

ARQUITECTURA

RESISTENCIA DE MATERIALES DE  
CONSTRUCCIÓN

ARQUITECTO PEDRO

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4TO CUATRIMESTRE

14 DE OCTUBRE 2023



Satellite

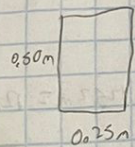


Concreto reforzado  
Muro de block = 270 Kg/m

$$h = \frac{L}{12} \rightarrow \frac{5.70 \text{ m}}{12} = 0.475$$

$$b = 0.5(Ch) \rightarrow 0.5(0.50 \text{ m}) = 0.25 \text{ m}$$

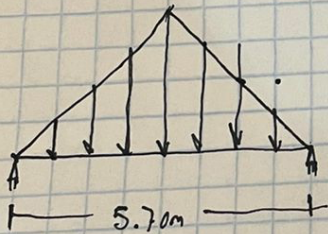
$$P.P. \text{ Mabc} \rightarrow 0.50 \text{ m} \times 0.25 \text{ m} \times 2,400 \text{ Kg/m}^2 = 300 \text{ Kg/m}$$



$$P.P. \text{ muro} \rightarrow 3.18 \text{ m} (270 \text{ Kg/m}) = 858.6 \text{ Kg/m}$$

$$+ 300 \text{ Kg/m}$$

$$1158.6 \text{ Kg/m} \rightarrow 1.1586 \text{ ton/m}$$



$$M = \frac{qL^2}{12} = \frac{1.1586 \text{ ton/m} (5.70)^2}{12} = 3.136 \text{ ton/m}$$

$$R_A = R_B = \frac{qL}{4} = \frac{1.1586 \text{ ton/m} (5.70)}{4} = 1.651 \text{ ton}$$

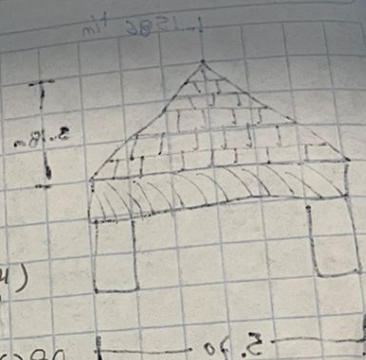
Satellite

$$E = 3,100,000 \text{ ton/m}^2$$

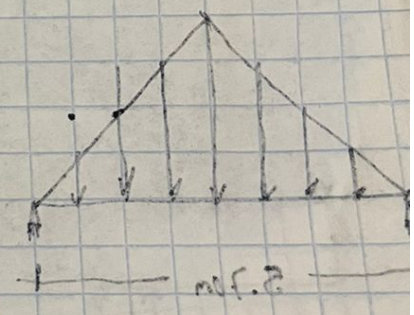
$$I_A = \frac{bh^3}{12} = \frac{0.25 \text{ m} (0.50)^3}{12} = 0.002604 \text{ m}^4$$

$$\theta_A = \theta_B = \frac{5qL^3}{192EI} = \frac{5(1.1586 \text{ ton/m})(5.70)^3}{192(3,100,000 \text{ ton/m}^2)(0.002604 \text{ m}^4)}$$

$$= \frac{1072.823049}{1582140.21} = 0.0006780$$



$$F = \frac{qL^4}{120EI} \rightarrow \frac{1.1586 \text{ ton/m} (5.70 \text{ m})^4}{120(3,100,000 \text{ ton/m}^2)(0.002604 \text{ m}^4)} = 0.001252 \text{ m} = 12.52 \text{ cm}$$



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