

# PREDIMENSIONAMIENTO



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BASURTO



Elementos prefabricados y no prefabricados

# PREDIMENSIONAMIENTO

Consiste en proponer las dimensiones preliminares de las secciones y peraltes de cada uno de los elementos estructurales. También se les llama sección previa.

NO es un calculo estructural, es una sección aproximada a la definitiva.



Elementos prefabricados y no prefabricados

# PREDIMENSIONAMIENTO

1. Trabe
2. Nervadura
3. Losa maciza
4. Losa reticular



Elementos prefabricados y no prefabricados

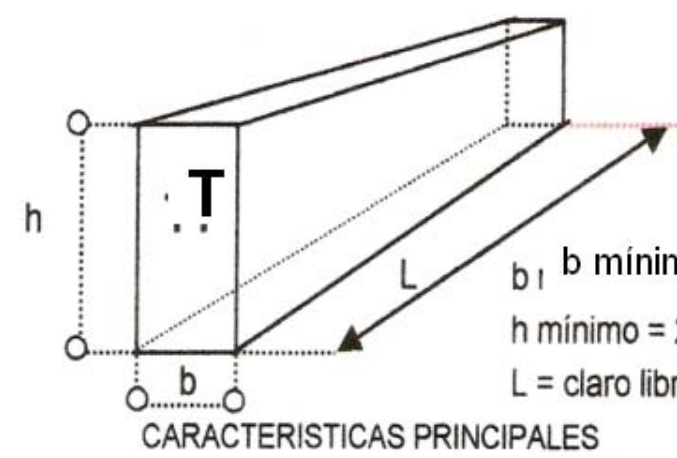
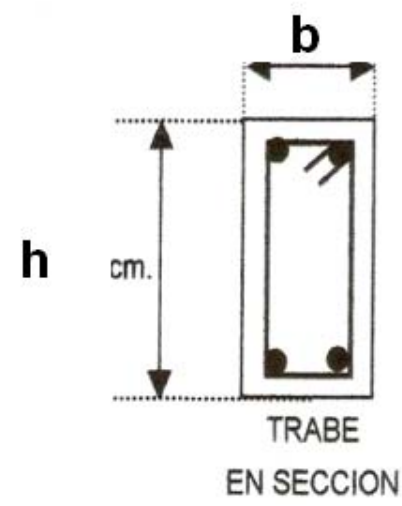
# PREDIMENSIONAMIENTO

5. Columnas
6. Muro de carga
7. Vigüeta y bovedilla
8. Losa T y TT



Elementos prefabricados y no prefabricados

# 1. TRABE



$b \geq b$  mínimo = Ancho del muro  
 $h$  mínimo = 20 cm.  
 $L$  = claro libre > 1.50 m.

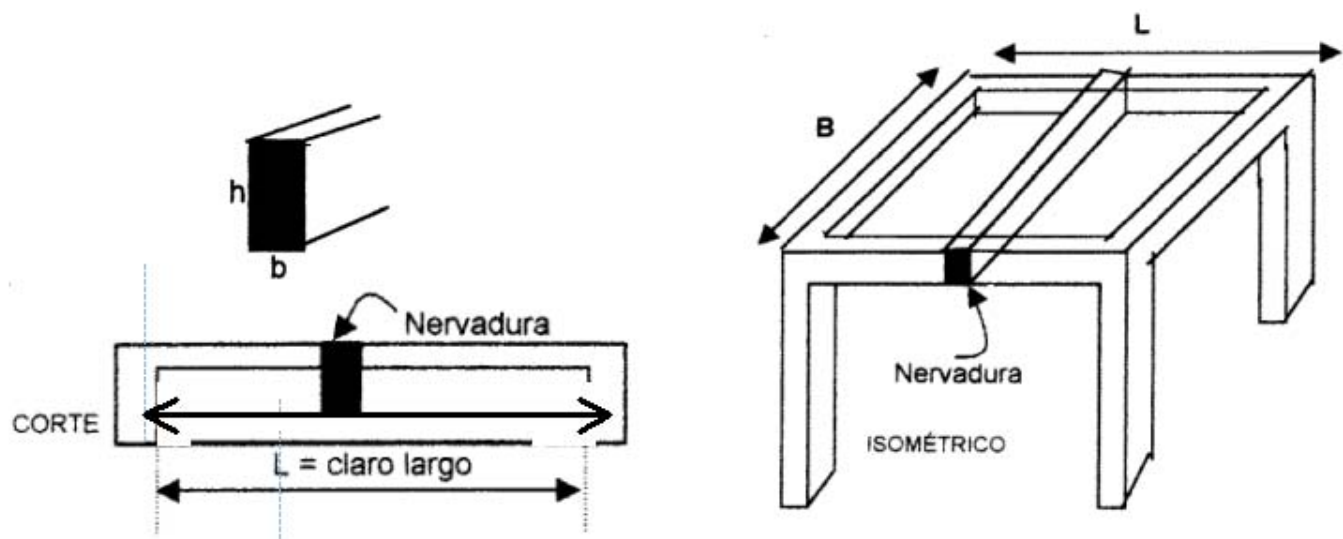
$$b = \frac{L}{24} = \frac{8.00}{24} = 0.33 \text{ m}$$

$$h = \frac{L}{12} = \frac{8.00}{12} = 0.67 \text{ m}$$

Usar.  $b = 35$   
 $h = 65$  T ( 35 x 65 cm )



# 2. NERVADURA

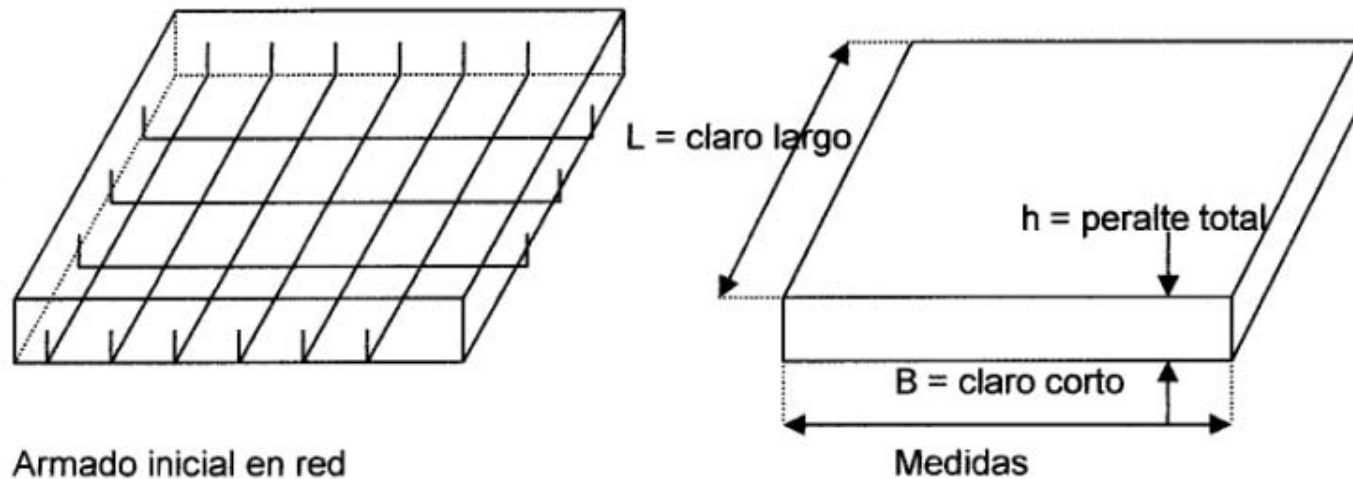


$$b = \frac{B}{30} = \frac{8.00}{30} = 0.27 \text{ m}$$

$$h = \frac{B}{12} = \frac{8.00}{12} = 0.67 \text{ m}$$

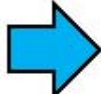
Usar.  $b = 25$   
 $h = 65$  N ( 25 x 65 cm )

# 3. LOSA MACIZA

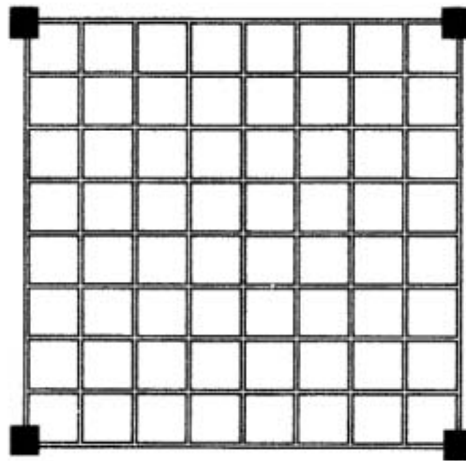


Armado inicial en red

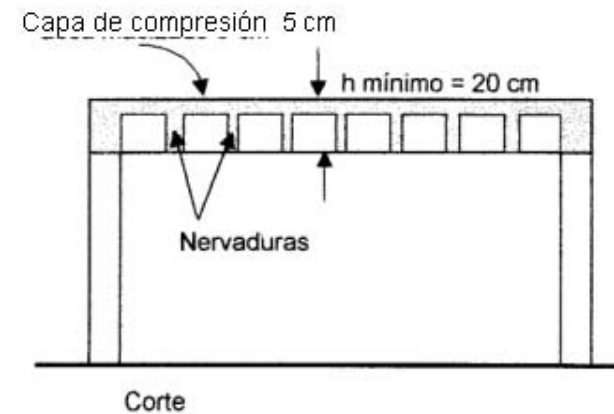
$$h = \frac{(L+B)/2}{40} = \frac{5.00}{40} = 0.13 \text{ m}$$

Usar.  $h = 13$   LM ( 13 cm )

# 4. LOSA RETICULAR



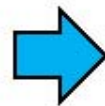
Planta



$$h = \frac{(L+B)/2}{25} = \frac{5.00}{25} = 0.20 \text{ m}$$

Usar.

$$h = 20$$

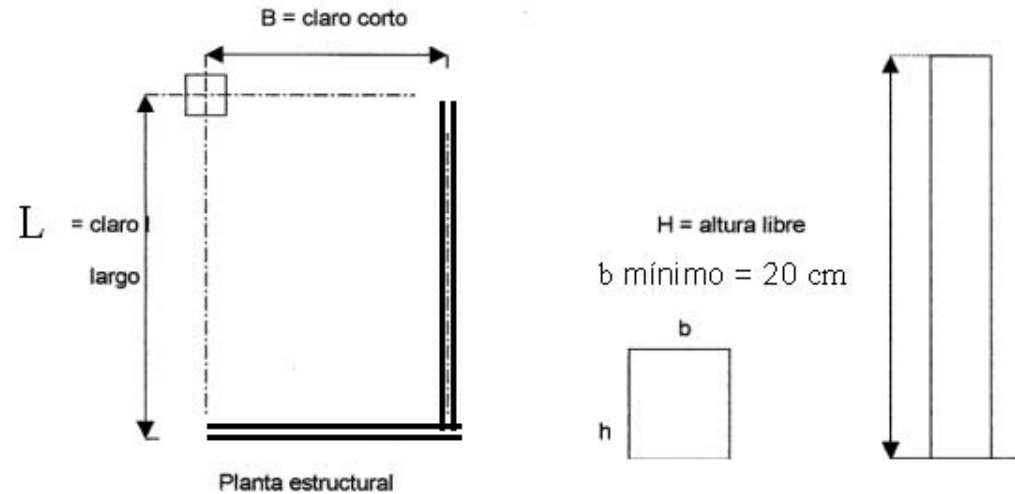


LR ( 20 cm )



# 5. COLUMNA

## Cuadrada y rectangular

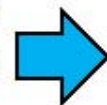


$$b = \frac{B}{15} = \frac{4.00}{15} = 0.27 \text{ m}$$

$$h = \frac{L}{15} = \frac{6.00}{15} = 0.40 \text{ m}$$

$$b \text{ y } h = \frac{H}{15} = \frac{3.00}{15} = 0.20 \text{ m}$$

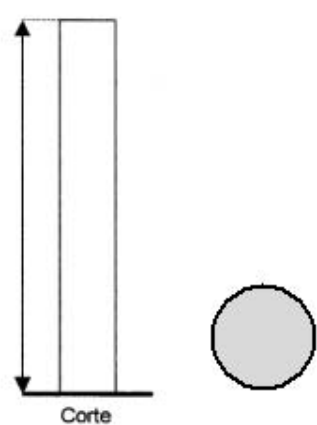
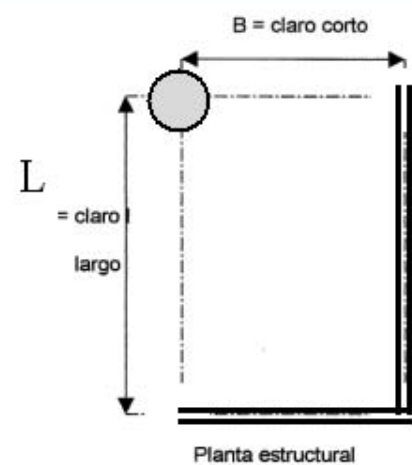
Usar: b = 25  
h = 40



C ( 25 x 40 cm )

# 5. COLUMNA

## Circular

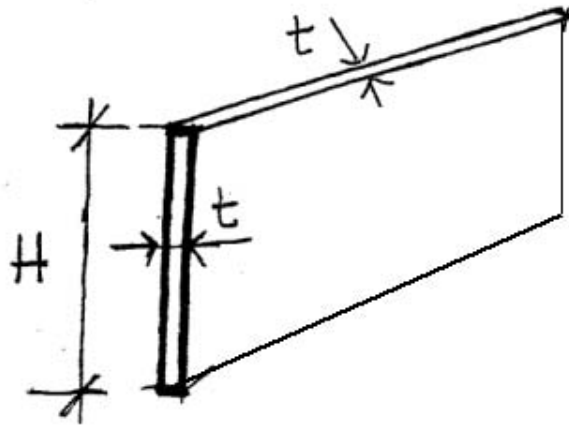


$$D = \frac{(L+B)/2}{15} = \frac{5.00}{15} = 0.33 \text{ m}$$

$$D = \frac{H}{15} = \frac{3.00}{15} = 0.20 \text{ m}$$

Usar:  $D = 35$  C ( 35 cm  $\phi$  )

# 6. MURO DE CARGA

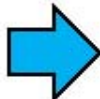


t = espesor del muro de carga

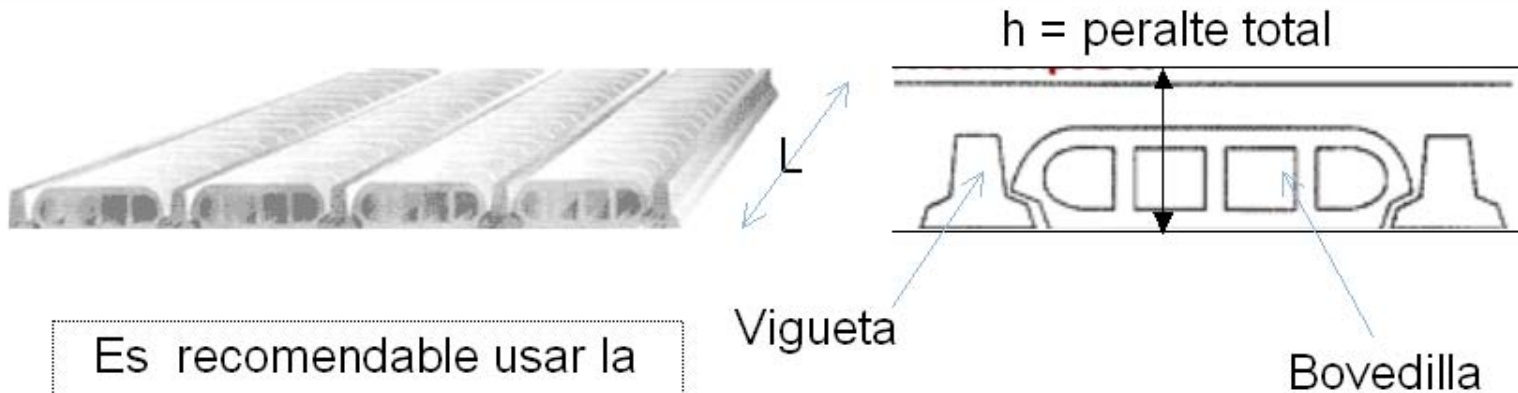
$$t = \frac{H}{20}$$

t mínimo = 10 cm

$$t = \frac{H}{20} = \frac{3.00}{20} = 0.15 \text{ m}$$

Usar: t = 15  M ( 15 cm )

# 7. VIGUETA Y BOVEDILLA

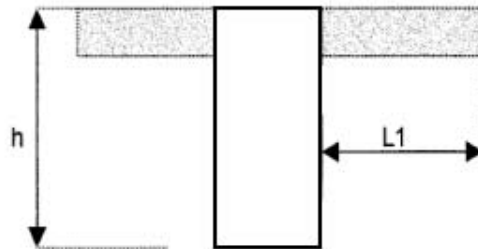


Es recomendable usar la Vigueta, en claros mayores de 4 m.  
Rango: L= 4.00 a 10 m  
h mínimo = 20 cm

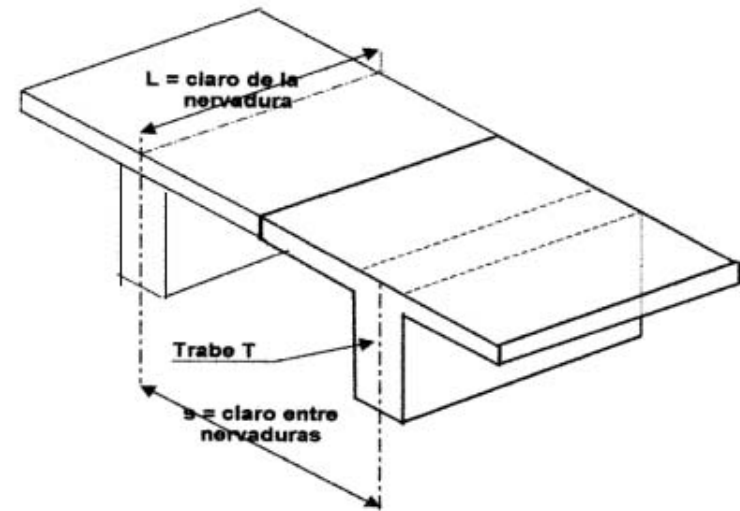
$$h = \frac{L}{30} = \frac{6.00}{30} = 0.20 \text{ m}$$

Usar: h = 20  V y B ( 20 cm )

# 8. LOSA T y TT



Es recomendable usar las losas T y TT, en claros mayores de 12 m.  
Rango: L= 12.00 a 30 m  
h mínimo = 50 cm



$$h = \frac{L}{25} = \frac{12.00}{25} = 0.48 \text{ m}$$

Usar:  $h = 50$   LT ( 50 cm )