

مجاز است.

استفاده از:

فرمول در مورد آکانه ما

$$m_s = \frac{\phi_s f_g}{1.18 \phi_c f'_c}$$

$$R_r = \frac{M_r}{bd^2}$$

$$\rho = \frac{1}{m} \left\{ 1 - \sqrt{1 - \frac{R_r}{\phi_s f_g}} \right\}$$

$$\rho_{min} = \frac{f'_c}{4 f_y} \geq \frac{1.4}{f_y}$$

$$\rho_{max} = \rho_b = 1.18 \beta_1 \frac{\phi_s}{\phi_c} \times \frac{f'_c}{f_y} \times \frac{800}{400 + f'_c}$$

$$\bar{\rho}_b = \rho_b + \rho' \frac{f'_{sb}}{f_y}$$

$$f'_{sb} = 700 - \frac{d'}{d} (400 + f_y)$$

$$\bar{\rho}_{min} = \rho' \frac{f'_y}{f_y} + 1.18 \beta_1 \frac{\phi_s}{\phi_c} \times \frac{f'_c}{f_y} \times \frac{d'}{d} \times \frac{800}{400 + f'_c}$$

$$f_s = \frac{d}{d'} (600 - f'_y) - 600$$

$$a = \frac{\phi_s (A_s f_y - A'_s f'_y)}{1.18 \phi_c f'_c b}$$

$$M_r = \phi_c \times 1.18 \phi_c f'_c ab (d - a/2) + A'_s f'_y \times \phi_s (d - d')$$

$$a^2 + \frac{\phi_s}{\phi_c} \times \frac{700 A'_s - A_s f_y}{1.18 \phi_c f'_c b} a - \frac{\phi_s}{\phi_c} \times \frac{700 A'_s \beta_1 d'}{1.18 \phi_c f'_c b} = 0$$

$$f'_s = \frac{700 (a - \beta_1 d')}{a}$$

$$M_r = 1.18 \phi_c f'_c ab (d - a/2) + A'_s \phi_s f'_s (d - d')$$

$$a^2 + \frac{\phi_s}{\phi_c} \times \frac{A'_s f'_y - 700 A_s}{1.18 \phi_c f'_c b} a - \frac{\phi_s}{\phi_c} \times \frac{700 A_s \beta_1 d}{1.18 \phi_c f'_c b} = 0$$

$$M_r = 1.18 \phi_c f'_c ab (d - a/2) + A'_s \phi_s f'_y (d - d')$$

حالت اول:

حالت دوم:

حالت سوم:

استفاده از:

مجاز است.

$$V_c = \phi_c \sqrt{f'_c} b_w d$$

$$V_c + V_s = V_r$$

$$\left(\frac{A_s}{s}\right)_{req} = \frac{V_r}{\phi_s f_y d}$$

$$V_s > 2V_c \rightarrow S_{max} = \frac{d}{4}$$

$$V_s < 2V_c \rightarrow S_{max} = \frac{d}{2}$$

$$\rho_p = \frac{0.85 \phi_c f'_c A_c x_c + A_{s1} \phi_s f_y d_1 + A_{s2} \phi_s f_y d_2}{0.85 \phi_c f'_c A_c + \phi_s A_{s1} \left(\frac{f_y}{x_c}\right) + A_{s2} \left(\frac{f_y}{d_2}\right)}$$