

Obra : TPG [Trabajo Práctico General]
 Planta : SM [s/WT2]

Cálculo de columnas
 $\sigma'_{bk} = 210 \text{ Kg/cm}^2$ $\beta_s = 4200 \text{ Kg/cm}^2$
 Altura = 2.50m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í	sep	OBSERVACIONES
44	0.0	1.0	1.3	0.0	0.0	0.4	2.7	0.5 0.5	600	a 30 b 20	1.5 0.5	4.5	4 0	12 0	6 0	14	
45	0.0	1.6	4.1	3.5	0.0	0.2	9.4	0.0 0.5	400	a 20 b 20	0.1 0.0	4.5	4 0	12 0	6 0	14	
46	0.0	4.1	1.6	3.5	0.0	0.2	9.4	0.0 0.5	400	a 20 b 20	0.1 0.0	4.5	4 0	12 0	6 0	14	
47	0.0	1.0	1.3	0.0	0.0	0.4	2.7	0.5 0.5	600	a 30 b 20	1.5 0.5	4.5	4 0	12 0	6 0	14	
54	0.0	1.5	0.2	1.3	0.0	0.2	3.3	0.0 0.5	400	a 20 b 20	1.4 0.0	4.5	4 0	12 0	6 0	14	
55D	0.0	1.6	4.1	3.5	0.0	0.3	9.5	0.0 0.0	450	a 30 b 15	0.0 0.0	4.5	4 0	12 0	6 0	14	
56D	0.0	1.6	4.1	3.5	0.0	0.3	9.5	0.0 0.5	450	a 30 b 15	1.7 0.0	4.5	4 0	12 0	6 0	14	
57	0.0	1.5	0.2	1.3	0.0	0.2	3.3	0.0 0.5	400	a 20 b 20	1.4 0.0	4.5	4 0	12 0	6 0	14	

Cálculo de columnas

Obra :TPG [Trabajo Práctico General]

$\sigma'_{bk} = 210 \text{ Kg/cm}^2$ $\beta_s = 4200 \text{ Kg/cm}^2$

Planta : SRA [s/WT2]

Altura = 1.50m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í sep	OBSERVACIONES
43	0.0	10.0	0.0	0.0	0.0	0.2	10.2	0.0 0.0	600	a 20 b 30	0.0 0.0	4.5	4 0	12 0	6 14	
44	4.4	10.0	5.0	0.0	0.0	0.2	19.6	0.5 0.5	600	a 30 b 20	0.0 0.0	4.5	4 0	12 0	6 14	
45	9.2	4.0	2.0	2.0	0.0	0.7	18.0	0.0 0.5	2000	a 20 b 100	0.0 0.0	10.0	2 8	12 12	6 14	
46	9.2	4.0	2.0	3.0	0.0	0.7	19.0	0.0 0.5	2000	a 20 b 100	0.0 0.0	10.0	2 8	12 12	6 14	
47	4.4	2.0	5.0	0.0	0.0	0.2	11.6	0.5 0.5	600	a 30 b 20	0.0 0.0	4.5	4 0	12 0	6 14	
55A	0.0	2.0	2.0	2.0	2.0	1.1	9.1	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
55B	0.0	2.0	2.0	2.0	2.0	1.4	9.4	0.0 0.0	3990	a 266 b 15	0.0 0.0	20.0	18 0	12 0	6 14	
55C	0.0	4.0	4.0	4.0	0.0	1.3	13.3	0.0 0.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
56A	0.0	2.0	2.0	2.0	2.0	1.1	9.1	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
56B	0.0	10.0	2.0	2.0	2.0	1.4	17.4	7.0 0.0	3990	a 266 b 15	0.0 0.0	20.0	18 0	12 0	6 14	
56C	0.0	2.0	2.0	2.0	2.0	1.3	9.3	0.0 0.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
56D	9.3	4.0	0.0	0.0	2.0	0.9	16.2	0.0 0.5	2460	a 164 b 15	0.0 0.0	12.3	10 2	12 12	6 14	
56E	0.0	0.9	8.1	0.0	5.2	1.3	15.5	0.0 1.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
63	0.0	10.0	0.0	0.0	0.0	0.2	10.2	0.0 0.5	600	a 20 b 30	0.0 0.0	4.5	4 0	12 0	6 14	

Cálculo de columnas

Obra :TPG [Trabajo Práctico General]

$\sigma'_{bk} = 210 \text{ Kg/cm}^2$ $\beta_s = 4200 \text{ Kg/cm}^2$

Planta : 09° [s/WT2]

Altura = 2.80m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í sep	OBSERVACIONES
43	10.2	4.3	6.2	4.8	4.8	0.5	30.9	0.0 0.0	800	a 20 b 40	0.0 0.0	4.5	4 0	12 0	6 14	
44	19.6	2.8	7.5	4.5	0.0	0.5	34.9	0.5 0.0	800	a 40 b 20	0.0 0.0	4.5	4 0	12 0	6 14	
45	18.0	4.5	5.7	3.9	0.0	1.2	33.3	0.0 1.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
46	19.0	5.7	4.5	3.9	0.0	1.2	34.3	0.0 1.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
47	11.6	4.5	3.0	7.6	0.0	0.5	27.2	0.5 0.0	800	a 40 b 20	0.0 0.0	4.5	4 0	12 0	6 14	
55A	9.1	0.5	0.6	0.0	1.3	2.1	13.7	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
55B	9.4	15.5	0.5	1.4	0.0	2.7	29.5	16.4 0.0	3990	a 266 b 15	0.0 0.0	20.0	18 0	12 0	6 14	
55C	13.3	6.7	3.0	8.1	0.9	2.5	34.5	0.0 1.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
56A	9.1	0.9	0.5	0.6	1.4	2.1	14.7	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
56B	17.4	7.0	0.5	0.0	1.3	2.7	28.9	14.0 0.0	3990	a 266 b 15	0.0 0.0	20.0	18 0	12 0	6 14	
56C	9.3	5.1	0.0	0.0	0.0	2.5	16.9	0.0 0.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
56D	16.2	4.1	0.0	0.0	0.0	1.7	21.9	0.0 0.0	2460	a 164 b 15	0.0 0.0	12.3	10 2	12 12	6 14	
56E	15.5	0.9	8.1	0.0	5.2	2.5	32.2	0.0 1.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
63	0.0	3.1	6.3	0.0	0.0	0.5	9.9	0.0 0.0	800	a 20 b 40	0.0 0.0	4.5	4 0	12 0	6 14	
93	0.0	2.5	1.7	0.0	0.0	0.5	4.7	0.5 0.5	800	a 40 b 20	0.9 0.0	4.5	4 0	12 0	6 14	
94	0.0	3.9	3.1	5.9	0.0	1.3	14.2	0.0 1.0	2000	a 100 b 20	0.4 0.0	10.0	8 2	12 12	6 14	
95	0.0	1.6	3.0	0.0	0.0	0.5	5.1	0.5 0.5	800	a 40 b 20	0.8 0.0	4.5	4 0	12 0	6 14	

Cálculo de columnas

Obra :TPG [Trabajo Práctico General]

$\sigma'_{bk} = 210 \text{ Kg/cm}^2$ $\beta_s = 4200 \text{ Kg/cm}^2$

Planta : SS02° [s/WT2]

Altura = 3.50m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í sep	OBSERVACIONES
02	35.5	7.1	0.0	0.0	0.0	0.8	43.4	0.5 0.5	1000	a 40 b 25	0.0 0.0	5.0	4 0	12 0	6 14	
03	97.5	5.9	0.0	0.0	0.0	1.3	104.6	0.0 0.5	1500	a 60 b 25	1.0 0.0	8.8	8 0	12 0	6 14	
04	191.3	15.1	0.0	0.0	0.0	2.1	208.5	0.0 0.5	2500	a 100 b 25	18.0 4.8	18.0	16 0	12 0	6 14	
05	95.0	16.3	0.0	0.0	0.0	1.3	112.6	0.5 1.0	1500	a 60 b 25	7.8 0.0	9.5	8 0	12 0	6 14	
06	97.0	16.3	0.0	0.0	0.0	1.3	114.6	0.5 1.0	1500	a 60 b 25	8.9 0.0	9.6	10 0	12 0	6 14	
07	120.2	6.4	0.0	0.0	0.0	1.3	127.9	0.0 0.5	1500	a 60 b 25	13.6 5.4	13.6	12 2	12 12	6 14	
08	161.8	12.8	0.0	0.0	0.0	2.1	176.7	0.0 2.0	2500	a 100 b 25	9.5 0.0	14.8	14 0	12 0	6 14	
09	52.6	0.0	0.0	0.0	0.0	0.8	53.4	0.5 0.5	1000	a 40 b 25	0.0 0.0	5.0	4 0	12 0	6 14	
21	47.7	9.8	8.9	18.8	9.8	1.5	96.5	2.0 2.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
22	126.2	5.1	51.5	11.8	0.0	1.5	196.2	2.0 2.0	1800	a 30 b 60	32.1 40.7	40.7	4 14	25 20	8 24	Cuantia 3.53%
23	259.5	134.8	9.8	0.0	0.0	7.6	411.7	2.0 2.0	9000	a 60 b 150	0.0 0.0	45.0	12 28	12 12	6 14	
27	143.4	10.4	9.2	0.0	0.0	1.5	164.6	0.0 0.0	1800	a 60 b 30	15.0 12.2	15.0	14 4	12 16	6 14	
29	67.3	0.0	0.0	0.0	0.0	3.3	70.6	0.0 0.0	3900	a 130 b 30	0.0 0.0	19.5	14 4	12 12	6 14	
44	278.8	13.4	21.3	0.0	0.0	2.5	316.0	0.5 0.0	3000	a 100 b 30	47.2 39.7	47.2	16 6	20 25	8 24	Cuantia 2.66%
45	216.5	12.5	2.1	16.3	0.0	2.5	249.9	0.0 1.0	3000	a 30 b 100	6.6 11.9	21.0	4 14	12 12	6 14	
46	217.5	12.5	2.1	16.3	0.0	2.5	250.9	0.0 1.0	3000	a 30 b 100	7.1 12.4	21.1	4 14	12 12	6 14	
47	205.4	16.6	13.0	0.0	0.0	2.5	237.5	0.5 0.0	3000	a 100 b 30	5.1 0.0	20.0	18 0	12 0	6 14	

Cálculo de columnas

Obra :TPG [Trabajo Práctico General]

$\sigma'_{bk} = 210 \text{ Kg/cm}^2$ $\beta_s = 4200 \text{ Kg/cm}^2$

Planta : SS02° [s/WT2]

Altura = 3.50m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í sep	OBSERVACIONES
48	253.8	12.9	18.4	0.0	0.0	2.5	287.6	0.0 2.0	3000	a 100 b 30	40.9 24.8	40.9	20 4	16 25	6 19	Cuantia 1.99%
49	116.5	0.0	0.0	0.0	0.0	2.1	118.6	0.5 0.0	2500	a 25 b 100	0.0 0.0	12.5	2 10	12 12	6 14	
55A	59.9	1.0	0.0	0.0	1.3	2.6	64.9	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
55B	240.6	24.2	1.0	0.0	1.4	3.4	270.5	99.0 0.0	3990	a 266 b 15	18.2 17.2	22.7	16 4	12 25	6 14	
55C	265.7	12.8	6.9	9.8	0.9	3.1	299.2	0.0 1.0	3720	a 15 b 248	0.0 49.5	49.5	0 44	0 12	6 14	
56A	70.5	0.9	1.0	0.0	1.0	2.6	76.1	0.0 0.0	3150	a 210 b 15	0.0 0.0	15.8	14 0	12 0	6 14	
56B	138.8	1.0	0.0	0.0	1.3	3.4	144.4	49.0 0.0	3990	a 266 b 15	0.0 0.0	20.0	18 0	12 0	6 14	
56C	100.1	0.9	5.6	2.0	0.0	3.1	111.7	0.0 0.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
56D	90.5	10.1	0.0	0.0	0.0	2.1	102.7	0.0 0.0	2460	a 164 b 15	0.0 0.0	12.3	10 2	12 12	6 14	
56E	200.7	0.9	8.1	0.0	5.2	3.1	218.0	0.0 1.0	3720	a 15 b 248	0.0 0.0	18.6	2 14	12 12	6 14	
58	152.7	10.1	9.1	0.0	0.0	2.5	174.4	0.0 0.0	3000	a 100 b 30	0.0 0.0	15.0	10 4	12 12	6 14	
59	171.1	10.4	8.0	0.0	0.0	1.6	191.0	2.0 0.0	1875	a 25 b 75	22.0 42.3	42.3	2 14	25 20	8 24	Cuantia 2.87%
60	35.7	16.5	9.4	8.1	0.0	1.5	71.2	0.0 1.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
61	38.2	12.6	15.8	8.1	0.0	1.5	76.2	2.0 1.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
60A	20.4	5.6	8.6	5.8	0.0	1.5	41.9	2.0 2.0	1800	a 30 b 60	0.0 0.0	9.0	4 4	12 12	6 14	
62	108.1	36.8	9.0	0.0	0.0	1.5	155.4	2.0 2.0	1800	a 30 b 60	11.0 18.8	18.8	4 10	12 16	6 19	
63	249.4	9.8	134.8	0.0	0.0	7.6	401.6	2.0 2.0	9000	a 60 b 150	0.0 0.0	45.0	12 28	12 12	6 14	

Cálculo de columnas

Obra :TPG [Trabajo Práctico General]

$\sigma'_{bk} = 210 \text{ Kg/cm}^2$

$\beta_s = 4200 \text{ Kg/cm}^2$

Planta : SS02° [s/WT2]

Altura = 3.50m

Pos.	Nsup t	Rv1 t	Rv2 t	Rv3 t	Rv4 t	P.p t	Ntot. t	M tm	Sup. cm ²	Lados cm	Fe cm ²	Fmin cm ²	cant	í	í	sep	OBSERVACIONES
77	122.3	2.9	2.4	11.4	0.0	1.3	140.2	0.0 0.0	1500	a 60 b 25	17.5 11.8	17.5	10 2	16 16	6	19	Cuantia 1.61%
78	134.9	2.4	2.9	8.1	0.0	2.5	150.8	0.0 2.0	3000	a 100 b 30	0.0 0.0	15.0	10 4	12 12	6	14	
79	119.3	1.9	7.1	0.0	0.0	2.7	131.1	0.5 0.0	3250	a 130 b 25	0.0 0.0	16.3	12 2	12 12	6	14	
93	56.0	5.9	0.0	0.0	0.0	0.8	62.7	0.5 0.5	1000	a 40 b 25	0.0 0.0	5.3	4 2	12 12	6	14	
94	152.5	7.2	0.0	0.0	0.0	2.1	161.8	0.0 1.0	2500	a 100 b 25	0.0 0.0	13.6	10 2	12 12	6	14	
95	72.5	6.9	0.0	0.0	0.0	1.3	80.7	0.5 0.5	1500	a 60 b 25	0.0 0.0	7.5	6 2	12 12	6	14	
96	80.3	4.7	0.0	0.0	0.0	1.3	86.3	0.5 1.0	1500	a 60 b 25	0.0 0.0	7.5	6 2	12 12	6	14	
97	75.8	0.0	0.0	0.0	0.0	1.3	77.1	0.0 0.0	1500	a 60 b 25	0.0 0.0	7.5	6 2	12 12	6	14	
98	80.0	0.0	0.0	0.0	0.0	2.1	82.1	0.0 0.0	2500	a 100 b 25	0.0 0.0	12.5	10 2	12 12	6	14	
99	44.6	0.0	0.0	0.0	0.0	0.8	45.4	0.5 0.5	1000	a 40 b 25	0.0 0.0	5.0	4 0	12 0	6	14	