

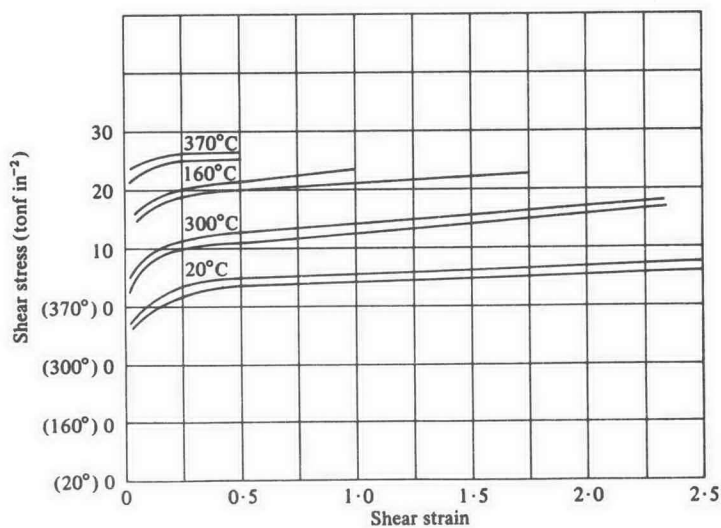


Figure 10. Derived shear stress-strain curves at large strains for Vibrac.

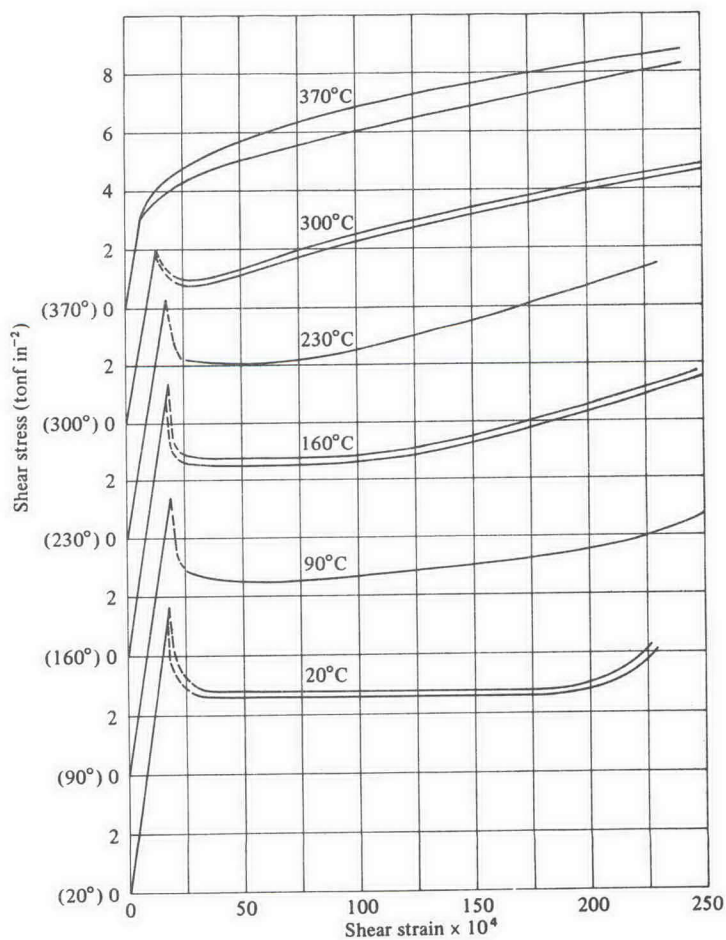


Figure 11. Derived shear stress-strain curves at small strains for EN3.

In any case, at strains higher than that associated with the ultimate stress, the current area of the neck is required, and the radius of the curvature of the neck in the plane containing the axis of the specimen is needed to be able to apply the Bridgman (1952) analysis of the state of stress at the neck. Figures 13, 14 and 15 give the tension data at various temperatures for the three steels tested.

With mild steel it was noted, especially at temperatures above room temperature, that after the upper yield had been exceeded the material, after an elapse of 3 min, had again developed an upper yield stress. Appreciably higher stresses than the equilibrium stress achieved after 3 min had to be applied before yield took place, and

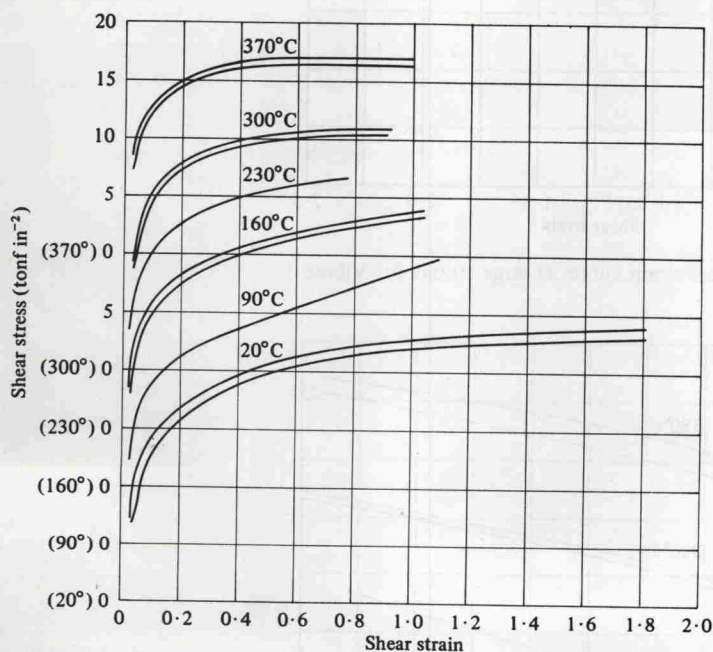


Figure 12. Derived shear stress-strain curves at large strains for EN3.

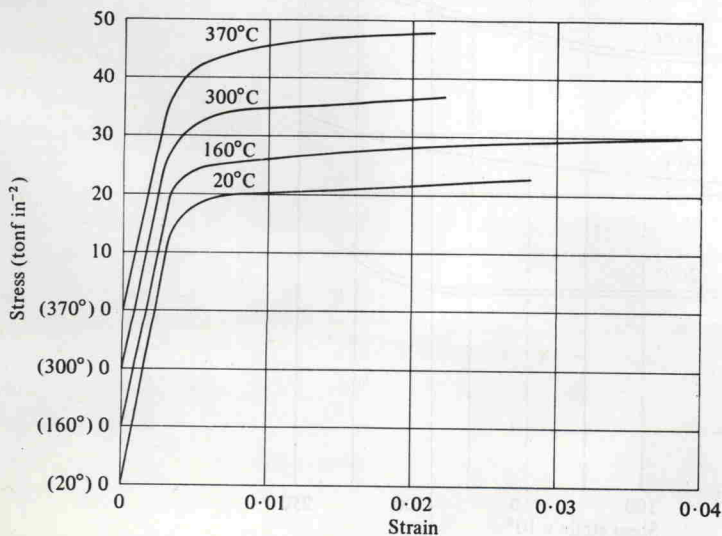


Figure 13. Tension tests on Hykro.