

Elasticity modulus or **Young's modulus** (commonly used symbol: E) is a measure for the ratio between the *stress* applied to the body and the resulting *strain*, where

Stress = Tension/Cross section of the body (also referred to as "tensile stress"), with dimension $\text{Newton}/\text{m}^2 = \text{kg}/(\text{m} \times \text{s}^2)$;

Strain = $\Delta L/L$ (i.e., body elongation per unit length, dimensionless).

E thus has the dimension Force/cross section, e.g., Newton/m^2 , which is the same as Pa (Pascal, the unit for pressure). The E values for woods are typically referred to in GPa (GigaPascal), which is $1000,000,000 \times \text{Pa}$. The elasticity value plays a crucial role in string construction, and for bows with concern to their bending stiffness, where E values between 19 and 24 GPa are preferred.