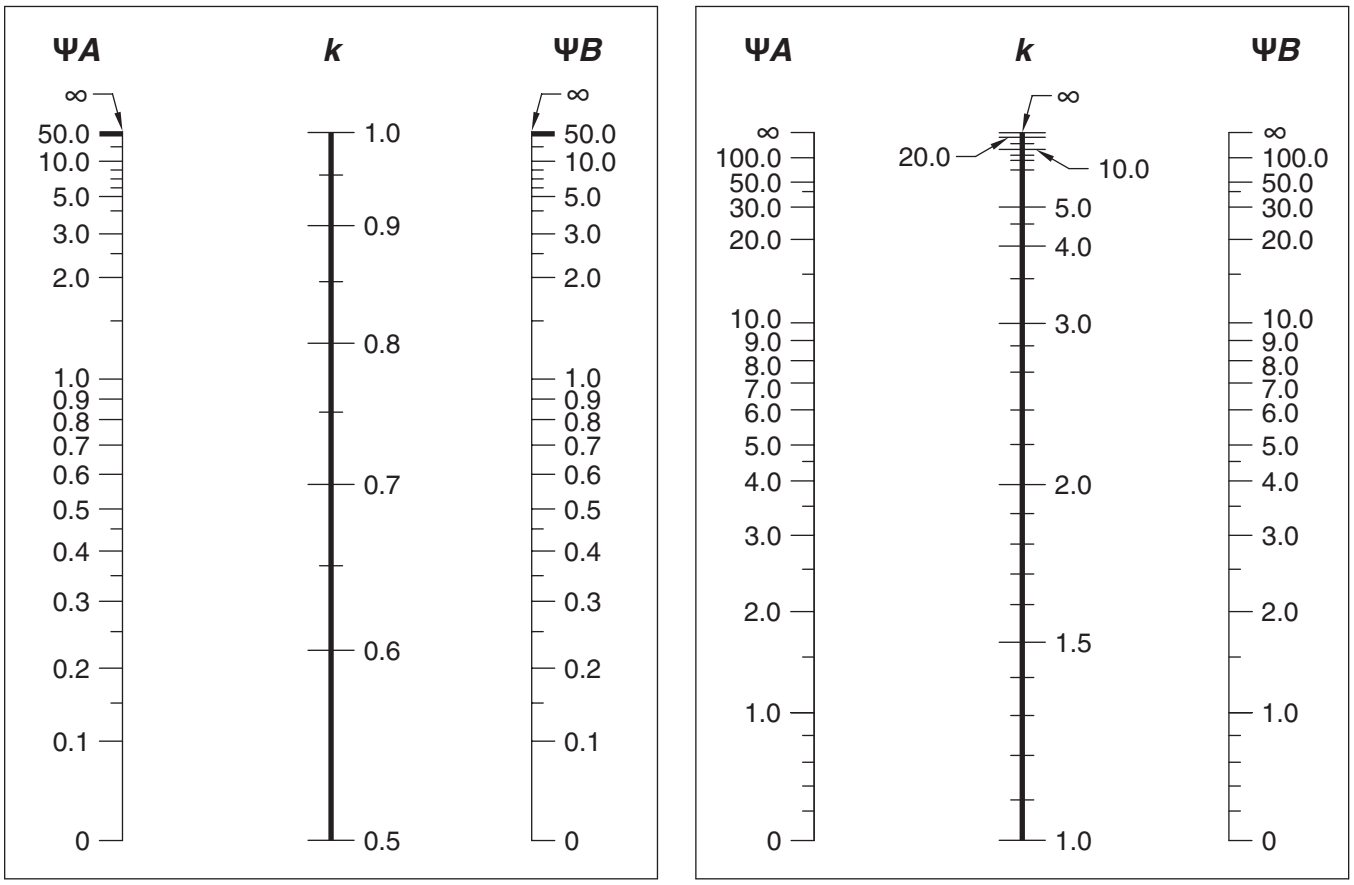
CODE

If bracing elements resisting lateral movement of a story have a total stiffness of at least 12 times the gross lateral stiffness of the columns in the direction considered, it shall be permitted to consider columns within the story to be braced against sidesway.

COMMENTARY

As a first approximation, ***k*** may be taken equal to 1.0 in Eq. (6.2.5.1b) and (6.2.5.1c).

The stiffness of the lateral bracing is considered based on the principal directions of the framing system. Bracing elements in typical building structures consist of structural walls or lateral braces. Torsional response of the lateral-force-resisting system due to eccentricity of the structural system can increase second-order effects and should be considered.



(a) Nonsway frames

(b) Sway frames

Ψ = ratio of $\sum(EI/\ell_c)$ of all columns to $\sum(EI/\ell)$ of beams in a plane at one end of a column

ℓ = span length of of beam measured center to center of joints

Fig. R6.2.5.1*—Effective length factor* **k**.

6.2.5.2 The radius of gyration, ***r***, shall be permitted to be calculated by (a), (b), or (c):

(a) $$r = \sqrt{\frac{I_g}{A_g}} \qquad (6.2.5.2)$$

(b) 0.30 times the dimension in the direction stability is being considered for rectangular columns

(c) 0.25 times the diameter of circular columns