CODE

COMMENTARY

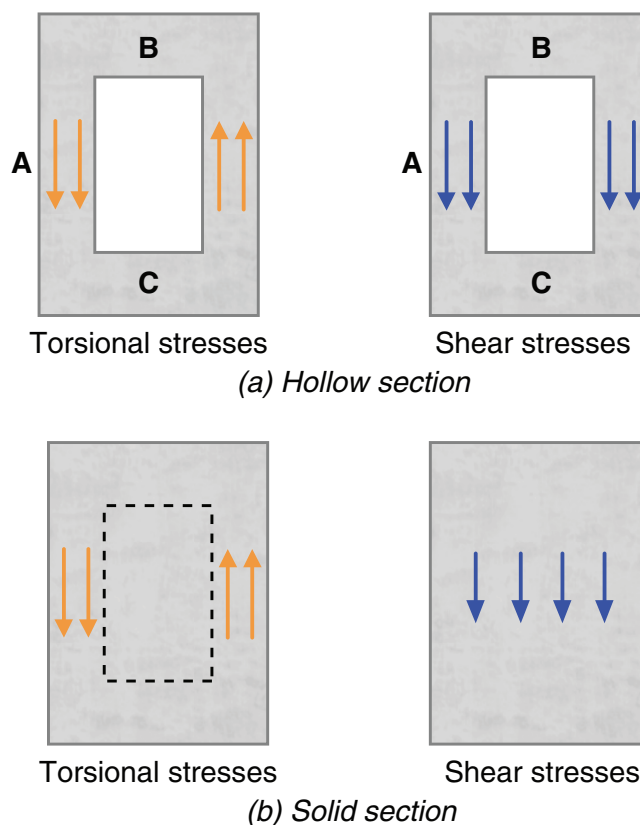*(a) Hollow section*

(b) Solid section

Fig. R22.7.7.1—*Addition of torsional and shear stresses.*

22.7.7.1.1 For prestressed members, the value of *d* used in 22.7.7.1 need not be taken less than **0.8h**.

R22.7.7.1.1 Although the value of *d* may vary along the span of a prestressed beam, studies (MacGregor and Hanson 1969) have shown that, for prestressed concrete members, *d* need not be taken less than **0.8h**. The beams considered had some straight prestressed reinforcement or reinforcing bars at the bottom of the section and had stirrups that enclosed the longitudinal reinforcement.

22.7.7.1.2 For hollow sections where the wall thickness varies around the perimeter, Eq. (22.7.7.1b) shall be evaluated at the location where the term

$$\left(\frac{V_u}{b_w d}\right) + \left(\frac{T_u p_h}{1.7 A_{oh}^2}\right)$$

is a maximum.

R22.7.7.1.2 Generally, the maximum torsional stress will be on the wall where the torsional and shearing stresses are additive (Point A in Fig. R22.7.7.1(a)). If the top or bottom flanges are thinner than the vertical webs, it may be necessary to evaluate Eq. (22.7.7.1b) at Points B and C in Fig. R22.7.7.1(a). At these points, the stresses due to the shear are usually negligible.

22.7.7.2 For hollow sections where the wall thickness is less than A_{oh}/p_h, the term $(T_u p_h / 1.7 A_{oh}^2)$ in Eq. (22.7.7.1b) shall be taken as $(T_u / 1.7 A_{oh} t)$, where *t* is the thickness of the wall of the hollow section at the location where the stresses are being checked.

22.8—Bearing
   22.8.1 *General*

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