

DIMENSIONAMENTO DAS VIGAS

Cliente: Mun. Barra do Rio Azul
 Data : 01-01-2002
 Obra : Habitação social modelo 2 vigas do forro
 Arquivo : HSOCVCOB\HSOCVCOB

CONFIGURACAO DE CALCULO

- Concreto fck : 25 MPa ACO-CA 50 A e 60 B
- Armaduras :
 - . #t < 4.2 5 > c/ espacamento variavel
 - . #l < 6.3 8 10 > c/ combinacao de bitolas
 - . montagem de # 6.3 e pele de # 6.3
- Vigas serao Calculadas :
 - . Nao adicionando Peso Proprio da viga no Carregamento
 - . Considerando reducao do cortante (item 4.1.4.3 NBR-6118)
 - . Considerando reducao dos momentos nos apoios (item 3.2.2.3.C NBR-6118)
 - . Cobrimento = 2 cm, d'= 4 cm, d''= 4 cm

Quantitativos para as 13 Vigas - arquivo: HSOCVCOB\HSOCVCOB

Volume de concreto 1.73 m3
 Area de formas 31.25 m2

Resumo de Acos

Bitola	L(m)	Peso(kgf)
CA - 50 A		
# 6.3	263	64.4
CA - 60 B		
# 4.2	381	41.4

V1 (14 x 25) 2 apoios HSOCVCOB\HSOCVCOB

Mep 1.2 -1.3
 1 ----- 2

 1 ----- 2
 Mvao 1.8

 Arm sup
 1 ----- 2
 Arm inf 0.52
 2 # 6.3

 1 ----- 2
 Reac 2.45 2.45
 Corte * 2.2 2.2
 Ast 1.9 1.9 1.9

 Estribo # 4.2
 c/10
 Trechos 3

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V2 (14 x 25) 3 apoios HSOCVCOB\HSOCVCOB

Mep .2 -.3 .5 -.6

1 ----- 2 ----- 3

Mapoio .6

L barra .57 1.6

1 ----- 2 ----- 3

Mvao ** .2 .5

2 # 6.3 2 # 6.3

Arm sup 0.52 0.52

1 ----- 2 ----- 3

Arm inf 0.52

2 # 6.3

1 ----- 2 ----- 3

Reac .53 3.17 1.38

Corte * .3 1.1 1.6 1.1

Ast 1.9 1.9 1.9 1.9 1.9 1.9

Estribo # 4.2 # 4.2

c/10 c/10

Trechos 1.3 2

** Momento no vao de acordo com item 3.2.2.3.A.a (NBR-6118)

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V3=V5 (14 x 25) 2 apoios HSOCVCOB\HSOCVCOB

Mep 1 -1.1

1 ----- 2

1 ----- 2

Mvao 1.5

Arm sup

1 ----- 2

Arm inf 0.52

2 # 6.3

1 ----- 2

Reac 2.07 2.07

Corte * 1.9 1.9

Ast 1.9 1.9 1.9

Estribo # 4.2

c/10

Trechos 3

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V4=V6 (14 x 25) 2 apoios HSOCVCOB\HSOCVCOB

Mep .5 -.6

1 ----- 2

1 ----- 2

Mvao .7

Arm sup

1 ----- 2

Arm inf 0.52

2 # 6.3

1 ----- 2

Reac 1.66 1.66

Corte * 1.4 1.4

Ast 1.9 1.9 1.9

Estribo # 4.2

c/10

Trechos 2

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V7 (14 x 25) 2 apoios HSOCVCOB\HSOCVCOB

Mep .2 -.3

1 ----- 2

1 ----- 2

Mvao .4

Arm sup
1 ----- 2
Arm inf 0.52
 2 # 6.3
1 ----- 2
Reac 1.32 1.32
Corte * 1 1
Ast 1.9 1.9 1.9

Estribo # 4.2
 c/10
Trechos 1.2

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V8 (14 x 25) 3 apoios HSOCVCOB\HSOCVCOB

Mep 1.5 -1.6 1.4 -1.5
----- 1 ----- 2 ----- 3

Mapoio 4.4 .9
L barra 1.2 1.2 .61
----- 1 ----- 2 ----- 3
Mvao ** .8 1.6

 3 # 6.3 2 # 6.3 2 # 6.3
Arm sup 0.71 0.52 0.52
----- 1 ----- 2 ----- 3
Arm inf 0.52
 2 # 6.3
----- 1 ----- 2 ----- 3
Reac 10.03 5.76 2.96
Corte * 4.8 4.4 1.7 3.3 2.6
Ast 1.9 1.9 1.9 1.9 1.9 1.9 1.9

Estribo # 4.2 # 4.2 # 4.2
 c/10 c/10 c/10
Trechos 1.2 2.6 2.5

** Momento no vao de acordo com item 3.2.2.3.A.a (NBR-6118)

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V9 (14 x 25) 5 apoios HSOCVCOB\HSOCVCOB

Mep .6 - .7 .3 -.4 1.9 -2 2.1 -2.2
1 ----- 2 ----- 3 ----- 4 ----- 5

Mapoio .5 1 2.4
L barra .7 .57 .57 .62 .87 .75
1 ----- 2 ----- 3 ----- 4 ----- 5
Mvao .6 ** .2 1.2 2.1

 2 # 6.3 2 # 6.3 2 # 6.3 2 # 6.3
Arm sup 0.52 0.52 0.52 0.52
1 ----- 2 ----- 3 ----- 4 ----- 5
Arm inf 0.52 0.52 0.52
 2 # 6.3 2 # 6.3 2 # 6.3
1 ----- 2 ----- 3 ----- 4 ----- 5
Reac 1.96 3.82 5.35 8.93 3.23
Corte * 1.9 2.1 1 1.7 3 3.9 4.3 2.9
Ast 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9

Estribo # 4.2 # 4.2 # 4.2 # 4.2
 c/10 c/10 c/10 c/10
Trechos 1.8 1.3 3 3.2

** Momento no vao de acordo com item 3.2.2.3.A.a (NBR-6118)

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V10 (14 x 25) 2 apoios HSOCVCOB\HSOCVCOB

Mep .6 - .7
1 ----- 2

1 ----- 2
Mvao 1

Arm sup
1 ----- 2
Arm inf 0.52
 2 # 6.3

1 ----- 2
Reac 2.23 2.23
Corte * 1.9 1.9
Ast 1.9 1.9 1.9

Estribo # 4.2
 c/10
Trechos 1.8

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V11 (14 x 25) 4 apoios HSOCVCOB\HSOCVCOB

Mep 1 -1.1 .1 -.2 .5 -.6
1 ----- 2 ----- 3 ----- 4

Mapoio 1 .4
L barra .69 .43 .43 1.6
1 ----- 2 ----- 3 ----- 4
Mvao 1.1 .6

2 # 6.3 2 # 6.3 2 # 6.3
Arm sup 0.52 0.52 0.52
1 ----- 2 ----- 3 ----- 4
Arm inf 0.52 0.52
 2 # 6.3 2 # 6.3
1 ----- 2 ----- 3 ----- 4
Reac 1.72 3.68 1.67 1.28
Corte * 1.5 2.1 1.1 -.1 1.4 1.1
Ast 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9

Estribo # 4.2 # 4.2 # 4.2
 c/10 c/10 c/10
Trechos 3 1 2.1

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V12 (14 x 25) 3 apoios HSOCVCOB\HSOCVCOB

Mep .2 -.3 .7 -.8
1 ----- 2 ----- 3

Mapoio .8
L barra .68 2
1 ----- 2 ----- 3
Mvao ** .3 .8

2 # 6.3 2 # 6.3
Arm sup 0.52 0.52
1 ----- 2 ----- 3
Arm inf 0.52
 2 # 6.3
1 ----- 2 ----- 3
Reac .55 3.58 1.48
Corte * .3 1.3 1.8 1.3
Ast 1.9 1.9 1.9 1.9 1.9 1.9

Estribo # 4.2 # 4.2
 c/10 c/10
Trechos 1.5 2.6

** Momento no vao de acordo com item 3.2.2.3.A.a (NBR-6118)

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

V13 (14 x 25) 4 apoios HSOCVCOB\HSOCVCOB

Mep 2.3 -2.4 .4 -.5 1.2 -1.3
1 ----- 2 ----- 3 ----- 4

Mapoio		2.1		.9		
L barra		.68	.68	.68	.62	
1	-----	2	-----	3	-----	4
Mvao		2.5	** .3		1.5	

		2 # 6.3	2 # 6.3	2 # 6.3	
Arm sup		0.52	0.52	0.52	
1	-----	2	-----	3	-----
Arm inf		0.52		0.52	
		2 # 6.3		2 # 6.3	

	1	-----	2	-----	3	-----	4
Reac	3.76		7.65		4.43		2.68
Corte *	3.4		4.7	2.2	.7	3	2.3
Ast	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Estribo		# 4.2		# 4.2		# 4.2
		c/10		c/10		c/10
Trechos		3.1		1.5		2.5

** Momento no vao de acordo com item 3.2.2.3.A.a (NBR-6118)

* Valores reduzidos de acordo com item 4.1.4.3 (NBR-6118)

QUADRO DE REACOES DAS VIGAS

Víga Reacoes

V1	P1 2.45	P2 2.45	
V2	P13 0.53	P4 3.17	P5 1.38
V3	P5 2.07	P7 2.07	
V4	P8 1.66	P9 1.66	
V5	P10 2.07	P11 2.07	
V6	P12 1.66	P13 1.66	

Víga Reacoes

V7	P14	P15			
	1.32	1.32			
V8	P16	P17	P18		
	10.03	5.76	2.96		
V9	V8	P14	P10	P6	P1
	1.96	3.82	5.35	8.93	3.23
V10	P16	P15			
	2.23	2.23			
V11	P11	P7	P3	P2	
	1.72	3.68	1.67	1.28	
V12	P12	P8	P4		
	0.55	3.58	1.48		
V13	P15	P13	P9	P5	
	3.76	7.65	4.43	2.68	

ACOES DAS VIGAS NOS PILARES

PILAR	VIGAS	TOTAL
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P1	R1V1	R5V9	
	2.45	3.23	5.68
P2	R2V1	R4V11	
	2.45	1.28	3.73
P3	R3V11		
	1.67		1.67
P4	R2V2	R3V12	
	3.17	1.48	4.65
P5	R3V2	R1V3	R4V13
	1.38	2.07	2.68
			6.13
P6	R4V9		
	8.93		8.93
P7	R2V3	R2V11	
	2.07	3.68	5.75
P8	R1V4	R2V12	
	1.66	3.58	5.24
P9	R2V4	R3V13	
	1.66	4.43	6.09
P10	R1V5	R3V9	
	2.07	5.35	7.42
P11	R2V5	R1V11	
	2.07	1.72	3.79
P12	R1V6	R1V12	
	1.66	0.55	2.21
P13	R1V2	R2V6	R2V13
	0.53	1.66	7.65
			9.84
P14	R1V7	R2V9	
	1.32	3.82	5.14
P15	R2V7	R2V10	R1V13
	1.32	2.23	3.76
			7.31
P16	R1V8	R1V10	
	10.03	2.23	12.26
P17	R2V8		
	5.76		5.76
P18	R3V8		
	2.96		2.96
Total			104.56


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