

Elastic Constant or 'Hooke's Constant'

We all know that the further you pull back an elastic, the further it flies. This is because energy is stored in the stretched elastic and it is released as kinetic energy when you allow it to 'unstretch'.

British scientist, Robert Hooke (1635 – 1703) , was one of the first scientists to study elasticity.

Hooke's Law - states that the deformation of an elastic object is proportional to the force applied to deform it. Mathematically: $F = kx$ where

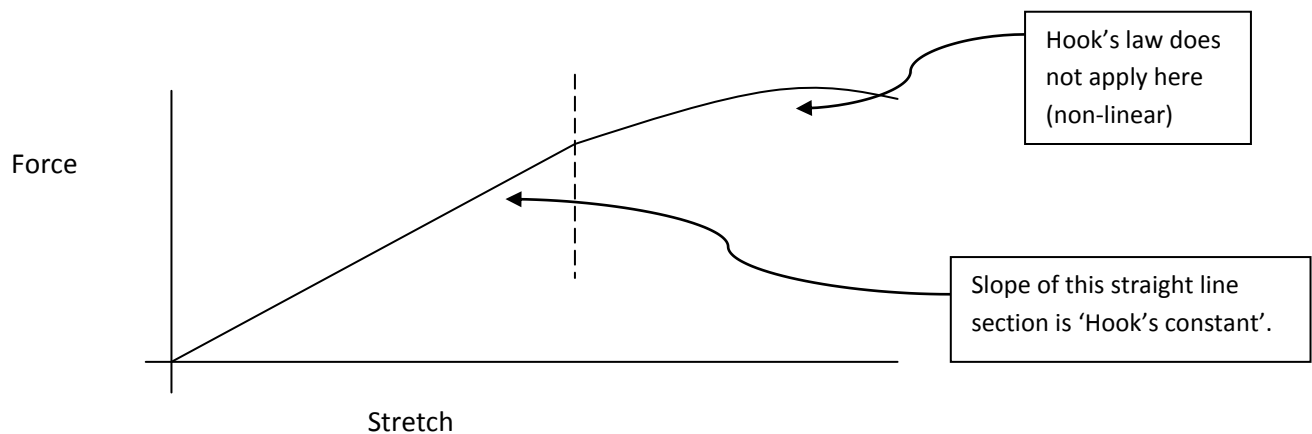
$F = \text{force (N)}$

$k = \text{Hooke's constant (experimentally determined) (N/m)}$

$x = \text{is deformation of elastic material measured from equilibrium (measure just stretched/compressed part) (m)}$

To determine 'k' for a given material, you must plot force vs. Stretch and measure the slope.

The 'k' constant is determined experimentally.



Calculating 'k' constant – remember to only measure the stretch or compression, not the entire length of material.

