

CÁLCULO DE VOLÚMEN DE OBRA



- Lic. Arquitectura
- 5to cuatrimestre
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- TALLER DE CONSTRUCCION DE MATERIALES BASICOS

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Cantidad de excavación

Zapata 1

$$1.25 \times 1.25 \times 1.55 = \underline{2.421875 \text{ m}^3}$$

Planchillo de concreto F'c = 100 kg/cm²
 Concreto

$$100 \text{ kg/cm}^2 = 1.05 \times 1.05 \times 0.05 = \underline{0.055125 \text{ m}^2}$$

Base = 1.05

Longitud = 1.05

Prof = 0.05 \Rightarrow 0.055125 m³ (1.05)
 Desperdicio

F'c = 200 kg/cm²

Base = 1.05

Longitud = 1.05

Alt = 0.20

$$1.05 \times 1.05 \times 0.20 = 0.2205 \text{ m}^3$$

$$\underline{0.231525 \text{ m}^3}$$

Varilla Varilla con ganchos 3/8

Diámetro Varilla Longitudinal

Pobles = 3/8 (0.0254) = 0.001525 x 12

$$L = \frac{1.05}{0.99} + \frac{1.05}{1.12} = 0.1143$$

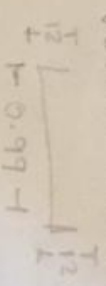
$$= 0.99 + 0.12 + 0.12 = \underline{1.23 \text{ m}}$$

Pras = (1.05 / 0.15) + 1

Tota 1

Pras = 7 + 1 = 8 pras = 9.84 m

Varilla transversal



L = 0.99 + 0.12 + 0.12 = 1.23

Pras = (1.05 / 0.15) + 1

Tota 1

Pras = 7 + 1 = 8 pras = 9.84

$\Sigma = \frac{19.66 \text{ m}}{1.2} = \underline{17.548 \text{ pras}}$
 Desperdicio

Cantidad de excavación Zapata 2

$$1.60 \times 2.70 \times 1.55 = 6.696 \text{ m}^3$$

$$F'c = 100 \text{ kg/cm}^2$$

$$\text{Base} = 1.40$$

$$\text{Long} = 2.50$$

$$\text{Alt} = 0.05$$

$$0.175 \text{ m}^3 \text{ Dependencia} = 0.18375 \text{ m}^3$$

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

$$\text{Base} = 1.40$$

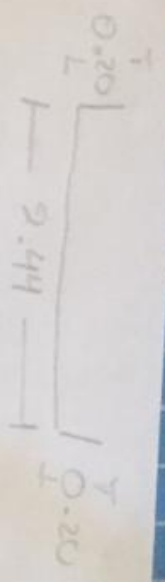
$$\text{Long} = 2.50$$

$$\text{Alt} = 0.25$$

$$0.875 \text{ m}^3 \text{ Dependencia} \downarrow = 0.91875 \text{ m}^3$$

Panillo / Varrillas Corrugadas
Longitudinal

$$\begin{aligned} 1/2 (0.0254) &= 0.6127 (15) \\ &= 0.1905 \\ &= 20 \end{aligned}$$



$$L = 0.20 + 2.44 + 0.20$$

$$L = 2.84 \text{ m}$$

$$P_{\text{ros}} = (2.50 / 0.20) + 1$$

$$P_{\text{ros}} = 12.50 + 1$$

$$= 13.50$$

Varrilla Transversal

$$L = 1.34 + 1.20 = 1.74 \text{ m}$$

$$1/2 (0.0254) = 0.8127 (15)$$

$$= 0.1905$$

$$P_{\text{ros}} = (1.40 / 0.15) + 1$$

$$P_{\text{ros}} = 9.3333 + 1$$

$$P_{\text{ros}} = 10.3333$$

$$\begin{aligned} &(2.84 \times 14 \text{ v}) \\ \text{Total} &= 39.76 \text{ m} \end{aligned}$$

TOTAL
+ Dependencia
55.87 (1.05)
= 56.6708 / 12
Varrilla = 5

$$\begin{aligned} \text{TOTAL} & \\ (1.74 \times 10.3333) & \\ + 17.9799 \text{ m} & \end{aligned}$$

Vanilla #3 c/15

Los carrs.

vanilla vertical

$$3/8(0.0254)(12) = 0.1143 = 12\%$$

$$Pizca = (1.64/0.15) \times 12 \text{ pizas} = 18.04$$

$$1.40 \sqrt{12} = 1.64m$$

Vanilla horizontal.

$$3/8(0.0254)(12) = 0.1143 = 12\%$$

$$\begin{array}{r} 12 \sqrt{\quad} \quad \sqrt{12} \\ 1450 \\ 1,10 \end{array}$$

$$Pizca = (134/0.15) \times 8.9333 = 10 \text{ pizas} = 13.4$$

Desperdicio

18.04

+13.4

$$\frac{31.44(1.07)}{12} = \frac{33.6408}{12} = 3$$