

plastic-elastic boundary has reached the outer surface

$$\frac{P_y}{\sigma_y} = \log_e K, \quad \dots\dots\dots(7)$$

a result obtained by van Iterson (1912) by a slightly different method. Using this the Leinss factor  $\alpha$  may be derived

$$= \frac{(K-1)\sigma_y}{P_y} = \frac{K-1}{\log_e K} \quad \dots\dots\dots(8)$$

For values of  $K$  between 1.5 and 4.0 this approximates to a linear relation between  $\alpha$  and  $K$  with a slope of 0.4. It allows, however, no variation of slope with  $\sigma_y$  and, therefore, cannot fully describe the experimental results.

The Leinss equation remains a most useful empirical relation between easily measured properties of a metal and the maximum allowable internal pressure for a cylinder of that metal.

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