

Reference Section

Useful Definitions:

Breaking force

= The maximum force a material can stand before it breaks.

Tenacity / stress

=
$$\frac{\text{Breaking force in N or cN.}}{\text{Linear density in tex, dtex or denier}}$$

Count / Lea Strength Product

= Breaking force of a hank of yarn [lbs] X Linear Density in count

Elongation

= The length by which a material will extend beyond its original length.

% Extension / strain

=
$$\frac{\text{The extended length} - \text{original length} \times 100}{\text{original length} \times 1}$$

Initial modulus

= Measures resistance to extension under low forces.

Hookean Region or Elastic Region

= In this region, stress is proportional to strain therefore the material recovers all extension, it is elastic.

Yield Point

= This is the end of the elastic region.

Primary creep

= Recovery after extension with time.

Secondary creep

= Non-recoverable extension [permanent deformation].

Relaxation

= Continued extension without the further application of force.