

鋼筋混凝土必做 50 題型勘誤表

位置	修正前	修正後
P2-12 (2.25)式	$c = \frac{\sqrt{(nA_s)^2 - 2bdnA_s - nA_s}}{b}$	$c = \frac{\sqrt{(nA_s)^2 + 2bdnA_s - nA_s}}{b}$
P2-22 例題 2.3	題圖箍筋尺寸為 D13	題圖箍筋尺寸改為 D10
P2-30	$\phi_{el} = \frac{2000000}{(280000)(244335.034)} = 5.36 \times 10^{-5} \frac{1}{\text{cm}}$	$\phi_{el} = \frac{3666334.915}{(280000)(244335.034)} = 5.36 \times 10^{-5} \frac{1}{\text{cm}}$
P2-49	因是單筋梁，本頁公式中的 A'_s 皆為多出。	請本頁公式中的 $A'_s = 0$ 。
P2-52	混凝土強度有誤 $f'_c = 210 \text{ kgf/cm}^2$	$f'_c = 280 \text{ kgf/cm}^2$ ， $a = 63.882 / [(0.85 \times 0.28)(30)] = 8.947 \text{ cm}$ 。 $c = 8.947 / 0.85 = 10.526 \text{ cm}$ 。力臂 $jd = 44 - (0.5)(8.947) = 39.527 \text{ cm}$ 。對鋼筋重心取力矩 $M_n = (63.882)(39.527) / 100 = 25.251 \text{ tf-m}$ 。 $\epsilon_s = (0.003 / 10.526)(44 - 10.526) = 0.00954$ 。
P2-91	原解答鋼筋數量有誤。	$A_s = (6)(2.87) = 17.22 \text{ cm}^2 > (A_{s,\min} = 9 \text{ cm}^2)$ 。 $a = (17.22 \times 4200) / [(0.85 \times 280)(30)] = 10.129 \text{ cm}$ 。 $c = 10.129 / 0.85 = 11.916 \text{ cm}$ 。 $\epsilon_s = \epsilon_t = (0.003 / 11.916)(45 - 11.916) = 0.0083 > 0.005$ 。 $\phi M_n = (0.9)(17.22 \times 4.2)[45 - (0.5)(10.129)] / 100 = 25.995 \text{ tf-m}$ 。
P2-97	中性軸深度 $c = 19.283 / 0.85 = 22.686 \text{ cm}$ 。 $\epsilon_s = \epsilon_t = (0.003 / 22.686)(70 - 22.686) = 0.0063 > 0.005$	中性軸深度 $c = 19.328 / 0.85 = 22.739 \text{ cm}$ 。 $\epsilon_s = \epsilon_t = (0.003 / 22.739)(70 - 22.739) = 0.00624 > 0.005$
P2-109 (2.137)式	$A_{sb} = (0.85f'_c)(b)(\beta_1) \left(\frac{0.003}{0.003 + \epsilon_y} d \right) + \frac{A'_s(f'_{sb} - 0.85f'_c)}{f_y}$	$A_{sb} = \frac{(0.85f'_c)(b)(\beta_1)}{f_y} \left(\frac{0.003}{0.003 + \epsilon_y} d \right) + \frac{A'_s(f'_{sb} - 0.85f'_c)}{f_y}$
P2-109 (2.139)式	$A_{sb} \div (0.85f'_c)(b)(\beta_1) \left(\frac{0.003}{0.003 + \epsilon_y} d \right) + A'_s$	$A_{sb} \div \frac{(0.85f'_c)(b)(\beta_1)}{f_y} \left(\frac{0.003}{0.003 + \epsilon_y} d \right) + A'_s$
P2-113	簡化式用於個人求解判斷拉筋降伏之用。	簡化式用於個人求解判斷拉筋降伏之用。

	$A_{sb} \div (0.85f'_c)(b)(\beta_1) \left(\frac{0.003}{0.003 + \varepsilon_y} d \right) + A'_s \circ$ $f_y = 4200 \text{ kgf/cm}^2 \cdot A_{sb} \div (0.85f'_c)(b)(\beta_1)(0.6d) + A'_s \circ$	$A_{sb} \div \left(\frac{0.85f'_c}{f_y} \right) (b)(\beta_1) \left(\frac{0.003}{0.003 + \varepsilon_y} d \right) + A'_s$ $f_y = 4200 \text{ kgf/cm}^2 \cdot A_{sb} \div (0.85f'_c/f_y)(b)(\beta_1)(0.6d) + A'_s \circ$
P2-121	$C_c = (6.609)(16.192) = 107.013 \text{ tf} \circ$ $\phi M_n = (0.9)[(107.013)(43.369) + (29.491)(43.75)]/100 = 53.382 \text{ tf-m} \circ$	$C_c = (6.069)(16.192) = 98.269 \text{ tf} \circ$ $\phi M_n = (0.9)[(98.269)(43.369) + (29.491)(43.75)]/100 = 49.969 \text{ tf-m} \circ$
P2-125	C_c 的力臂有誤，導致 M_n 數值錯誤。	C_c 的力臂 $jd = 52.1 - (0.5)(8.147) = 48.027 \text{ cm} \circ$ $M_n = [(87.256)(48.027) + (40.508)(45.88)]/100 = 60.492 \text{ tf-m} \circ$ $\phi M_n = (0.9)(60.492) = 54.443 \text{ tf-m} \circ$
P3-24 例題 3.9 題目文字	$f_y = 4200 \text{ kgf/cm}^2$	$f_y = 2800 \text{ kgf/cm}^2$
P4-4	圖 4-4(a) 第一內支承外面	圖 4-4(a) 第一內支承外面(a)
P4-5	圖 4-5(b) 兩跨不連續端用梁支承	圖 4-5(b) 兩跨不連續端用柱支承
P4-9 例題 4.2 題目文字	$f'_c = 210 \text{ kgf/cm}^2$	$f'_c = 280 \text{ kgf/cm}^2$
P5-12 例題 5.3 題目文字	活載重 $w_L = 2.0 \text{ tf/m} \circ$ 配置 6 根 D25 拉力鋼筋。	活載重 $P_L = 10 \text{ tf} \circ$ 配置 8 根 D25 拉力鋼筋。
P5-14 觀念探索	$\Delta_{iL} = 2.678 < (1000/360 = 2.778) \cdot \text{NG.不通過！}$ $\Delta_{i,L} + \Delta_{cp+sh} = 2.678 + 1.975 = 4.653 > (1000/240 = 4.167) \text{ cm} \cdot \text{OK.檢核通過。}$	$\Delta_{iL} = 2.678 < (1000/360 = 2.778) \cdot \text{OK.檢核通過}$ $\Delta_{i,L} + \Delta_{cp+sh} = 2.678 + 1.975 = 4.653 > (1000/240 = 4.167) \text{ cm} \cdot \text{NG.不通過！}$
P6-36	$M_n = [(151.725)(18.625) + (79.09 + 12.882)(17)]/100 = 43.894 \text{ tf-m}$	$M_n = [(151.725)(18.625) + (79.09 + 126.882)(17)]/100 = 63.274 \text{ tf-m}$
P6-40	中間鋼筋 $C_{s2} = (2 \times 5.07)(1.224) = 12.411 \text{ tf} \circ$ $P_n = 182.07 + 40.175 + 12.411 - 20.686 = 213.97 \text{ tf} \circ$	中間鋼筋 $C_{s2} = (2 \times 5.07)(1.224 - 0.85 \times 0.28) = 9.998 \text{ tf} \circ$ $P_n = 182.07 + 40.175 + 9.998 - 20.686 = 211.557 \text{ tf} \circ$
P6-44	$C_{s1} = (5.07)(2142 - 0.85 \times 50)/1000 = 10.644 \text{ tf} \circ$ $P_n = 53.229 + 10.644 - 21.294 - 42.588 - 20.168 = -20.177 \text{ tf} \circ$	$C_{s1} = (5.07)(2142 - 0.85 \times 350)/1000 = 9.352 \text{ tf} \circ$ $P_n = 53.229 + 9.352 - 21.294 - 42.588 - 20.168 = -21.469 \text{ tf} \circ$

	$M_n = \frac{(53.229)(15.262) + (10.644 + 21.294)(13.5) + (42.588)(6.75) - (20.168)(6.75)}{100}$ $= 13.949 \text{ tf-m}$	$M_n = \frac{(53.229)(15.262) + (9.352 + 21.294)(13.5) + (42.588)(6.75) - (20.168)(6.75)}{100}$ $= 13.774 \text{ tf-m}$
P6-58	$300 = 7.081c + 76.902 - (118.789)(42.5 - c)/c$ $M_n = (P_n)(e) = (192.027)(0.35) = 67.209 \text{ tf-m}^\circ$ $\phi M_n = (0.65)(67.209) = 43.686 \text{ tf-m}^\circ$	$M_n = (P_n)(e) = (192.027)(0.27) = 51.847 \text{ tf-m}^\circ$ $\phi M_n = (0.65)(51.847) = 33.7 \text{ tf-m}^\circ$
P6-69	$C_{cb} = (0.85 \times 280)(30 \times 20.4)/1000 = 145.656 \text{ tf}^\circ$ $P_{nb} = 145.656 + 20.763 - 54.348 = 112.071 \text{ tf}^\circ$ $M_{nb} = [(145.656)(7.047) + (20.763 + 54.348)(4.5)]/100 = 13.644 \text{ tf-m}^\circ$	$C_{cb} = (0.85 \times 280)(22 \times 7.905)/1000 = 41.391 \text{ tf}^\circ$ $P_{nb} = 41.391 + 20.763 - 54.348 = 7.806 \text{ tf}^\circ$ $M_{nb} = [(7.806)(7.047) + (20.763 + 54.348)(4.5)]/100 = 3.93 \text{ tf-m}^\circ$ 軸力彎矩強度互制圖請依修正後數據重繪。
P6-70	$\phi P_{nb} = (0.65)(112.071) = 72.846 \text{ tf}^\circ$; $\phi M_{nb} = (0.65)(13.644) = 8.869 \text{ tf-m}^\circ$	$\phi P_{nb} = (0.65)(7.806) = 5.074 \text{ tf}^\circ$; $\phi M_{nb} = (0.65)(3.93) = 2.555 \text{ tf-m}^\circ$
P7-18	題目 D13	改成 D10
P7-20	題目 $f'_c = 210 \text{ kgf/cm}^2$	$f'_c = 280 \text{ kgf/cm}^2$
P7-27	解答有多出無關的文字，1.計算中性軸深度～強度足夠。	1.計算中性軸深度～強度足夠
P7-42	$s = 13 \text{ cm} < s_{req} < s_{\max}$ ，配置滿足規範規定。	$(s = 15 \text{ cm}) > (s_{req} = 13.573)$ ，配置「不」滿足規範規定。
P13-31	$s \leq (s_{req} = 13.22) \leq (s_{\max} = 13.25)$ ，實際配置取 $s = 13 \text{ cm}$ 。	$s \leq (s_{\max} = 13.25) \leq (s_{req} = 19.834)$ ，實際配置取 $s = 13 \text{ cm}$ 。