



EJERCICIOS

Nombre del Alumno: José Trinidad López Domínguez

Nombre del tema:

ANÁLISIS DE CARGAS EN LOZAS MACIZAS Y CASSETÓN
(ENTREPISO, AZOTEA Y INCLINADAS)

Parcial: 1°

Nombre de la Materia:

ANÁLISIS DE ESTRUCTURAS

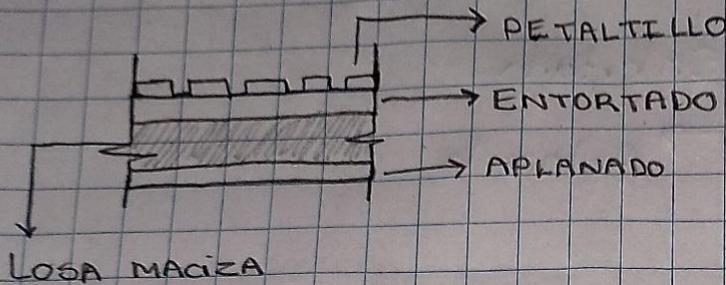
Nombre del profesor: Arq. Pedro Alberto García López

Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 5to

Fecha: Comitán de Domínguez a 25 de enero de 2025

ENTREPISO



10 cm casa habitación

Acabado de piso	=	70 Kg/m ²
Entortado	=	30 Kg/m ²
Losa maciza (10cm)	=	240 Kg/m ²
Aplanado	=	30 Kg/m ²
Reglamento	=	40 Kg/m ²

$$C_{vm} = \frac{410 \text{ Kg/m}^2}{600 \text{ Kg/m}^2} = 190 \text{ Kg/m}^2$$

12 cm casa habitación

Acabado de piso	=	70 Kg/m ²
Entortado	=	30 Kg/m ²
Losa maciza (12cm)	=	288 Kg/m ²
Aplanado	=	30 Kg/m ²
Reglamento	=	40 Kg/m ²

$$C_{vm} = \frac{458 \text{ Kg/m}^2}{648 \text{ Kg/m}^2} = 190 \text{ Kg/m}^2$$

25 cm casa habitación

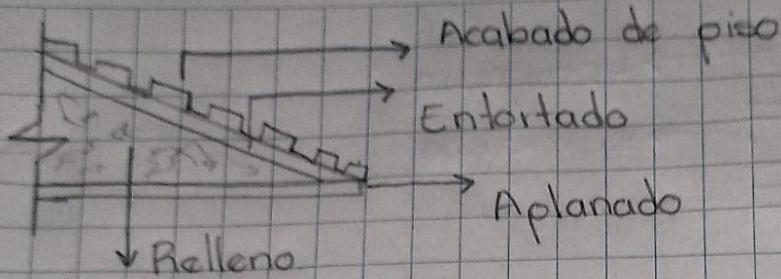
70	70 Kg/m ²
	30 Kg/m ²
	600 Kg/m ²
	30 Kg/m ²
	40 Kg/m ²

$$C_{vm} = \frac{770 \text{ Kg/m}^2}{960 \text{ Kg/m}^2} = 190 \text{ Kg/m}^2$$

70	70 Kg/m ²
	30 Kg/m ²
	295 Kg/m ²
	30 Kg/m ²
	40 Kg/m ²

$$C_{vm} = \frac{465 \text{ Kg/m}^2}{655 \text{ Kg/m}^2} = 190 \text{ Kg/m}^2$$

AZOTEA



Azotea 10 cm

Acabado de piso	=	70 Kg/m ²
Entortado	=	30 Kg/m ²
Relleno	=	100 Kg/m ²
Losa (10 cm)	=	240 Kg/m ²
Aplanado	=	30 Kg/m ²
Reglamento	=	40 Kg/m ²
		510 Kg/m ²
Cum =		<u>100 Kg/m²</u>
		610 Kg/m ²

Azotea 12 cm

		70 Kg
		30
		100
		288
		30
		40
		558
Cum =		<u>100 Kg/m²</u>
		658 Kg/m ²

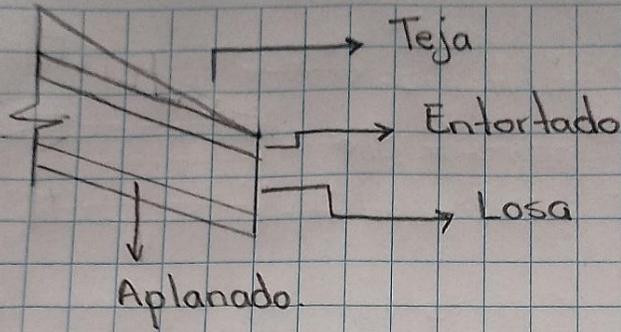
Azotea 25 cm

70	Kg/m ²
30	Kg/m ²
100	Kg/m ²
600	Kg/m ²
30	Kg/m ²
40	Kg/m ²
870	Kg/m ²
Cum =	<u>100 Kg/m²</u>
970	Kg/m ²

70	Kg/m ²
30	Kg/m ²
100	Kg/m ²
295	Kg/m ²
30	Kg/m ²
40	Kg/m ²
565	Kg/m ²
Cum =	<u>100 Kg/m²</u>
665	Kg/m ²



INCLINADA



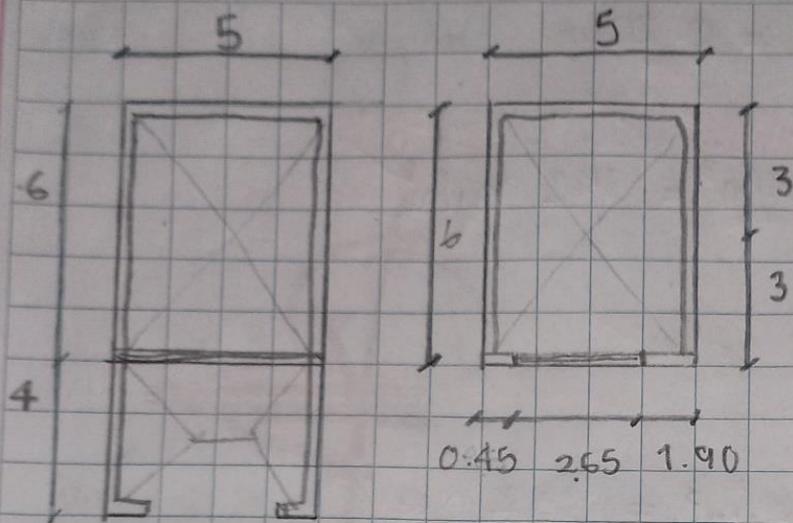
10 cm

12 cm

Teja	=	50 Kg/m ²		50 Kg/m ²
Entortado	=	30 Kg/m ²		30 Kg/m ²
Losa	=	240 Kg/m ²		288 Kg/m ²
Aplanado	=	30 Kg/m ²		30 Kg/m ²
Reglamento	=	40 Kg/m ²		40 Kg/m ²
		<u>390 Kg/m²</u>		<u>438 Kg/m²</u>
Cv Azotea	=	40 Kg/m ²		40 Kg/m ²
		430 Kg/m ²		478 Kg/m ²

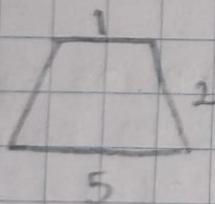
25 cm

Teja		50 Kg/m ²		50 Kg/m ²
Entortado		30 Kg/m ²		30 Kg/m ²
Losa		600 Kg/m ²		295 Kg/m ²
Aplanado		30 Kg/m ²		30 Kg/m ²
Reglamento		40 Kg/m ²		40 Kg/m ²
		<u>750 Kg/m²</u>		<u>445 Kg/m²</u>
Cv Azotea		40 Kg/m ²		40 Kg/m ²
		790 Kg/m ²		490 Kg/m ²



① AREA 1  $A = \frac{B \times h}{2} = \frac{5(2.5)}{2} = 6.25 \text{ m}^2$

AREA 2



$$A = \frac{B + b \times h}{2} = \frac{5 + 1(2)}{2} = \frac{12}{2} = 6.0 \text{ m}^2$$

② W (AREA X PLOSA)

$$A_1 = 6.25 \text{ m}^2 (655 \text{ K/m}^2) = 4093.75 \text{ K/m}^2$$

$$A_2 = 6.0 \text{ m}^2 (655 \text{ K/m}^2) = 3930 \text{ K/m}^2$$

③ W = Peso / Distancia de apoyo

$$\frac{4093.75 \text{ K/m}^2}{5} = 818.75 \text{ K/m}$$

$$\frac{3930 \text{ K/m}^2}{5} = 786.0 \text{ K/m}$$

$$h \text{ trabe } \left(\frac{l}{12} \right) = \frac{5}{12} = 0.416 = 0.40 \text{ m}$$

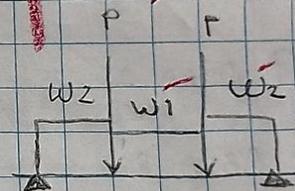
$$B = 0.5(h) \rightarrow 0.5(0.40) = 0.20M$$

④ PESO PROPIO = $0.20 \times 0.40 \times 2,400 \text{ kg/m}^3 = 192 \text{ kg/m}$

⑤ PESO MURO $3 \cdot m (270 \text{ kg/m}) = 810 \text{ kg/m}$

⑥ PESO CERRAMIENTO $0.20 \times 0.25 \times 2,400 \text{ kg/m}^3 = 120 \text{ kg/m}$

⑦ LOSA DE AZOTEA
 AREA 3 = (6.25 m^2)
 $6.25 \text{ m}^2 (665 \text{ kg/m}^2) = 4,156.25 \text{ kg/m}$



⑧ W $\frac{4,156.25 \text{ kg/m}}{5 \text{ m}} = 831.25 \text{ kg/m}$

$W1 = 1796.75 \text{ kg/m}$
 $W2 = 3750 \text{ kg/m}$
 $P = 1,339.95625$

⑨ PESO PRETIL $0.20m (270 \text{ kg/m}) = 54 \text{ kg/m}$

$W = \text{Peso cerramiento} + W + P \cdot P$
 $= 120 \text{ kg/m} + 831.25 \text{ kg/m} + 54 \text{ kg/m} = 1005.25$
 $= 1005.25 (2.65) = \frac{2663.9125}{2} = 1331.95625 = RA = RB$

$W1 = 818.750 + 788.0 \text{ kg/m} + 192 \text{ kg/m} = 1796.75 \text{ Kg/m}$

$W2 = 1796.75 \text{ kg/m} + 810 + 120 \text{ kg/m} + 54 + 831.25 = 3612$

$P = 1331.95625$

W PESO MURO, CERRAM. Area Azo, Pret. =