

Chart 13: Strength-at-temperature, $\sigma(T)$, against temperature, T

Materials tend to show a strength which is almost independent of temperature up to a given temperature (the 'onset-of-creep' temperature); above this temperature the strength falls, often steeply. The lozenges show this behaviour (see inset at the bottom right). The 'strength' here is a short-term yield strength, corresponding to 1 hour of loading. For long loading times (10 000 hours for instance), the strengths are lower.

This chart gives an overview of high temperature strength, giving guidance in making an initial choice. Design against creep and creep-fracture requires further information and techniques.

