Bending Co-efficient Cb (US)

b. All values of C_b

C_b is the bending coefficient. A new expression for C_b is given in the LRFD Specification. (It is more accurate than the one previously shown.)

$$C_b = \frac{12.5M_{max}}{2.5M_{max} + 3M_A + 4M_B + 3M_c} \qquad \text{(F1-3)}$$

where M is the absolute value of a moment in the unbraced beam segment as follows:

M_{max}, the maximum
M_A, at the quarter point
M_B, at the centerline
M_c, at the three-quarter point

The purpose of C_b is to account for the influence of moment gradient on lateral-torsional buckling. The flexural strength equations with $C_b = 1.0$ are based on a uniform moment along a laterally unsupported beam segment causing single curvature buckling of the member. Other loadings are less severe, resulting in higher flexural strengths; $C_b \geq 1.0$. Typical values of C_b are given in Table F-1. For unbraced cantilevers, $C_b = 1.0$. C_b can conservatively be taken as 1.0 for all cases.

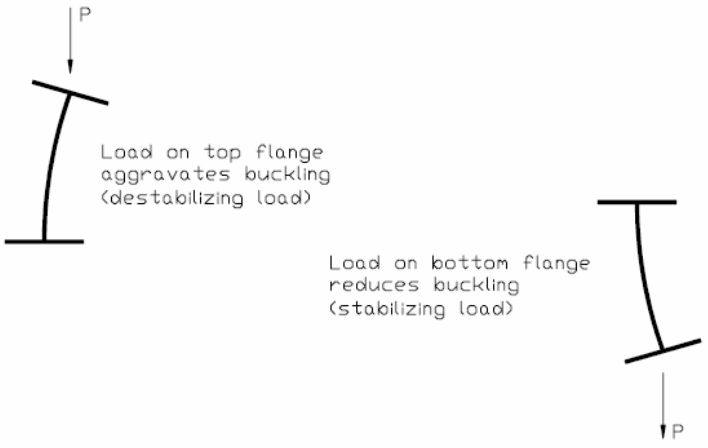
Bending Co-efficient αm (Australian)

(iii) $$\alpha_m = \frac{1.7M_m^*}{\sqrt{\left[(M_2^*)^2 + (M_3^*)^2 + (M_4^*)^2\right]}} \leq 2.5$$

where

M_m^* = maximum design bending moment in the segment
M_2^*, M_4^* = design bending moments at the quarter points of the segment
M_3^* = design bending moment at the midpoint of the segment; or

Load Height Factors in AS4100



Destabilizing and stabilizing loads