EXAMEN

- Lic. Arquitectura
- 5to cuatrimestre
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- PEDRO ALBERTO GARCIA LOPEZ
- ANALISIS DE ESTRUCTURAS

16/03/2021

Comprobacion

CVC — B 6.75 Long

Areas tributarias

- Losa intermedia

A-1 = (2.8873)(0.635) = 1.8334355

A-2 = (2.7351)(0.635) = 1.7367885

$\Sigma = \frac{3.570224}{6.75\,m} =$ 0.528922074 T/m

- Losa azotea

A-1 = (2.8873)(0.675) = 1.9489275

A-2 = (2.7351)(0.675) = 1.8469425

$\Sigma = \frac{3.79512}{6.75} =$ 0.56224 T/m

- Muros-

Piso 1 = (2.50)(0.27) = 0.675

Piso 2 = (2.50)(0.27) = 0.675

> 1.35 T/m

- Cerramientos-

Piso 1 = (0.15)(0.20)2.4 = 0.072

Piso 2 = (0.15)(0.20)2.4 = 0.072

> 0.144 T/m

$\xi = 2.585162074$

- Base

$$(2.585162074)(1.3) = \frac{3.3607}{87/m} = 0.420088837$$

Por normativa → 0.60 m

- Corona → 0.30 m

- Talud = $\frac{(0.60) - (0.15)}{2}$ = 0.15 m

- Altura = Tan 60° (15) = 25

Por normativa 0.20 m

Comprobacion

eje - 6 Lon 6.75

Areas tributaria

-Losa de entre paso

Area tributaria 1=

A.1 = (2.7136)(0.635) = 1.723136

A.2 = (2.9067)(0.635) = 1.8457545

A.3 = (2.7865)(0.635) = 1.7694275

A.4 = (2.7506)(0.635) = 1.746631

Σ Areas tributarias = $\frac{7.084949}{6.75}$ = 1.049622074 T/m

-Losa de azotea

A.1 = (2.7136)(0.675) = 1.83168

A.2 = (2.9067)(0.675) = 1.9620225

A.3 = (2.7865)(0.675) = 1.8808875

A.4 = (2.7506)(0.675) = 1.856655

Σ = Areas tributarias = $\frac{7.681345}{6.75}$ = 1.137 4

= Muros

Planta Baja = (2.50)(0.27) = 0.675 T/m

Planta alta = (2.50)(0.27) = 0.675 T/m

1.35 T/m

Cerramiento

Piso 1 = (0.15)(0.20) 2.4 = 0.072 > 0.144

Piso 2 = (0.15)(0.20) 2.4 = 0.072

Σ = 3.659362074

- Base =

(3.659362074)(1.3) = $\frac{4.757170696}{8\ T/m}$ = 0.594646337

Base = 60 cm

- Talud

= $\frac{0.60 - 0.30}{2}$ = 0.15 m

- corona = 0.30 m

- Altura

tan 60° (15) = 25.98 cm

Por normativa = 0.60 m

Comprobación

eje – 7 / 6.75

Áreas tributarias

– Losa de entrepiso, Planta 1

A-1 = (2.8872)(0.635) = 1.833372

A-2 = (2.9067)(0.635) = 1.8457545

A-3 = (2.7506)(0.635) = 1.746631

A-4 = (2.7351)(0.635) = 1.7367885

$\Sigma = \frac{7.162546}{6.75} =$ 1.061117926 T/m

– Losa de Azoteas

A-1 = (2.8872)(0.675) = 1.94886

A-2 = (2.9067)(0.675) = 1.9620225

A-3 = (2.7506)(0.675) = 1.856655

A-4 = (2.7351)(0.675) = 1.8461925

$\Sigma = \frac{7.61373}{6.75} =$ 1.127967 T/m

– Muros

Piso 1 = (2.50)(0.27) = 0.675

Piso 2 = (2.50)(0.27) = 0.675

1.35 T/m

- Cerramiento

Piso-1 = (0.15)(0.20)2.4 = 0.072 > 0.144 T/m
Piso-2 = (0.15)(0.20)2.4 = 0.072

Σ total = 3.683077926

- Base

(3.683077926)(1.3) = $\frac{4.788001304}{8\ T/m}$

= 0.598500163

Por normativa = 60 cm //

- Corona -> 0.30 m //

- Altura = Tan 60° x 1.5 = 2.5.9807 //

Por normativa -> 0.20 m //

Comprobacion

Eje 4

- Areas tributarias, Losa entrepiso

Tablero 1 = (2.7866)(0.635) = 1.769491 ✓

Tablero 2 = (2.7866)(0.635) = 1.769491 ✓

$\Sigma = \frac{3.538982}{3.32\ m} = 1.06065958434$

- Losa azotea

Tablero 1 = (2.7866)(0.675) = 1.880955

Tablero 2 = (2.7866)(0.675) = 1.880955

$\Sigma = \frac{3.76191}{3.32} = 1.13310542 2$

= Muros.

Piso 1 (2.50)(0.27) = 0.675 } 1.35 m/

Piso 2 = (2.50)(0.27) = 0.675

-Cenamiento>

P-1 = (0.15)(0.20)2.4 = 0.072 } 0.144 T/m

P-2 = (0.15)(0.20)2.4 = 0.072

$\leq = 3.687765106$

-Base

$(3.687765106)(1.3) = \frac{4.794094638}{8+/m} = 0.599261829$

$= \frac{0.599261829}{1m} = 0.599261829$

Redondado base = 60 cm

-Talud

$= \frac{0.60 - 30}{2} = 0.15$

-Corona (0.30 cm)

Altura

tan 66°(15) = 25.98

Redondeado = 0.60 cm por normativa

Comprobación

ex - A

A-1 = (2.0805) (0.635) = 1.3211175
A-2 = (2.1895) (0.635) = 1.3896975
A-3 = (1.4888) (0.635) = 0.945388
A-4 = (1.6103) (0.635) = 1.0225405
A-5 = (1.4666) (0.635) = 0.931291
A-6 = (0.5028) (0.635) = 0.319278

Azotea

A1 = (2.0805)(0.675) = 1.4043375
A2 = (2.1895)(0.675) = 1.4779125
A3 = (1.4888)(0.675) = 1.00494
A4 = (1.6103)(0.675) = 1.0869525
A5 = (1.4666)(0.675) = 0.989955
A6 = (0.5028)(0.675) = 0.33939

$\Sigma = \frac{6.3034875}{14.80} = 0.425911317$ T/m²

Muros

Piso 1 = (2.50)(0.27) = 0.675
Piso 2 = (2.50)(0.27) = 0.675

$\Sigma = \frac{5.9293125}{14.80} = 0.400629223$ T/m²

1.35 T/m

Cerramiento

Piso 1 = (0.75)(0.20)(2.41) = 0.072
Piso 2 = (0.75)(0.20)(2.41) = 0.072

0.144 T/m

$\Sigma = 2.320541311$

- Base

$(2.320541311)(1.3) = 3.016703704$ //

Por normativa → 0.60 m //

- Corona → 0.30 m //

- Talud $= \frac{(0.60) - (0.15)}{2} =$ 0.15 m //

- Altura $= \tan 60^\circ (15) = 25$

Por normativa = 0.60 m //

Eje 3 Comprobaciones

Areas tributarias Losa entrepiso

Tablero 1 = (0.9380)(0.635) = 0.595563

Tablero 2 = (0.5679)(0.635) = 0.360665

Tablero 3 (2.7602)(0.635) = 1.752927

$\Sigma = \frac{2.7089735}{3.43} = 0.789788196$

Losa azotea

Tablero 1 (0.9380)(0.675) = 0.63315

Tablero 2 (0.5679)(0.675) = 0.3833325

Tablero 3 (2.7602)(0.675) = 1.863135

$\Sigma = \frac{2.8796175}{3.43} = 0.839538629$

- Muro

Piso 1 = (2.50)(0.27) = 0.675 T/m

Piso 2 = (2.50)(0.27) = 0.675 T/m > 1.35 T/m

- Cerramiento

Piso 1 = (0.15)(0.20) 2.4 = 0.072

0.144

Piso 2 = (0.15)(0.20) 2.4 = 0.072

$\Sigma = 3.12132632$

Base

$E = (3.121326821)(1.3) = \frac{3.121326821}{8\ t/m} = 0.390165852$

Redondeando $\frac{0.390165852}{1\ m} = 0.390165852 \rightarrow 60\ cm$

Corona = 0.30

$= \frac{0.60 - 0.30}{2} = 0.15$

Altura = Tan 60° (15) = 25.9807

Redondeado = 0.60 cm

Talud =

$\frac{0.60 - 0.30}{2} = 0.15$

Comprobación

Long = 3.43

eje 5

- Losa entre piso

Area tributarias

=1=(2.7602)(0.635) = 1.752727

2 = (2.7136)(0.635) = 1.723136

Σ areas T = $\frac{3.475863}{3.43}$ = 1.013371137

- Losa de azotea

Tablero 1 = (2.7602)(0.665) = 1.835533

Tablero 2 = (2.7136)(0.665) = 1.804544

Σ Tablero = $\frac{3.640077}{3.43m}$ = 1.061248939

- Muros

Piso 1 = (2.50 m)(0.27) = 0.675 T/m

Piso 2 = (2.50 m)(0.27) = 0.675 T/m

Cerramientos

Piso 1 = (0.15)( ) = 0.072 T/m > 0.144 T

Piso 2 = (0.15)( ) = 0.078

$\Sigma = 3.568840527$

— Base

$(3.568840527)(1.3) = \frac{4.639492685}{8.7/m} = 0.5799$

Redondeado = 0.60 cm Base

— Talud

$t = \frac{B-C}{2} = T = \frac{0.60-0.30}{2} = 0.15$ cm

— Corona

$C = 0.30$ m

— Altura

$H = \tan 60° \times \text{Vuelo}$

$H = \tan 60° (15) = 25.98$ cm

$= 0.60$ m por normativa

Redondeado =

Comprobaciones

Eje 1 .. Áreas Tributarias

- Losa de entrepiso

Área tributaria tablero 1 = A = (0.5028 m²) • L.E (0.635 T/m²)

= (0.5028 m²)(0.635 T/m) = 0.319278 T/m²

Tablero 2 = (1.8645 m²)(0.635 T/m) = 1.1839575 T/m²

Σ Áreas T = 1.5032355 m² / 6.75 m = 0.222701555

- Losa de azotea

Tablero 1 = (0.5028 m²)(0.665T) = 0.334362 T/m²

Tablero 2 = (1.8645 m²)(0.665T) = 1.2398925

Σ Áreas = 1.5742545 / 6.75 m = 0.233222888 T/m

- Muros -

Piso 1

(2.50 m)(0.27) = 0.675 T/m

Piso 2 = 0.675 T/m

- Cerramiento

C-1

(0.15 m)(0.20) 2.4 = 0.072

Cerramiento 2 = (0.15)(0.20) 2.4 = 0.072

1.35

0.144 T/m

Altura = Tang 60°

Redondeado = (0.60 cm)

$\varepsilon = 1.94992394\overline{3}$

— Base

$(1.94992394\overline{3})(1.3) = \frac{2.534901126}{8\ T/m} = 0.31686264$

$= \frac{0.31686264}{1m} = 0.31686264$

Redondeado Base = 60 cm

— Talud

$= T = \frac{B-C}{2}$

$= T = \frac{0.60 - 0.30}{2} = \frac{0.30}{2} = 0.15$

Talud = 0.15 cm

Corona = 30 cm

Altura =

$H = \tan 60° \times$ Vuelo

$H = \tan 60° \times (15) = 25.98$

= 60 cm por seguridad

Comprobaciones
eje - 2

Areas tributarias

Losa entre piso Planta 1

Tablero 1 = $(0.9289\ m^2)(0.635\ T/m) = 0.5898515\ T/m$

Tablero 2 = $(0.5679\ m^2)(0.635\ T/m) = 0.3606165\ T/m$

Tablero 3 = $(2.7866\ m^2)(0.635\ T/m) = 1.769491$

Tablero 4 = $(1.9275)(0.635) = 1.2239625$

Tablero 5 = $(1.8645)(0.635) = 1.1839575$

$\Sigma = \frac{5.127879}{6.75} = 0.759685777$

Losa azotea

Tablero 1 $(0.9289\ m^2)(0.675\ T/m) = 0.6270075\ T/m^2$

Tablero 2 = $(0.5679\ m^2)(0.675) = 0.3833\ T/m^2$

Tablero 3 $(2.7866\ m^2)(0.675) = 1.880955\ T/m^2$

Tablero 4 = $(1.9275)(0.675) = 1.3010625\ T/m^2$

Tablero 5 = $(1.8645)(0.675) = 1.2585375\ T/m^2$

$\Sigma = \frac{5.4508625}{6.75} = 0.807535185$

Muros

Piso 1 = (2.50)(0.27) = 0.6757 T/m

Piso 2 = (2.50)(0.27) = 0.6757 T/m

1.35 T/m

Ceramientos

Piso 1

(0.15m)(0.20)2.4 = 0.072

Piso 2 = (0.15)(0.20)(2.4) = 0.072

Σ = 3.061220957 m

- Base

$\Sigma = (3.061220957)(1.3) = \frac{3.979587244}{8\ T/m} = 0.4974$ //

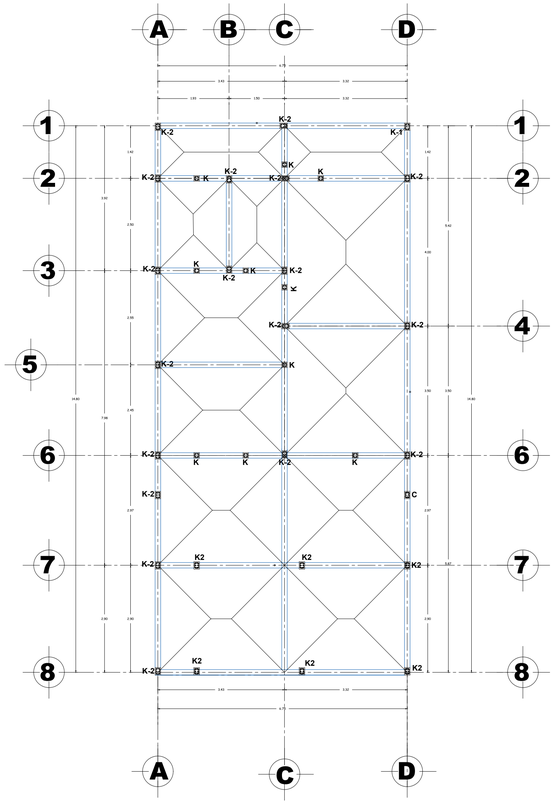
Redondeado $\frac{0.4974}{1} \neq 0.4974 \rightarrow$ 60 cm

- Coronal = 0.30 talud

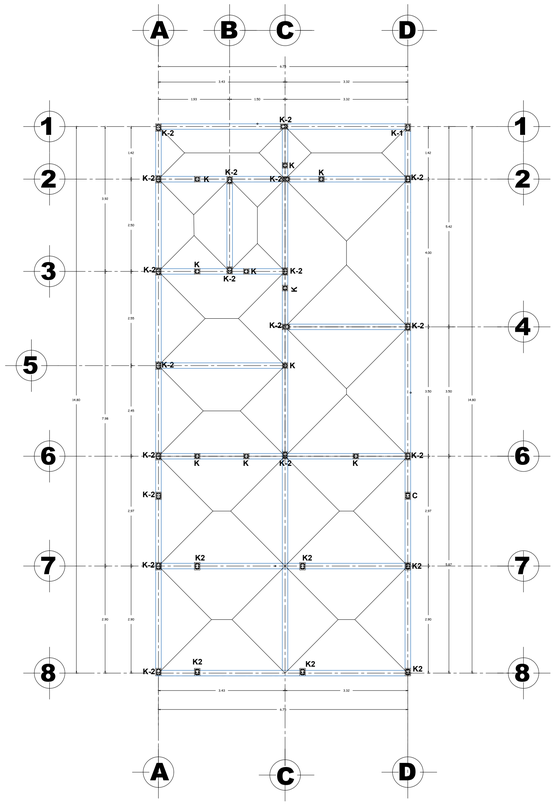
$= \frac{0.60 - 0.30}{2} = 0.15$ //

> Altura = Tang 60° x 15 = 25.9807 //

Redondeado = 0.60 cm



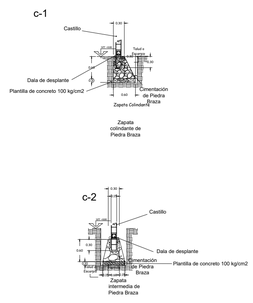
PLANTA DE CASTILLOS Y AREAS TRIBUTARIAS
PLANTA BAJA

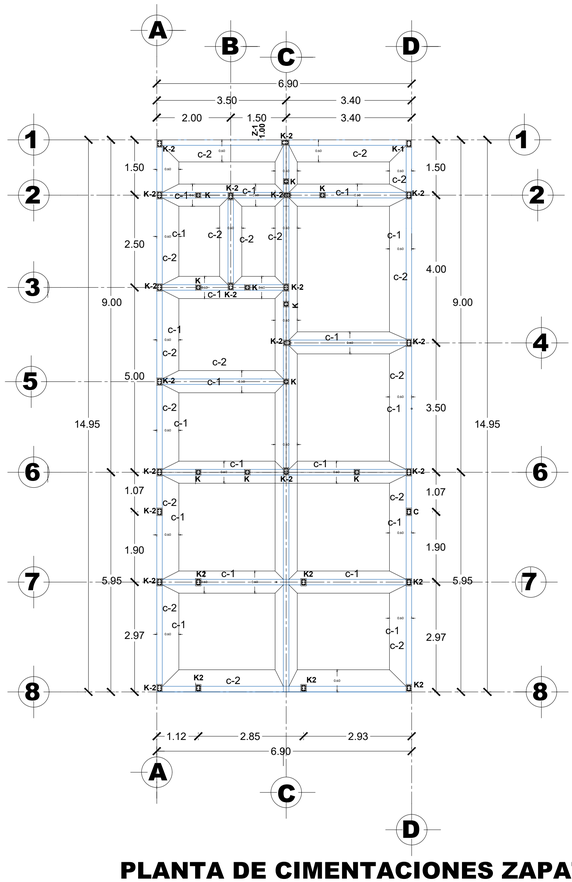


PLANTA DE CASTILLOS Y AREAS TRIBUTARIAS
PLANTA ALTA

castillos

Detalle del cimiento
con dimensiones y especificaciones





PLANTA DE CIMENTACIONES ZAPATAS