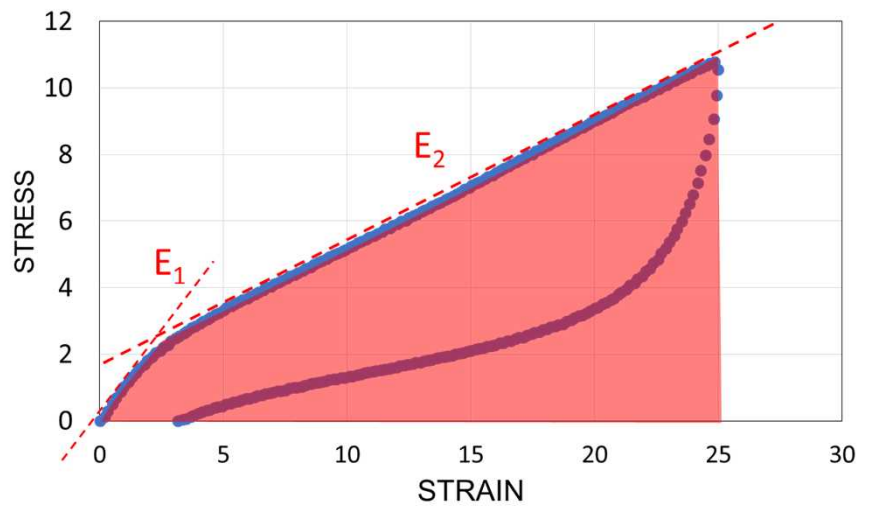
Plastic Region

Region at which material experiences permanent deformation.

Areas under the Stress-Strain Curve

Toughness, area under the loading curve.

Energy absorbed as a result of applying a force to deform an elastic object



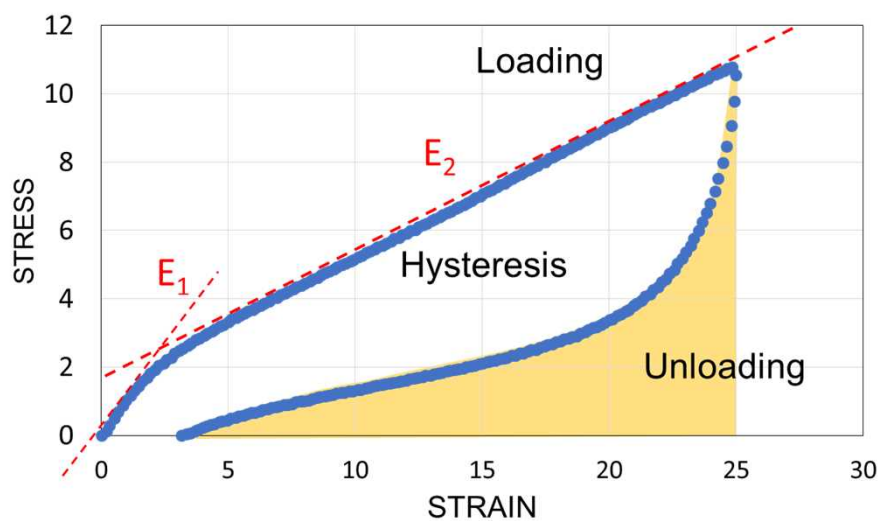
Heat Energy, area of hysteresis.

Energy released as a result of applying a force to deform an elastic object

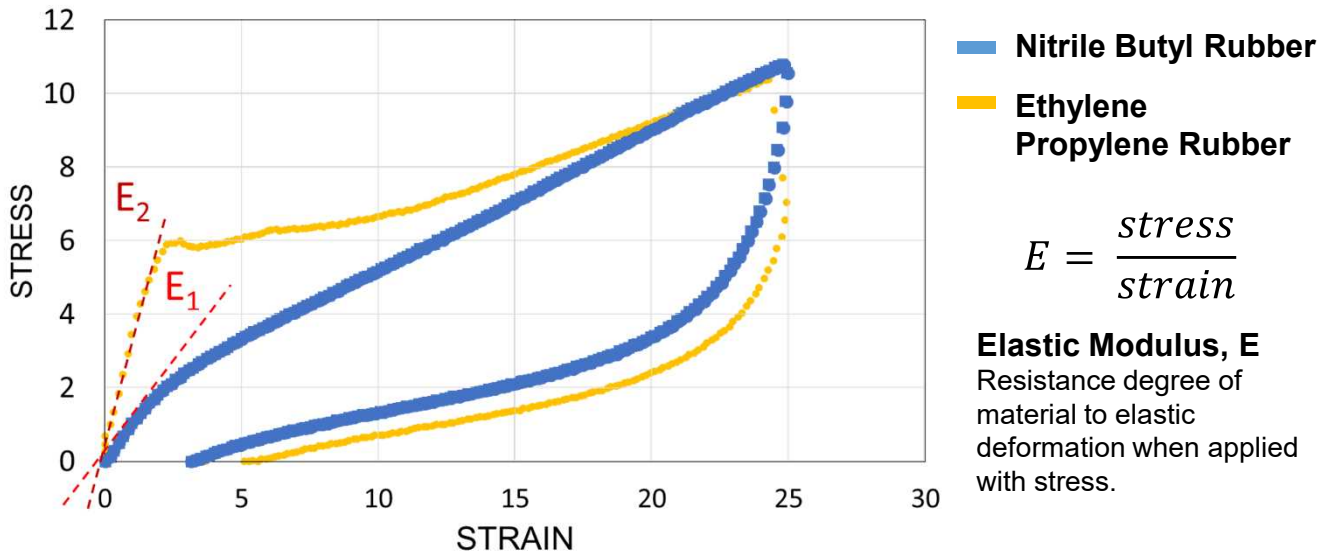
Elastic Potential

Energy, area under the unloading curve.

Energy stored as a result of applying a force to deform an elastic object



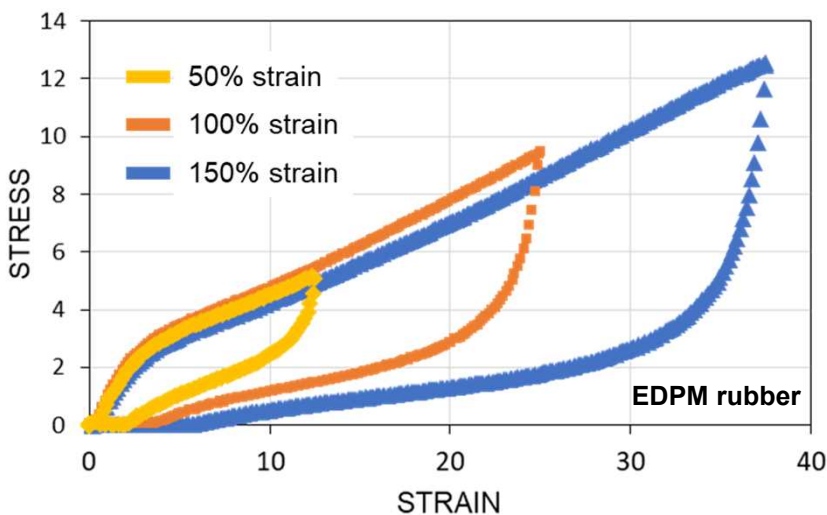
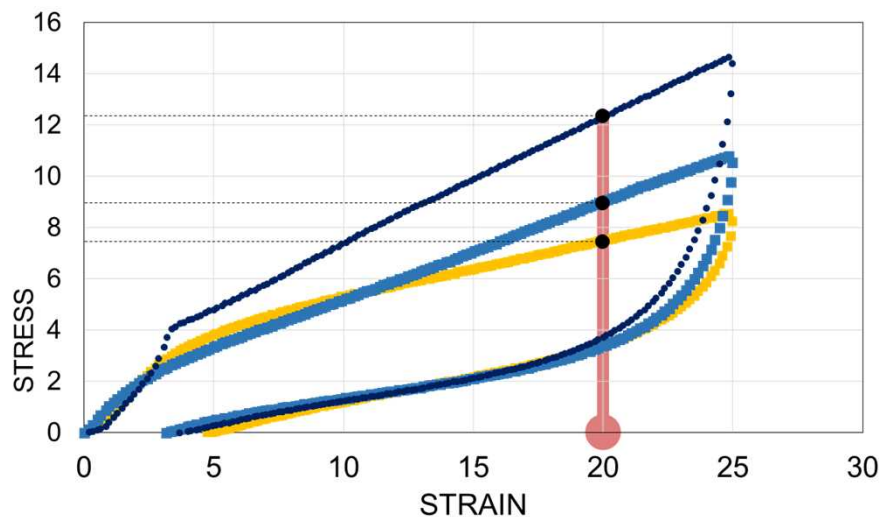
Sample Data Analysis of Various Rubbers



Higher slope in the SS curve corresponds to higher stiffness of the material. In this figure, ethylene propylene rubber has higher stiffness than nitrile butyl rubber.

- Chlorophrene Rubber
- Nitrile Butadiene Rubber
- Butyl Rubber

Higher stress experienced by the material during elongation signifies greater resistance to deformation, i.e. higher stiffness. Chlorophrene rubber has the highest stiffness as compared to the other sample.



Hysteresis Behavior

The hysteresis behavior of EDPM shows the energy loss at different %strain.