

Formulae

1. Total Energy = $\frac{1}{2} m v^2 + mgh$

2.
$$s_z = \frac{2(1-\nu)q}{G} \sqrt{l^2 - x^2}$$

3.
$$l_c = \frac{s_m G}{2(1-\nu)q}$$

4.
$$\sigma_s = 7.2 \frac{R_0^{0.5933}}{V^{0.0667}} \left\{ \frac{0.5933}{\varepsilon} \left[\left(\frac{R}{R_0} \right)^\varepsilon - 1 \right] + 1 \right\} MPa$$

5.
$$e = 1 - \frac{w_1 w_2}{C_1 C_2}$$

6.
$$ERR = \frac{\Delta U_m}{\Delta A} = \frac{\pi(1-\nu)lq^2}{2G}$$

7.
$$\nu_p = \sqrt{\frac{\lambda + 2G}{\rho}} \quad \nu_s = \sqrt{\frac{G}{\rho}}$$