the second term, i.e. until

$$\frac{(\gamma_0+1)p_i - 2\gamma_0 p_o}{(\gamma_0-1)S_t} - \frac{2(p_i - \gamma_0 p_o)}{(\gamma_0-1)S_c} = \frac{p_i}{S_c}$$

i.e. until $\frac{p_o}{p_i} = \frac{\gamma_0+1}{2\gamma_0}$

As p_o get further increases beyond $\frac{\gamma_0+1}{2\gamma_0}\cdot p_i$, the second term predominates, i.e.

$1/n = p_i/S_c$ or $(\gamma_0-1)\,S_c/n = (\gamma_0-1)\,p_i$

in the form of tabulated (ix)

This is valid until all stresses are equal – when $p_o = p_i$ then $\sigma_t = \sigma_z = \sigma_r$.

Finally, when p_o increases beyond p_i, the tangential stress again takes over, being the largest compressive (–ve) component.

$$1/n = -\check{\sigma}/S_c = \frac{2\gamma_0 p_o - (\gamma_0+1)p_i}{(\gamma_0-1)S_c}$$

or

$$(\gamma_0-1)\frac{S_c}{n} = 2\gamma_0 p_o - (\gamma_0+1)p_i$$

It is evident that the design equations for a brittle CLOSED cylinder are identical to those of an OPEN cylinder (though the argument differs in detail).

Below is shown a typical case. As external pressure increases the stress components (apart from axial) decrease linearly. The relative significance of the three terms in 1/n equation therefore alters – i.e. 1/n consists of four linear portions a-b, b-c &c.