



Mi Universidad

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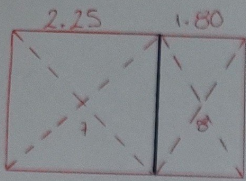
Nombre del tema : Análisis de estructura

Parcial : 2

Nombre del profesor: Pedro Alberto García López

Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 5



T 0.90
 2.40 = 0.60 m
 L 0.9

Datos

H = 20 cm Fr = 0.90
 b = 10 cm f_m max = 0.01143
 L = 2.40 cm P_{min} = 0.00235
 d = 36 cm
 F'c = 200 kg/cm
 Fy = 2,400 kg/cm
 F'e = 136 kg/cm

① H₁ P/170 + R = 0.092 m = 0.10 m
 H₂ P/170 + R = 0.089 m = 0.10 m

② Losa 1 = 610 kg/cm²
 Losa 2 = 610 kg/cm

③ A₁ = 1.26 m²
 A₂ = 1.47 m²

④ P₁ = 320.25 kg/m
 P₂ = 373.62 kg/m

⑤ P.P = $\frac{2.40}{12} = 0.20$ m
 b = 0.5(h) = 0.10 m

h(lb) peso = 0.048 t/m
 Carga w = $\frac{693.91}{1000}$
 ⇒ 0.6939 + 0.048 = 0.7419 t/m

⑥ w = ~~0.00009~~
 0.5341

⑦ Momento = $\frac{0.7419 (2.40)^2}{8} = 0.5341$

⑧ Momento ultimo
 Mu = 69,433

⑨ $\sqrt{\frac{-69433}{0.90 \cdot 10 \cdot 36^2 \cdot 136}} \cdot 2 + 1 = 0.9552$

⑩ P = 0.001450

⑪ A = ρ(b)(d)
 = 0.522 cm²

⑫ No 4 = 1.27 cm 1 # 4 = 1.27 cm
 No 5 = 1.98 cm
 No 6 = 2.85 cm

A_{smin} = 0.846

A_{smax} = 4.1148



① $H_1 = 0.1329 = 0.13 \text{ m}$
 $H_2 = 0.0897 = 0.10 \text{ m}$

② $\text{Losak} = 682 \text{ kg/cm}^2$
 $\text{Losak2} = 610 \text{ kg/cm}^2$

③ $A_1 = 3.89 \text{ m}^2$
 $A_2 = 1.485 \text{ m}^2$

④ $P_1 = 1091.76 \text{ k/m}$
 $P_2 = 372.77 \text{ k/m}$

⑤ $\frac{2.43}{12} = 0.20 \text{ m}$
 $0.5(0.20) = 0.10 \text{ m}$
 $= \frac{1464}{1000} = 1.464 + 0.048 = 1.512$

$\frac{20}{10} 0.20 \cdot 0.10 \cdot 2.43 = 0.048$

⑥ $w = 1.512 \text{ t/m}$

⑦ $\frac{1.51(2.43)}{8} = 1.11$

⑧ $M_U = 144,300$

⑨ $\sqrt{\frac{-144,300}{0.90 \cdot 10 \cdot 36 \cdot 136} \cdot 2 + 1} = 0.9044$

⑩ $P = 0.003095$

⑪ $A_s = 0.003095(10)(36) = 1.1142 \text{ cm}^2$

⑫ $\text{No 4} = 1.27 \text{ cm}^2$
 $\text{No 5} = 1.98 \text{ cm}^2$
 $\text{No 6} = 2.85 \text{ cm}^2$

Datos

$H = 20 \text{ cm}$

$b = 10 \text{ cm}$

$L = 2.43$

$d = 36 \text{ cm}$

$F'c = 200 \text{ kg/cm}^2$

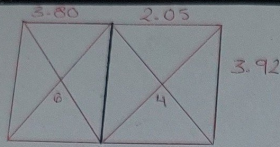
$F_y = 2400$

$F'c = 136$

$F_r = 0.90$

$A_{s \text{ min}} = 0.846 \text{ cm}^2$

$A_{s \text{ max}} = 4.1148 \text{ cm}^2$



T 1.02 m 2.04
 1.88 m
 ⊥ 1.02 m

Datos

H = 30 cm $F_r = -90$
 b = 15 cm $P_{max} = 0.01143$
 L = 3.92 cm $P_{min} = 0.00235$
 d = 36 cm
 $F_c = 200 \text{ N/cm}$
 $F_y = 2,400 \text{ N/cm}$
 $F'_c = 136 \text{ K/cm}$

① $H_1 \rightarrow 11.94 = 0.12$
 $H_2 \rightarrow 0.14 = 0.13$

② $Losal = 658$
 $Los2 = 682$

③ $A_1 = \frac{3.80 \cdot 1.90}{2} = 3.61 \text{ m}^2$
 $A_2 = \frac{3.92 + 1.88 \text{ m} (1.02 \text{ m})}{2} = 2.91 \text{ m}^2$

④ $P_1 = 3.61 \times 658 = 2395.3 / 3.92 = 605.94$
 $P_2 = 2.91 \times 682 = 1977.8 / 3.92 = 504.54$

⑤ $\frac{3.92}{12} = 0.30$ $\frac{30}{15}$
 $0.50 (0.30) = 0.15$
 $0.30 \cdot 0.15 \cdot 2.40 = 0.100 \text{ t/m}$

$605.94 + 504.54 + 0.100 \text{ t/m} = \frac{1,110}{1000} = 1.110$
 $1.110 + 0.100 \text{ t/m} = 1.21$

⑥ $w = 1.21 \text{ t/m}$

⑧ $M_u = 301,600$

⑦ $\frac{1.21 (3.92)^2}{8} = 2.32$

⑨ $= \frac{\sqrt{-301,600}}{.90 \cdot 15 \cdot 36 \cdot 136} \cdot 2 + 1 = 0.8640$

⑩ $P = 0.004403$

⑪ $A_s = 2.3776 \text{ cm}^2$

⑫

No4 = 1.27 cm² 1 # 4 = 1.27 cm²
 No5 = 1.98 cm²
 No6 = 2.85 cm²

$A_{smin} = 1.26 \text{ cm}^2$

$A_{smax} = 6.27 \text{ cm}^2$