

50.7: Summary

The types of stress are:

- Longitudinal (normal)
- Tensile
- Compressional
- Transverse (shear)
- Translational
- Torsional
- Volume

The following table summarizes the formulæ involved in elasticity.

Table 50.7.1 Summary of elasticity equations.

Type of Stress	Stress	Strain ε	Elastic modulus E
Longitudinal (tensile or compressional)	F_n/A	$\Delta L/L_0$	$Y = F_n L_0 / (A \Delta L)$
Transverse (translational)	F_t/A	$\phi \approx d/l$	$S = (F_t/A) / (d/l)$
Transverse (torsional)	F_t/A	$r\theta/\ell$	$S = 2\tau\ell / (\pi r^4\theta)$
Volume	P	$-\Delta V/V_0$	$B = -P / (\Delta V/V_0)$

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