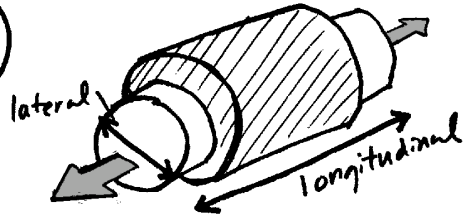


MATERIAL PROPERTIES

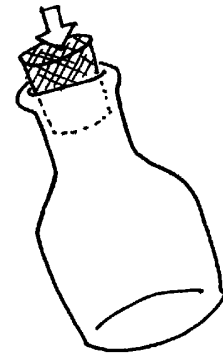
POISSON'S RATIO $\nu = - \left(\frac{\epsilon_{\text{lateral}}}{\epsilon_{\text{longitudinal}}} \right)$



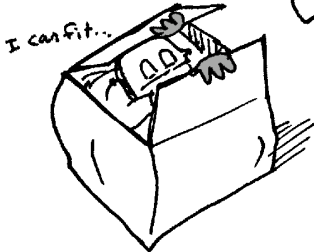
Longitudinal strain is parallel to the load whereas lateral strain is perpendicular to the load.

ν gives you an idea of how compressible a material is.

Something that has $\nu = .5$ is incompressible. That means that the **VOLUME** stays constant even if it is pushed and pulled in many directions. Cork is close to 0, so it doesn't swell outwards when force is applied on top. (axially)



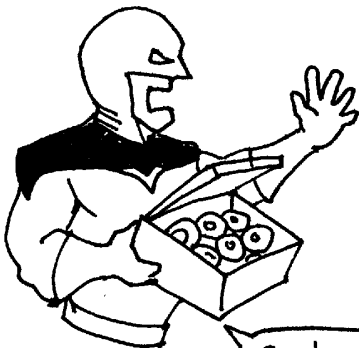
That's NOT what I meant by compressible!



FACTOR OF SAFETY

$$K_{\text{safety}} = \left(\frac{\text{Value that produces failure}}{\text{Computed Value}} \right)$$

$$= \left(\frac{\text{maximum}}{\text{what's allowed}} \right)$$



Does that include the pie I ate earlier?

Scalar, if 10 donuts make you sick, and your K_s is 2, you're only allowed to eat 5!