

1.- MATERIAIS	
1.1.- Concretos	
1.2.- Aços por elemento	
1.2.1.- Aços em barras	
1.2.2.- Aços em perfis	
2.- ARM.PILARES E PILARES PAREDES	
2.1.- Pilares.....	
3.- VERIFICAÇÃO DA RESISTÊNCIA AO ESFORÇO CORTANTE EM PILARES DE CONCRETO .	
4.- ESFORÇOS EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE.....	
5.- ARRANQUES EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE.....	
6.- DESFAV. PILARES, PILARES-PAREDES E CORTINAS.....	
6.1.- Pilares.....	
7.- RELATÓRIO QUANTITATIVOS PILARES	
8.- SOMATÓRIO DE ESFORÇOS EM PILARES, PAREDES E MUROS/CORTINAS POR AÇÕES E PISO	
8.1.- Resumido	



1.- MATERIAIS

1.1.- Concretos

C25, em geral; $f_{ck} = 255 \text{ kgf/cm}^2$; $\gamma_c = 1.40$

1.2.- Aços por elemento

1.2.1.- Aços em barras

Para todos os elementos estruturais da obra: CA-50-A e CA-60-B; $f_{yk} = 5097 \text{ a } 6116 \text{ kgf/cm}^2$; $\gamma_s = 1.15$

1.2.2.- Aços em perfis

Tipo de aço para perfis	Aço	Limite elástico(kgf/c)	Módulo de elasticidade(kgf/cm ²)
Aços dobrados	A-36	2548	2089704
Aços laminados	A-36	2548	2100000

2.- ARM.PILARES E PILARES PAREDES

2.1.- Pilares

- Tramo: Nível inicial / nível final do tramo entre pisos.
- Armaduras:
 - Primeira parcela: Armadura de canto.
 - Segunda parcela: Armadura da face X.
 - Terceira Parcela: Armadura da face Y.
- Estribos: Indica-se apenas o estribo perimetral disposto. Se existirem outros estribos e ramos, deve-se consultar o desenho do quadro de pilares. Podem existir distintos espaçamentos no topo, base e nó, que podem ser consultados em opções e detalhamento de pilares.
- H: Altura livre do tramo de pilar sem travamento intermediário.
- H_{px}: Comprimento de flambagem do tramo de pilar na direção 'X'.
- H_{py}: Comprimento de flambagem do tramo de pilar na direção 'Y'.
- Desfavoráveis: Esforços desfavoráveis (majorados), correspondentes à pior combinação que produz as maiores tensões e/ou deformações. Inclui a amplificação de esforços devidos aos efeitos de segunda ordem e excentricidade adicional por flambagem.
- Referência: Esforços desfavoráveis (majorados), correspondentes à pior combinação que produz as maiores tensões e/ou deformações. Inclui a amplificação de esforços devidos aos efeitos de segunda ordem (não inclui flambagem).
- Nota:
 - Esforços em relação aos eixos locais do pilar.



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

Pilar	Planta	Dimensão(cm)	Tramo(m)	Armaduras	As/Ac (%)	Estribos	H(m)	Hpx(m)	Hpy(m)	Desfavoráveis			Referência		
										N(t)	Mx(t-m)	My(t-m)	N(t)	Mx(t-m)	My(t-m)
P401	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	18.36	1.43	0.69	18.36	0.42	0.05
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	42.63	3.46	3.14	42.63	1.15	2.17
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	43.36	3.06	2.11	43.36	0.71	1.12
P402	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	24.16	0.88	1.76	24.16	0.04	0.44
	Piso 2	30x20	0.00/3.47	4Ø20 +2Ø16 +4Ø16	4.10	Ø6.3c/20 cm	3.47	3.47	3.47	73.10	2.20	4.49	73.10	0.78	0.90
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	73.83	1.81	4.09	73.83	0.38	0.47
P403	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	22.71	0.84	1.69	22.71	0.05	0.45
	Piso 2	30x20	0.00/3.47	4Ø16 +4Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	71.64	1.89	3.97	71.64	0.48	0.42
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	72.37	1.77	3.77	72.37	0.35	0.20
P404	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	22.85	0.79	1.67	22.85	0.00	0.42
	Piso 2	30x20	0.00/3.47	4Ø16 +4Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	66.18	1.53	4.24	66.18	0.17	0.87
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	66.91	1.37	3.86	66.91	0.00	0.47
P405	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	23.97	0.93	1.73	23.97	0.10	0.42
	Piso 2	30x20	0.00/3.47	4Ø20 +4Ø16 +2Ø10	3.70	Ø6.3c/12 cm	3.47	3.47	3.47	72.18	2.54	4.53	72.18	1.12	0.96
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	72.91	2.15	4.12	72.91	0.73	0.53
P406	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	18.35	0.77	1.44	18.35	0.13	0.44
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	42.46	3.33	3.14	42.46	1.03	2.18
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	43.19	2.91	2.18	43.19	0.57	1.20
P407	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	15.59	0.95	1.29	15.59	0.40	0.44
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	47.99	3.53	2.72	47.99	0.93	1.63
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	48.72	3.21	2.20	48.72	0.57	1.09
P408	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	19.99	1.91	0.86	19.99	0.82	0.16
	Piso 2	20x40	0.00/3.47	4Ø20 +2Ø16 +4Ø16	3.07	Ø6.3c/20 cm	3.47	3.47	3.47	78.77	6.26	1.90	78.77	2.10	1.90
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	79.74	5.50	0.96	79.74	1.31	0.96
P409	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	19.33	0.77	1.75	19.33	0.10	0.69
	Piso 2	40x20	0.00/3.47	4Ø20 +2Ø12.5	1.89	Ø6.3c/15 cm	3.47	3.47	3.47	68.31	0.77	5.45	68.31	0.77	1.75
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	69.28	0.58	4.85	69.28	0.58	1.09
P410	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	18.94	0.71	1.80	18.94	0.05	0.77
	Piso 2	30x20	0.00/3.47	4Ø20 +4Ø16	3.43	Ø6.3c/20 cm	3.47	3.47	3.47	71.56	1.57	5.04	71.56	0.16	1.49
	Piso 1	80x80	-0.80/-0.50	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.30	0.30	0.30	72.28	1.58	4.49	72.28	0.16	0.92
P411	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	1.20	Ø5c/12 cm	3.50	3.50	3.50	20.25	0.88	1.69	20.25	0.18	0.58
	Piso 2	20x40	0.00/3.47	4Ø20 +4Ø16 +2Ø16	3.08	Ø6.3c/20 cm	3.47	3.47	3.47	80.75	4.65	5.84	80.75	0.42	5.84
	Piso 1	80x80	-0.80/-0.40	4Ø25 +2Ø25 +2Ø25	0.62	Ø8c/30 cm	0.40	0.40	0.40	81.73	4.54	3.55	81.73	0.28	3.55
P412	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	14.98	0.89	1.23	14.98	0.36	0.41
	Piso 2	20x30	0.00/3.47	4Ø12.5 + ... +4Ø12.5	1.67	Ø5c/15 cm	3.47	3.47	3.47	40.00	3.08	2.53	40.00	0.91	1.62
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	40.72	2.72	1.93	40.72	0.51	1.01
P413	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	13.26	0.98	0.59	13.26	0.26	0.13
	Piso 2	20x30	0.00/3.47	4Ø10 + ... +2Ø10	0.80	Ø5c/12 cm	3.47	3.47	3.47	38.98	2.73	1.39	38.98	0.62	0.51
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	39.71	2.53	1.06	39.71	0.38	0.15
P414	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	19.25	0.97	1.41	19.25	0.75	1.10
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	50.12	1.70	2.07	50.12	1.06	1.30
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	51.64	1.29	1.05	51.64	0.49	0.40
P415	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	17.93	0.66	1.37	17.93	0.51	1.04
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	46.20	0.93	1.92	46.20	0.53	1.09
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	47.72	1.20	0.89	47.72	0.43	0.32
P416	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	18.49	0.55	1.50	18.49	0.42	1.15
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	43.54	1.42	1.90	43.54	0.90	1.20
	Piso 1	80x80	-0.80/-0.50	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.30	0.30	0.30	45.07	0.99	1.10	45.07	0.38	0.43
P417	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	17.38	1.32	0.83	17.38	0.37	0.22
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	2.67	Ø6.3c/20 cm	3.47	3.47	3.47	57.91	3.80	2.05	57.91	0.72	0.77
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	58.64	3.55	1.65	58.64	0.44	0.36
P418	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	19.64	1.01	1.51	19.64	0.33	0.43
	Piso 2	20x30	0.00/3.47	4Ø12.5 + ... +2Ø12.5	1.25	Ø5c/15 cm	3.47	3.47	3.47	46.10	3.05	1.43	46.10	0.55	0.38
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	46.59	2.83	1.27	46.59	0.31	0.20
P419	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	16.83	1.25	0.60	16.83	0.33	0.01
	Piso 2	20x20	0.00/3.47	4Ø20 + ... +2Ø16	4.15	Ø6.3c/20 cm	3.47	3.47	3.47	49.19	2.95	1.43	49.19	0.54	0.00
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	49.68	2.75	1.48	49.68	0.33	0.05
P420	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	23.59	1.18	2.06	23.59	0.94	1.65
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	78.35	1.87	3.89	78.35	1.19	2.48
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	79.88	1.36	2.54	79.88	0.61	1.13
P421	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	21.86	0.24	2.03	21.86	0.19	1.59
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	71.22	0.30	3.81	71.22	0.19	2.39
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	72.75	0.43	2.58	72.75	0.19	1.14
P422	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	0.51	Ø5c/12 cm	3.50	3.50	3.50	23.02	0.43	2.42	23.02	0.35	1.96
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	0.51	Ø5c/12 cm	3.47	3.47	3.47	72.79	0.35	4.18	72.79	0.23	2.72
	Piso 1	80x80	-0.80/-0.50	4Ø20 +6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.30	0.30	0.30	74.31	0.49	2.81	74.31	0.23	1.34
P423	Piso 3	20x20	3.97/7.47	4Ø10	0.80	Ø5c/12 cm	3.50	3.50	3.50	19.00	0.76	1.15	19.00	0.09	0



P424	Piso 3	20x20	3.97/7.47	4Ø20 + ...	+2Ø12.5	3.77	Ø6.3c/15 cm	3.50	3.50	3.50	46.00	2.52	1.54	46.00	0.19	0.13
	Piso 2	20x30	0.00/3.47	4Ø20	+2Ø16 +4Ø16	4.10	Ø6.3c/20 cm	3.47	3.47	3.47	83.93	4.75	1.74	83.93	0.81	0.23
	Piso 1	80x80	-0.80/-0.40	4Ø20	+6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	84.66	4.42	1.59	84.66	0.46	0.08
P425	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	12.12	0.60	0.88	12.12	0.18	0.22
	Piso 2	20x20	0.00/3.47	4Ø12.5		1.25	Ø5c/15 cm	3.47	3.47	3.47	24.86	1.69	1.19	24.86	0.35	0.34
	Piso 1	80x80	-0.80/-0.40	4Ø20	+4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	25.34	1.07	1.62	25.34	0.21	0.24
P426	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	15.90	1.42	0.72	15.90	0.54	0.17
	Piso 2	20x30	0.00/3.47	4Ø16 + ...	+4Ø10	1.87	Ø6.3c/12 cm	3.47	3.47	3.47	45.75	3.71	1.72	45.75	1.23	0.68
	Piso 1	80x80	-0.80/-0.40	4Ø20	+4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	46.47	3.30	1.44	46.47	0.78	0.38
P427	Piso 3	Diâmetro:40	3.97/7.47	8Ø10		0.51	Ø5c/12 cm	3.50	3.50	3.50	16.82	0.48	1.82	16.82	0.40	1.50
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10		0.51	Ø5c/12 cm	3.47	3.47	3.47	45.06	0.71	3.12	45.06	0.51	2.24
	Piso 1	80x80	-0.80/-0.40	4Ø20	+6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	46.59	0.52	2.52	46.59	0.33	1.61
P428	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	14.88	0.54	1.39	14.88	0.03	0.57
	Piso 2	20x20	0.00/3.47	4Ø20	+2Ø16	4.15	Ø6.3c/20 cm	3.47	3.47	3.47	42.05	1.38	3.07	42.05	0.05	0.89
	Piso 1	80x80	-0.80/-0.50	4Ø20	+4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.30	0.30	0.30	42.54	1.34	2.74	42.54	0.00	0.55
P429	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	16.47	0.78	1.28	16.47	0.21	0.38
	Piso 2	30x20	0.00/3.47	4Ø20		2.10	Ø6.3c/20 cm	3.47	3.47	3.47	49.49	2.13	3.73	49.49	1.01	1.05
	Piso 1	80x80	-0.80/-0.40	4Ø20	+6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	50.22	1.74	3.37	50.22	0.60	0.65
P430	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	23.33	1.58	0.83	23.33	0.30	0.02
	Piso 2	30x20	0.00/3.47	4Ø20	+2Ø12.5	2.52	Ø6.3c/15 cm	3.47	3.47	3.47	56.50	2.74	3.50	56.50	1.48	0.48
	Piso 1	80x80	-0.80/-0.40	4Ø20	+6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	57.23	2.12	3.30	57.23	0.84	0.25
PE401	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	13.97	0.66	0.95	13.97	0.17	0.18
	Piso 2	20x20	0.00/3.47	4Ø10		0.80	Ø5c/12 cm	3.47	3.47	3.47	22.37	0.81	1.36	22.37	0.04	0.15
	Piso 1	80x80	-0.80/-0.40	4Ø20	+6Ø16 +4Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	22.86	0.78	1.31	22.86	0.00	0.07
PE402	Piso 3	20x20	3.97/7.47	4Ø16 + ...	+2Ø12.5	2.63	Ø6.3c/15 cm	3.50	3.50	3.50	34.73	2.22	1.42	34.73	0.31	0.21
	Piso 2	20x30	0.00/3.47	4Ø16 + ...	+2Ø12.5	1.75	Ø6.3c/15 cm	3.47	3.47	3.47	35.22	1.22	2.19	35.22	0.00	0.26
	Piso 1	80x80	-0.80/-0.40	4Ø25	+2Ø25 +2Ø25	0.62	Ø8c/30 cm	0.40	0.40	0.40	55.96	3.25	1.33	55.96	0.24	0.07
PE403	Piso 3	20x20	3.97/7.47	4Ø10		0.80	Ø5c/12 cm	3.50	3.50	3.50	12.53	0.60	1.37	12.53	0.16	0.68
	Piso 2	20x20	0.00/3.47	4Ø10		0.80	Ø5c/12 cm	3.47	3.47	3.47	13.02	0.55	1.18	13.02	0.10	0.47
	Piso 1	80x80	-0.80/-0.40	4Ø20	+4Ø16 +6Ø16	0.51	Ø6.3c/20 cm	0.40	0.40	0.40	19.58	1.09	0.67	19.58	0.03	0.00

3.- VERIFICAÇÃO DA RESISTÊNCIA AO ESFORÇO CORTANTE EM PILARES DE CONCRETO

- Tramo: Nível inicial / nível final do tramo entre pisos.
- Armaduras:
 - Primeira parcela: Armadura de canto.
 - Segunda parcela: Armadura da face X.
 - Terceira Parcela: Armadura da face Y.
- Estribos: Indica-se apenas o estribo perimetral disposto. Se existirem outros estribos e ramos, deve-se consultar o desenho do quadro de pilares. Podem existir distintos espaçamentos no topo, base e nó, que podem ser consultados em opções e detalhamento de pilares.
- Desfavoráveis: Esforços cortantes (majorados) correspondentes à combinação que produz o estado de tensões tangenciais mais desfavorável.
 - Nsd: Força Normal de cálculo [(+) compressão, (-) tração]
 - Vsd_x, Vsd_y: Esforço cortante de cálculo em cada direção
 - Vrd_{1x}, Vrd_{1y}: Esforço cortante de ruptura por compressão oblíqua na alma (em cada direção)
 - Vrd_{2x}, Vrd_{2y}: Esforço cortante de ruptura por tração na alma (em cada direção)
 - Verificação da interação nas duas direções (VCi):



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

- Origem dos esforços desfavoráveis:

G: Verticais

GV: Verticais + vento

GSis: Verticais + sismo

GVSis: Verticais + vento + sismo

- Passa:

Sim: Indica que o valor de $V_{Ci} \leq 1$ para as duas verificações

Não: Indica que o valor de $V_{Ci} > 1$ para alguma das duas verificações ou que o espaçamento de estribos é maior que o exigido pela norma

- Nota:

Esforços em relação aos eixos locais do pilar.

Pilar	Planta	Dimensão(cm)	Tramo(m)	Armaduras	Estribos	Desfavoráveis							VC1	VC2	Origem	Passa
						Nsd(t)	Vsd(x)	Vrd1x(t)	Vrd2x(t)	Vsdy(t)	Vrd1y(t)	Vrd2y(t)				
P401	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	17.87	-0.11	8.09	7.89	0.11	8.09	7.89	0.02	0.02	G	Sim
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	Ø6.3c/20 cm	42.63	-0.54	11.81	11.62	-0.95	15.52	11.55	0.08	0.09	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	43.78	-1.66	274.76	104.52	-0.27	274.83	109.37	0.01	0.02	G	Sim
P402	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	Ø5c/12 cm	24.65	0.06	8.09	7.89	0.12	8.09	7.89	0.02	0.02	G	Sim
	Piso 2	30x20	0.00/3.47	4Ø20 +2Ø16 +4Ø16	Ø6.3c/20 cm	73.10	0.34	15.45	11.62	-0.39	11.71	11.62	0.04	0.04	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	Ø6.3c/20 cm	97.28	4.86	274.83	109.37	2.41	274.76	104.52	0.02	0.05	G	Sim
P403	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	22.71	-0.05	8.09	7.89	0.17	8.09	7.89	0.02	0.02	G	Sim
	Piso 2	30x20	0.00/3.47	4Ø16 +4Ø16	Ø6.3c/20 cm	72.37	-0.24	15.52	11.62	-0.18	11.81	12.83	0.02	0.02	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	83.23	-0.56	274.76	104.52	-1.51	274.83	109.37	0.01	0.01	G	Sim
P404	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	22.85	0.00	8.09	7.89	0.11	8.09	7.89	0.01	0.01	G	Sim
	Piso 2	30x20	0.00/3.47	4Ø16 +4Ø16	Ø6.3c/20 cm	66.91	0.06	15.52	11.62	-0.39	11.81	12.83	0.03	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	88.86	-4.50	274.76	104.52	-2.92	274.83	109.37	0.02	0.05	G	Sim
P405	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	Ø5c/12 cm	23.97	-0.11	8.09	7.89	0.10	8.09	7.89	0.02	0.02	G	Sim
	Piso 2	30x20	0.00/3.47	4Ø20 +4Ø16 +2Ø10	Ø6.3c/12 cm	72.91	-0.53	15.49	14.05	-0.43	11.73	16.07	0.05	0.05	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	Ø6.3c/20 cm	91.76	2.98	274.83	109.37	0.68	274.76	104.52	0.01	0.03	G	Sim
P406	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	18.35	0.05	8.09	7.89	0.10	8.09	7.89	0.01	0.01	G	Sim
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	Ø6.3c/20 cm	42.46	0.46	11.81	11.62	-0.97	15.52	11.52	0.07	0.09	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	45.08	0.63	274.76	104.52	-0.38	274.83	109.37	0.00	0.01	G	Sim
P407	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	15.10	-0.13	8.09	7.89	0.18	8.09	7.89	0.03	0.03	G	Sim
	Piso 2	20x30	0.00/3.47	4Ø16 +2Ø16 +2Ø16	Ø6.3c/20 cm	47.99	-0.43	11.81	11.62	0.79	15.52	11.62	0.06	0.08	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	Ø6.3c/20 cm	47.93	-4.14	274.83	109.37	4.84	274.76	104.52	0.02	0.06	G	Sim
P408	Piso 3	20x20	3.97/7.47	4Ø10 + ... +2Ø10	Ø5c/12 cm	19.99	-0.31	8.09	7.39	0.06	8.09	7.89	0.04	0.04	G	Sim
	Piso 2	20x40	0.00/3.47	4Ø20 +2Ø16 +4Ø16	Ø6.3c/20 cm	79.74	-0.98	15.64	15.49	0.83	25.09	15.49	0.07	0.08	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +4Ø16 +6Ø16	Ø6.3c/20 cm	63.11	-1.21	274.83	109.37	1.40	274.76	104.52	0.01	0.02	G	Sim
P409	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	Ø5c/12 cm	19.33	-0.04	8.09	7.89	0.27	8.09	7.72	0.03	0.04	G	Sim
	Piso 2	40x20	0.00/3.47	4Ø20 +2Ø12.5	Ø6.3c/15 cm	68.31	-0.39	25.04	17.11	0.82	15.67	15.49	0.05	0.06	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	57.01	-0.23	274.76	104.52	8.38	274.83	109.37	0.03	0.08	G	Sim
P410	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	Ø5c/12 cm	18.94	-0.02	8.09	7.89	0.29	8.09	7.42	0.04	0.04	G	Sim
	Piso 2	30x20	0.00/3.47	4Ø20 +4Ø16	Ø6.3c/20 cm	72.28	-0.10	15.39	11.62	0.70	11.73	12.83	0.06	0.05	G	Sim
	Piso 1	80x80	-0.80/-0.50	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	58.68	-2.70	274.76	104.52	2.72	274.83	109.37	0.01	0.04	G	Sim
P411	Piso 3	20x20	3.97/7.47	4Ø10 +2Ø10	Ø5c/12 cm	19.76	-0.07	8.09	7.89	0.23	8.09	7.89	0.03	0.03	G	Sim
	Piso 2	20x40	0.00/3.47	4Ø20 +4Ø16 +2Ø16	Ø6.3c/20 cm	80.75	-0.20	15.61	14.28	2.71	25.11	15.08	0.11	0.18	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø25 +2Ø25 +2Ø25	Ø8c/30 cm	98.84	3.07	272.86	102.64	-0.83	272.86	102.64	0.01	0.03	G	Sim
P412	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	14.49	0.11	8.09	7.89	0.18	8.09	7.89	0.03	0.03	G	Sim
	Piso 2	20x30	0.00/3.47	4Ø12.5 + ... +4Ø12.5	Ø5c/15 cm	40.00	0.41	12.04	12.09	0.76	15.70	11.06	0.06	0.08	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	38.13	-0.59	274.76	104.52	2.17	274.83	109.37	0.01	0.02	G	Sim
P413	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	12.77	-0.08	8.09	7.89	-0.06	8.09	7.89	0.01	0.01	G	Sim
	Piso 2	20x30	0.00/3.47	4Ø10 + ... +2Ø10	Ø5c/12 cm	39.71	-0.29	12.14	11.83	-0.19	15.78	11.83	0.03	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	53.17	1.74	274.76	104.52	0.80	274.83	109.37	0.01	0.02	G	Sim
P414	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	Ø5c/12 cm	19.25	0.29	27.41	17.44	-0.42	27.41	16.96	0.02	0.03	G	Sim
	Piso 2	Diâmetro:40	0.00/3.47	8Ø10	Ø5c/12 cm	51.64	0.45	27.41	17.44	-0.49	27.41	17.44	0.02	0.04	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20 +6Ø16 +4Ø16	Ø6.3c/20 cm	56.66	-1.03	274.76	104.52	2.44	274.83	109.37	0.01	0.02	G	Sim
P415	Piso 3	Diâmetro:40	3.97/7.47	8Ø10	Ø5c/12 cm	17.93	-0.20	27.41	17.44	-0.42	27.41	16.83	0.02	0.03	G	Sim



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P416	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	47.72	-0.28	27.41	17.44	-0.41	27.41	17.44	0.02	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	52.58	0.03	274.76	104.52	1.94	274.83	109.37	0.01	0.02	G	Sim
	Piso 3	Diâmetro:40	3.97/7.47	Ø10	Ø5c/12 cm	18.49	0.10	27.41	17.44	-0.46	27.41	16.42	0.02	0.03	G	Sim
P417	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	45.07	0.37	27.41	17.44	-0.47	27.41	17.44	0.02	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.50	4Ø20	Ø6.3c/20 cm	53.88	-4.71	274.76	104.52	2.45	274.83	109.37	0.02	0.05	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	16.89	-0.14	8.09	7.89	-0.09	8.09	7.89	0.02	0.02	G	Sim
P418	Piso 2	20x30	0.00/3.47	4Ø16	Ø6.3c/20 cm	58.64	-0.34	11.81	11.62	-0.33	15.52	11.62	0.04	0.04	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	73.18	3.40	274.76	104.52	7.86	274.83	109.37	0.03	0.08	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	19.15	0.10	8.09	7.89	-0.20	8.09	7.89	0.03	0.03	G	Sim
P419	Piso 2	20x30	0.00/3.47	4Ø12.5	Ø6.3c/20 cm	46.59	0.25	12.04	11.06	-0.17	15.70	11.06	0.02	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	63.41	-0.54	274.76	104.52	0.34	274.83	109.37	0.00	0.01	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	16.34	-0.10	8.09	7.89	0.01	8.09	7.89	0.01	0.01	G	Sim
P420	Piso 2	20x20	0.00/3.47	4Ø20	Ø6.3c/20 cm	49.19	-0.25	7.81	7.75	0.02	7.77	7.75	0.03	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	50.66	-2.54	274.76	104.52	0.14	274.83	109.37	0.01	0.02	G	Sim
	Piso 3	Diâmetro:40	3.97/7.47	Ø10	Ø5c/12 cm	23.59	0.37	27.41	17.44	-0.53	27.41	15.82	0.02	0.04	G	Sim
P421	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	79.88	0.52	27.41	17.44	-1.04	27.41	17.44	0.04	0.07	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	104.39	-0.44	274.76	104.52	-12.02	274.83	109.37	0.04	0.11	G	Sim
	Piso 3	Diâmetro:40	3.97/7.47	Ø10	Ø5c/12 cm	21.86	-0.08	27.41	17.44	-0.51	27.41	15.60	0.02	0.03	G	Sim
P422	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	72.75	-0.10	27.41	17.44	-1.02	27.41	17.44	0.04	0.06	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	102.91	-3.68	274.76	104.52	-18.77	274.83	109.37	0.07	0.18	G	Sim
	Piso 3	Diâmetro:40	3.97/7.47	Ø10	Ø5c/12 cm	23.02	-0.17	27.41	17.44	-0.66	27.41	14.90	0.02	0.05	G	Sim
P423	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	72.78	-0.14	27.41	17.44	-1.17	27.41	17.44	0.04	0.07	G	Sim
	Piso 1	80x80	-0.80/-0.50	4Ø20	Ø6.3c/20 cm	101.71	0.87	274.76	104.52	-11.21	274.83	109.37	0.04	0.10	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	18.51	-0.03	8.09	7.89	-0.03	8.09	7.89	0.00	0.01	G	Sim
P424	Piso 2	20x40	0.00/3.47	4Ø12.5	Ø5c/15 cm	76.63	-0.16	16.05	14.75	-0.50	25.40	14.75	0.02	0.04	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	95.45	0.59	274.76	104.52	-7.72	274.83	109.37	0.03	0.07	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø20	Ø6.3c/15 cm	41.10	-0.07	7.83	8.56	-0.02	7.77	8.56	0.01	0.01	G	Sim
P425	Piso 2	20x30	0.00/3.47	4Ø20	Ø6.3c/20 cm	83.93	0.37	11.73	12.83	-0.09	15.43	11.62	0.03	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	84.98	0.75	274.76	104.52	-0.43	274.83	109.37	0.00	0.01	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	12.12	-0.04	8.09	7.89	0.07	8.09	7.89	0.01	0.01	G	Sim
P426	Piso 2	20x20	0.00/3.47	4Ø12.5	Ø5c/15 cm	25.34	-0.16	8.03	7.37	0.17	8.03	7.37	0.03	0.03	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	34.19	-1.39	274.83	109.37	3.34	274.76	104.52	0.01	0.03	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	15.90	-0.18	8.09	7.82	0.07	8.09	7.89	0.02	0.02	G	Sim
P427	Piso 2	20x30	0.00/3.47	4Ø16	Ø6.3c/12 cm	46.47	-0.58	11.92	16.07	0.31	15.52	14.05	0.05	0.04	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	50.37	-2.08	274.83	109.37	1.46	274.76	104.52	0.01	0.02	G	Sim
	Piso 3	Diâmetro:40	3.97/7.47	Ø10	Ø5c/12 cm	16.82	-0.16	27.41	17.44	0.53	27.41	14.72	0.02	0.04	G	Sim
P428	Piso 2	Diâmetro:40	0.00/3.47	Ø10	Ø5c/12 cm	46.59	-0.24	27.41	17.44	1.11	27.41	17.44	0.04	0.07	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	52.30	1.11	274.76	104.52	2.07	274.83	109.37	0.01	0.02	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	14.88	0.01	8.09	7.89	0.19	8.09	7.54	0.02	0.02	G	Sim
P429	Piso 2	20x20	0.00/3.47	4Ø20	Ø6.3c/20 cm	42.05	0.02	7.77	7.75	0.42	7.81	7.75	0.05	0.05	G	Sim
	Piso 1	80x80	-0.80/-0.50	4Ø20	Ø6.3c/20 cm	67.13	1.49	274.83	109.37	3.74	274.76	104.52	0.01	0.04	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	15.98	-0.07	8.09	7.89	0.10	8.09	7.89	0.02	0.02	G	Sim
P430	Piso 2	30x20	0.00/3.47	4Ø20	Ø6.3c/20 cm	49.49	-0.46	15.39	11.62	0.49	11.66	10.41	0.05	0.06	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	63.58	1.28	274.76	104.52	1.89	274.83	109.37	0.01	0.02	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	22.84	0.10	8.09	7.89	0.06	8.09	7.89	0.01	0.02	G	Sim
PE401	Piso 2	30x20	0.00/3.47	4Ø20	Ø6.3c/15 cm	57.23	0.67	15.39	12.83	-0.21	11.75	12.83	0.05	0.05	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	70.42	0.26	274.76	104.52	2.98	274.83	109.37	0.01	0.03	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	11.37	0.12	8.09	7.89	-0.09	8.09	7.89	0.02	0.02	G	Sim
PE402	Piso 2	20x20	0.00/3.47	4Ø10	Ø5c/12 cm	20.64	0.00	8.09	7.89	-0.07	8.09	7.89	0.01	0.01	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	28.29	0.97	274.76	104.52	0.25	274.83	109.37	0.00	0.01	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø16	Ø6.3c/15 cm	34.73	0.09	7.90	8.56	-0.14	7.87	8.56	0.02	0.02	G	Sim
PE403	Piso 2	20x30	0.00/3.47	4Ø16	Ø6.3c/15 cm	55.47	-0.19	11.85	12.83	-0.06	15.52	12.83	0.02	0.02	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø25	Ø8c/30 cm	69.60	0.99	272.86	102.64	-1.13	272.86	102.64	0.01	0.01	G	Sim
	Piso 3	20x20	3.97/7.47	4Ø10	Ø5c/12 cm	12.53	0.08	8.09	7.89	0.33	8.09	6.86	0.04	0.05	G	Sim
PE403	Piso 2	20x20	0.00/3.47	4Ø10	Ø5c/12 cm	16.26	-0.01	8.09	7.89	-0.05	8.09	7.89	0.01	0.01	G	Sim
	Piso 1	80x80	-0.80/-0.40	4Ø20	Ø6.3c/20 cm	26.32	0.92	274.83	109.37	2.57	274.76	104.52	0.01	0.03	G	Sim

4.- ESFORÇOS EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE

▪ Tramo: Nível inicial / nível final do tramo entre pisos.

▪ Nota:

Esforços em relação aos eixos locais do pilar.

Pilar	Planta	Dimensão(cm)	Tramo(m)	Hipótese(s)	Base						Ext.Sup.					
					N(t)	Mx(t-m)	My(t-m)	Qx(t)	Qy(t)	T(t-m)	N(t)	Mx(t-m)	My(t-m)	Qx(t)	Qy(t)	T(t-m)
P401	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	9.68	0.16	0.00	0.03	0.07	-0.00	9.33	0.04	-0.23	0.03	0.07	-0.00
					3.44	0.14	-0.04	0.04	0.01	-0.00	3.44	-0.00	-0.09	0.04	0.01	-0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	21.87	0.29	-0.49	0.22	-0.42	-0.00	21.35	-0.47	0.96	0.22	-0.42	-0.00
P402	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	31.27	0.38	1.33	1.18	-0.20	-0.00	30.63	-0.09	1.41	1.18	-0.20	-0.00
					9.55	0.06	0.02	-0.15	0.50	-0.00	9.55	0.12	-0.18	-0.15	0.50	-0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	12.87	-0.05	0.03	-0.02	0.07	-0.00	12.52	0.02	-0.23	-0.02	0.07	-0.00
P402	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	4.73	-0.06	-0.05	-0.02	0.01	-0.00	4.73	0.01	-0.08	-0.02	0.01	-0.00
					4.73	-0.06	-0.05	-0.02	0.01	-0.00	4.73	0.01	-0.08	-0.02	0.01	-0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	4.73	-0.06	-0.05	-0.02	0.01	-0.00	4.73	0.01	-0.08	-0.02	0.01	-0.00



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	33.28 19.46	-0.14 -0.13	-0.18 -0.15	-0.12 -0.12	-0.15 -0.13	-0.00 -0.00	32.76 19.46	0.29 0.27	0.36 0.29	-0.12 -0.12	-0.15 -0.13	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	48.97 20.51	0.73 0.06	1.09 0.03	-3.33 -0.13	1.48 0.24	-0.00 -0.00	48.33 20.51	2.07 0.11	0.50 -0.06	-3.33 -0.13	1.48 0.24	-0.00 -0.00
P403	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	12.12 4.45	0.06 0.03	0.16 -0.04	0.02 0.01	0.11 0.01	-0.00 -0.00	11.77 4.45	-0.02 -0.01	-0.24 -0.08	0.02 0.01	0.11 0.01	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	34.40 17.29	0.15 0.11	-0.00 -0.14	0.10 0.07	-0.01 0.07	-0.00 -0.00	33.88 17.29	-0.20 -0.14	0.04 0.26	0.10 0.07	-0.01 -0.11	-0.00 -0.00
P404	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	12.20 4.47	-0.00 -0.00	0.01 -0.04	-0.00 -0.00	0.07 0.01	-0.00 -0.00	11.85 4.47	-0.00 -0.00	-0.22 -0.08	-0.00 -0.00	0.07 0.01	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	30.48 17.31	-0.02 0.01	-0.20 -0.14	-0.03 -0.01	-0.16 -0.11	-0.00 -0.00	29.96 17.31	0.09 0.03	0.37 0.26	-0.03 -0.01	-0.16 -0.11	-0.00 -0.00
P405	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	12.77 4.70	0.12 0.09	-0.01 -0.04	0.05 0.03	0.06 0.01	-0.00 -0.00	12.42 4.70	-0.05 -0.03	-0.22 -0.08	0.05 0.03	0.06 0.01	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	32.84 19.24	0.27 0.24	-0.23 -0.14	0.20 0.18	-0.19 -0.12	-0.00 -0.00	32.32 19.24	-0.42 -0.38	0.43 0.26	0.20 0.18	-0.19 -0.12	-0.00 -0.00
P406	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	9.93 3.52	-0.10 -0.11	-0.01 -0.04	-0.01 -0.03	0.06 0.01	-0.00 -0.00	9.58 3.52	-0.08 -0.01	-0.23 -0.08	-0.01 -0.03	0.06 0.01	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	21.90 8.95	-0.24 -0.17	-0.52 -0.33	-0.19 -0.14	-0.43 -0.27	-0.00 -0.00	21.38 8.95	0.43 0.31	0.95 0.60	-0.19 -0.14	-0.43 -0.27	-0.00 -0.00
P407	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.29 2.85	0.14 0.15	0.21 0.10	0.04 0.05	0.09 0.04	-0.00 -0.00	7.94 2.85	-0.01 -0.02	-0.10 -0.04	0.04 0.05	0.09 0.04	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	24.07 10.73	0.20 0.21	0.52 0.26	0.15 0.16	0.37 0.19	-0.00 -0.00	23.55 10.73	-0.32 -0.35	-0.77 -0.39	0.15 0.16	0.37 0.19	-0.00 -0.00
P408	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	10.50 3.78	0.33 0.26	0.07 0.05	0.13 0.10	0.02 0.02	-0.00 -0.00	10.15 3.78	-0.13 -0.07	-0.02 -0.01	0.13 0.10	0.02 0.02	-0.00 -0.00
	Piso 2	20x40	0.00/3.47	Permanente Sobrecarga	34.45 22.51	0.51 0.42	0.41 0.28	0.38 0.32	0.34 0.24	-0.00 -0.00	33.76 22.51	-0.81 -0.69	-0.79 -0.57	0.38 0.32	0.34 0.24	-0.00 -0.00
P409	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	10.17 3.63	0.04 0.03	0.25 0.24	0.02 0.01	0.10 0.09	-0.00 -0.00	9.82 3.63	-0.02 -0.01	-0.11 -0.07	0.02 0.01	0.10 0.09	-0.00 -0.00
	Piso 2	40x20	0.00/3.47	Permanente Sobrecarga	29.22 20.26	0.21 0.20	0.39 0.40	0.14 0.14	0.28 0.30	-0.00 -0.00	28.53 20.26	-0.28 -0.27	-0.60 -0.65	0.14 0.14	0.28 0.30	-0.00 -0.00
P410	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	9.98 3.55	0.04 0.00	0.31 0.24	0.01 0.00	0.12 0.09	-0.00 -0.00	9.63 3.55	-0.01 -0.00	-0.12 -0.07	0.01 0.00	0.12 0.09	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	31.58 20.05	0.10 0.01	0.36 0.29	0.07 0.00	0.27 0.22	-0.00 -0.00	31.06 20.05	-0.14 0.01	-0.58 -0.48	0.07 0.00	0.27 0.22	-0.00 -0.00
P411	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	10.64 3.83	0.04 0.09	0.22 0.20	0.02 0.03	0.09 0.07	-0.00 -0.00	10.29 3.83	-0.02 -0.02	-0.09 -0.06	0.02 0.03	0.09 0.07	-0.00 -0.00
	Piso 2	20x40	0.00/3.47	Permanente Sobrecarga	35.70 22.67	0.04 0.15	1.33 1.21	0.03 0.11	1.00 0.93	-0.00 -0.00	35.01 22.67	-0.06 -0.24	-2.14 -2.03	0.03 0.11	1.00 0.93	-0.00 -0.00
P412	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	7.77 2.93	-0.11 -0.15	0.19 0.10	-0.03 -0.05	0.09 0.04	-0.00 -0.00	7.42 2.93	0.00 0.02	-0.11 -0.04	-0.03 -0.05	0.09 0.04	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	19.43 9.66	-0.16 -0.20	0.46 0.26	-0.13 -0.16	0.35 0.19	-0.00 -0.00	18.91 9.66	0.30 0.36	-0.74 -0.42	-0.13 -0.16	0.35 0.19	-0.00 -0.00
P413	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	7.08 2.39	0.07 0.12	-0.06 -0.04	0.02 0.04	-0.02 -0.02	-0.00 -0.00	6.73 2.39	0.00 -0.01	0.03 0.01	0.02 0.04	-0.02 -0.02	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	18.17 10.19	0.11 0.17	-0.04 -0.07	0.08 0.13	-0.06 -0.07	-0.00 -0.00	17.65 10.19	-0.17 -0.27	0.18 0.18	0.08 0.13	-0.06 -0.07	-0.00 -0.00
P414	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	10.35 3.40	-0.23 -0.31	-0.31 -0.47	-0.10 -0.11	-0.14 -0.16	-0.00 -0.00	9.25 3.40	0.11 0.06	0.18 0.10	-0.10 -0.11	-0.14 -0.16	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	20.65 16.24	-0.15 -0.20	0.03 -0.32	-0.14 -0.18	-0.06 -0.29	-0.00 -0.00	19.56 16.24	0.33 0.43	0.24 0.69	-0.14 -0.18	-0.06 -0.29	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	23.73 16.74	0.22 0.01	1.10 0.02	0.47 0.26	1.34 0.40	-0.00 -0.00	23.09 16.74	0.03 -0.10	0.57 -0.14	0.47 0.26	1.34 0.40	-0.00 -0.00



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P415	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	9.68 3.13	0.21 0.16	-0.27 -0.47	0.08 0.06	-0.14 -0.17	-0.00 -0.00	8.58 3.13	-0.08 -0.05	0.20 0.11	0.08 0.06	-0.14 -0.17	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	19.41 14.68	0.14 0.17	0.09 -0.32	0.09 0.11	-0.00 -0.29	-0.00 -0.00	18.32 14.68	-0.17 -0.21	0.10 0.68	0.09 0.11	-0.00 -0.29	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	22.40 15.16	0.25 0.04	1.02 0.02	0.14 -0.16	1.02 0.36	-0.00 -0.00	21.76 15.16	0.19 0.10	0.61 -0.13	0.14 -0.16	1.02 0.36	-0.00 -0.00
P416	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	9.97 3.24	-0.10 -0.20	-0.37 -0.45	-0.02 -0.06	-0.17 -0.16	-0.00 -0.00	8.87 3.24	-0.05 -0.01	0.22 0.10	-0.02 -0.06	-0.17 -0.16	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	18.38 13.82	-0.12 -0.15	0.01 -0.31	-0.12 -0.14	-0.06 -0.28	-0.00 -0.00	17.29 13.82	0.30 0.35	0.21 0.65	-0.12 -0.14	-0.06 -0.28	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.50	Permanente Sobrecarga	24.17 14.31	0.01 0.02	1.09 0.01	3.15 0.21	1.37 0.38	-0.00 -0.00	23.69 14.31	-0.94 -0.05	0.68 -0.11	3.15 0.21	1.37 0.38	-0.00 -0.00
P417	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	9.12 3.29	0.15 0.11	-0.07 -0.08	0.06 0.04	-0.03 -0.03	-0.00 -0.00	8.77 3.29	-0.05 -0.03	0.04 0.02	0.06 0.04	-0.03 -0.03	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	25.36 16.53	0.17 0.14	-0.06 -0.20	0.13 0.11	-0.07 -0.17	-0.00 -0.00	24.84 16.53	-0.29 -0.23	0.18 0.38	0.13 0.11	-0.07 -0.17	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	35.13 17.14	0.44 0.03	0.48 0.00	-2.37 -0.06	5.28 0.34	-0.00 -0.00	34.49 17.14	1.39 0.06	-1.63 -0.13	-2.37 -0.06	5.28 0.34	-0.00 -0.00
P418	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	11.56 2.47	-0.11 -0.13	-0.28 -0.03	-0.03 -0.04	-0.13 -0.01	-0.00 -0.00	11.21 2.47	-0.01 0.02	0.17 0.01	-0.03 -0.04	-0.13 -0.01	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	26.13 7.15	-0.12 -0.10	-0.13 -0.02	-0.09 -0.08	-0.11 -0.01	-0.00 -0.00	25.79 7.15	0.20 0.19	0.24 0.03	-0.09 -0.08	-0.11 -0.01	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	37.61 7.69	0.24 0.02	0.77 0.02	0.28 0.11	0.24 -0.00	-0.00 -0.00	36.97 7.69	0.13 -0.02	0.67 0.02	0.28 0.11	0.24 -0.00	-0.00 -0.00
P419	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.94 3.08	0.09 0.15	-0.01 0.02	0.02 0.05	-0.00 0.01	-0.00 -0.00	8.59 3.08	0.01 -0.02	-0.00 -0.01	0.02 0.05	0.01 0.01	-0.00 -0.00
	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	23.04 12.44	0.09 0.14	0.01 0.02	0.07 0.11	-0.00 0.01	-0.00 -0.00	22.70 12.44	-0.15 -0.23	0.01 -0.02	0.07 0.11	-0.00 0.01	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	36.19 13.14	0.01 0.04	1.31 0.06	1.82 -0.19	0.10 -0.04	-0.00 -0.00	35.55 13.14	-0.72 0.11	1.27 0.08	1.82 -0.19	0.10 -0.04	-0.00 -0.00
P420	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	12.57 4.28	-0.24 -0.43	-0.89 -0.28	-0.11 -0.15	-0.29 -0.09	-0.00 -0.00	11.47 4.28	0.15 0.10	0.12 0.03	-0.11 -0.15	-0.29 -0.09	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	33.62 23.43	-0.12 -0.31	-0.62 -0.19	-0.11 -0.26	-0.56 -0.19	-0.00 -0.00	32.53 23.43	0.25 0.60	1.31 0.46	-0.11 -0.26	-0.56 -0.19	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	50.14 24.43	0.15 -0.00	1.86 0.08	0.01 0.30	-8.29 -0.30	-0.00 -0.00	49.50 24.43	0.15 -0.12	5.17 0.20	0.01 0.30	-8.29 -0.30	-0.00 -0.00
P421	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	11.68 3.93	0.00 0.13	-0.94 -0.20	0.01 0.05	-0.30 -0.06	-0.00 -0.00	10.58 3.93	-0.03 -0.04	0.12 0.01	0.01 0.05	-0.30 -0.06	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	31.29 20.68	-0.01 0.14	-0.69 -0.13	-0.02 0.09	-0.59 -0.13	-0.00 -0.00	30.20 20.68	0.06 -0.18	1.37 0.34	-0.02 0.09	-0.59 -0.13	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	51.70 21.81	-0.05 0.02	2.11 0.09	2.64 -0.01	-12.83 -0.58	-0.00 -0.00	51.06 21.81	-1.11 0.03	7.24 0.32	2.64 -0.01	-12.83 -0.58	-0.00 -0.00
P422	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	12.39 4.06	0.23 0.02	-1.11 -0.29	0.10 0.02	-0.37 -0.10	-0.00 -0.00	11.29 4.06	-0.13 -0.03	0.20 0.05	0.10 0.02	-0.37 -0.10	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	31.77 21.31	0.13 0.04	-0.76 -0.20	0.09 0.01	-0.65 -0.19	-0.00 -0.00	30.68 21.31	-0.19 0.00	1.50 0.45	0.09 0.01	-0.65 -0.19	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.50	Permanente Sobrecarga	50.20 22.45	0.25 0.02	1.98 0.08	-0.66 0.04	-7.69 -0.32	-0.00 -0.00	49.72 22.45	0.45 0.01	4.29 0.17	-0.66 0.04	-7.69 -0.32	-0.00 -0.00
P423	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	9.58 4.00	-0.00 0.07	-0.07 -0.01	-0.01 0.03	-0.02 -0.00	-0.00 -0.00	9.23 4.00	0.02 -0.02	0.00 0.00	-0.01 0.03	-0.02 -0.00	-0.00 -0.00
	Piso 2	20x40	0.00/3.47	Permanente Sobrecarga	32.39 22.35	0.03 0.12	-0.34 -0.04	0.02 0.09	-0.30 -0.05	-0.00 -0.00	31.69 22.35	-0.04 -0.19	0.72 0.14	0.02 0.09	-0.30 -0.05	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	45.06 23.12	0.17 0.03	1.30 0.05	-0.27 -0.15	-5.19 -0.32	-0.00 -0.00	44.42 23.12	0.28 0.09	3.37 0.18	-0.27 -0.15	-5.19 -0.32	-0.00 -0.00
P424	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	29.36 3.50	0.02 -0.15	-0.00 -0.09	0.05 -0.05	-0.01 -0.03	-0.00 -0.00	29.01 3.50	-0.16 0.04	0.05 0.02	0.05 -0.05	-0.01 -0.03	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	47.23 13.24	-0.15 -0.18	0.18 -0.24	-0.12 -0.14	0.13 -0.19	-0.00 -0.00	46.71 13.24	0.27 0.31	-0.26 0.44	-0.12 -0.14	0.13 -0.19	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	60.70 13.76	0.19 0.01	0.81 0.00	-0.53 0.18	-0.30 0.24	-0.00 -0.00	60.06 13.76	0.41 -0.06	0.93 -0.10	-0.53 0.18	-0.30 0.24	-0.00 -0.00
P425	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	6.48 2.17	0.09 0.04	0.11 0.05	0.02 0.01	0.03 0.02	-0.00 -0.00	6.13 2.17	0.02 0.00	-0.01 -0.01	0.02 0.01	0.03 0.02	-0.00 -0.00
	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	13.36 4.74	0.10 0.04	0.13 0.05	0.08 0.03	0.09 0.03	-0.00 -0.00	13.02 4.74	-0.18 -0.07	-0.18 -0.07	0.08 0.03	0.09 0.03	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	19.49 4.94	-0.03 0.01	1.13 0.06	0.98 0.01	2.33 0.06	-0.00 -0.00	18.85 4.94	-0.42 0.01	0.20 0.03	0.98 0.01	2.33 0.06	-0.00 -0.00
P426	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.44 2.91	0.22 0.17	0.08 0.04	0.07 0.06	0.03 0.02	-0.00 -0.00	8.09 2.91	-0.03 -0.03	-0.03 -0.01	0.07 0.06	0.03 0.02	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	23.20 10.00	0.32 0.23	0.18 0.10	0.24 0.18	0.14 0.08	-0.00 -0.00	22.68 10.00	-0.50 -0.38	-0.30 -0.18	0.24 0.18	0.14 0.08	-0.00 -0.00
	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	35.98 10.61	1.09 0.06	-0.13 -0.01	1.49 -0.15	1.05 -0.05	-0.00 -0.00	35.34 10.61	0.50 0.12	-0.55 0.01	1.49 -0.15	1.05 -0.05	-0.00 -0.00
P427	Piso 3	Diâmetro:40	3.97/7.47	Permanente Sobrecarga	9.13 2.89	0.15 0.14	0.61 0.47	0.06 0.05	0.21 0.16	-0.00 -0.00	8.03 2.89	-0.06 -0.05	-0.14 -0.10	0.06 0.05	0.21 0.16	-0.00 -0.00
	Piso 2	Diâmetro:40	0.00/3.47	Permanente Sobrecarga	23.96 9.32	0.10 0.14	0.70 0.45	0.08 0.09	0.48 0.31	-0.00 -0.00	22.87 9.32	-0.18 -0.19	-0.95 -0.65	0.08 0.09	0.48 0.31	-0.00 -0.00



P428	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	37.36 9.95	0.11 0.03	0.99 0.07	-0.79 -0.17	1.48 -0.37	-0.00 -0.00	36.72 9.95	0.42 0.09	0.40 0.22	-0.79 -0.17	1.48 -0.37	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	7.97 2.66	-0.01 -0.01	0.25 0.16	-0.00 -0.00	0.08 0.06	-0.00 -0.00	7.62 2.66	-0.00 0.00	-0.03 -0.03	-0.00 -0.00	0.08 0.06	-0.00 -0.00
	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	22.01 8.38	-0.01 -0.01	0.25 0.15	-0.01 -0.01	0.18 0.11	-0.00 -0.00	21.66 8.38	0.02 0.02	-0.40 -0.24	-0.01 -0.01	0.18 0.11	-0.00 -0.00
P429	Piso 1	80x80	-0.80/-0.50	Permanente Sobrecarga	38.74 9.20	0.16 0.02	0.97 0.04	-1.04 -0.02	2.67 0.00	-0.00 -0.00	38.26 9.20	0.47 0.02	0.16 0.04	-1.04 -0.02	2.67 0.00	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.51 3.26	0.05 0.10	0.15 0.12	0.02 0.04	0.04 0.04	-0.00 -0.00	8.16 3.26	-0.01 -0.03	0.02 -0.01	0.02 0.04	0.04 0.04	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	24.06 11.81	0.15 0.28	0.29 0.18	0.11 0.22	0.21 0.14	-0.00 -0.00	23.54 11.81	-0.25 -0.47	-0.46 -0.29	0.11 0.22	0.21 0.14	-0.00 -0.00
P430	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	33.17 12.24	0.09 0.04	0.78 0.04	-0.58 -0.33	1.45 -0.10	-0.00 -0.00	32.53 12.24	0.33 0.17	0.20 0.07	-0.58 -0.33	1.45 -0.10	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	14.28 2.38	-0.08 -0.14	0.05 -0.07	-0.02 -0.05	0.07 -0.02	-0.00 -0.00	13.93 2.38	-0.01 0.05	-0.19 0.02	-0.02 -0.05	0.07 -0.02	-0.00 -0.00
	Piso 2	30x20	0.00/3.47	Permanente Sobrecarga	27.93 12.95	-0.28 -0.32	-0.10 -0.07	-0.22 -0.26	-0.09 -0.06	-0.00 -0.00	27.41 12.95	0.48 0.57	0.20 0.14	-0.22 -0.26	-0.09 -0.06	-0.00 -0.00
PE401	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	37.03 13.27	0.09 -0.01	0.63 0.01	-0.52 0.33	1.98 0.15	-0.00 -0.00	36.39 13.27	0.30 -0.15	-0.16 -0.05	-0.52 0.33	1.98 0.15	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.47 1.51	-0.13 0.00	-0.14 0.01	-0.09 0.01	-0.07 0.01	-0.00 -0.00	8.12 1.51	0.17 -0.02	0.09 -0.02	-0.09 0.01	-0.07 0.01	-0.00 -0.00
	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	14.74 1.58	-0.00 -0.01	-0.06 0.01	-0.00 -0.01	-0.05 0.00	-0.00 -0.00	14.40 1.58	0.01 0.02	0.11 -0.00	-0.00 -0.01	-0.05 0.00	-0.00 -0.00
PE402	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	20.20 1.75	0.29 0.03	0.69 0.01	-0.69 -0.00	0.18 -0.02	-0.00 -0.00	19.56 1.75	0.57 0.03	0.62 0.02	-0.69 -0.00	0.18 -0.02	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	22.52 2.64	-0.04 0.04	-0.09 -0.10	-0.08 0.02	-0.06 -0.04	-0.00 -0.00	22.17 2.64	0.26 -0.03	0.12 0.03	-0.08 0.02	-0.06 -0.04	-0.00 -0.00
	Piso 2	20x30	0.00/3.47	Permanente Sobrecarga	34.41 5.56	0.15 0.02	0.02 -0.07	0.12 0.01	0.01 -0.06	-0.00 -0.00	34.06 5.56	-0.26 -0.03	-0.03 0.13	0.12 0.01	0.01 -0.06	-0.00 -0.00
PE403	Piso 1	80x80	-0.80/-0.40	Permanente Sobrecarga	43.81 5.90	0.21 0.02	0.77 0.01	-0.68 -0.03	-0.83 0.01	-0.00 -0.00	43.17 5.90	0.48 0.03	1.10 0.01	-0.68 -0.03	-0.83 0.01	-0.00 -0.00
	Piso 3	20x20	3.97/7.47	Permanente Sobrecarga	8.38 0.92	-0.10 0.03	0.25 0.08	-0.07 0.02	0.19 0.04	-0.00 -0.00	8.03 0.92	0.15 -0.03	-0.42 -0.07	-0.07 0.02	0.19 0.04	-0.00 -0.00
	Piso 2	20x20	0.00/3.47	Permanente Sobrecarga	11.61 2.37	0.01 0.01	-0.04 0.04	0.01 0.01	-0.03 0.03	-0.00 -0.00	11.26 2.37	-0.01 -0.01	0.08 -0.06	0.01 0.01	-0.03 0.03	-0.00 -0.00

5.- ARRANQUES EM PILARES, PILARES-PAREDES E MUROS POR HIPÓTESE

▪ Nota:

Esforços em relação aos eixos locais do pilar.

Pilar	Hipótese(s)	Esforços em elem.fundação					
		N(t)	Mx(t·m)	My(t·m)	Qx(t)	Qy(t)	T(t·m)
P401	Permanente Sobrecarga	31.27	0.38	1.33	1.18	-0.20	-0.00
		9.55	0.06	0.02	-0.15	0.50	-0.00
P402	Permanente Sobrecarga	48.97	0.73	1.09	-3.33	1.48	-0.00
		20.51	0.06	0.03	-0.13	0.24	-0.00
P403	Permanente Sobrecarga	60.09	0.44	1.19	0.40	-1.08	-0.00
		19.00	0.06	0.00	-0.12	0.54	-0.00
P404	Permanente Sobrecarga	45.21	0.24	1.18	2.92	-2.37	-0.00
		18.26	0.02	0.01	0.29	0.29	-0.00
P405	Permanente Sobrecarga	45.50	0.61	0.90	-1.80	-0.14	-0.00
		20.04	0.07	-0.02	-0.32	0.62	-0.00
P406	Permanente Sobrecarga	32.20	0.51	0.81	-0.45	-0.27	-0.00
		9.43	0.03	-0.02	0.19	0.47	-0.00
P407	Permanente Sobrecarga	34.88	0.11	1.04	2.95	3.46	-0.00
		11.22	0.05	0.07	-0.14	-0.10	-0.00
P408	Permanente Sobrecarga	45.08	1.14	-0.42	0.86	1.00	-0.00
		22.95	0.09	-0.01	-0.45	-0.29	-0.00



P409	Permanente	40.72	0.33	0.63	0.17	5.98	-0.00
	Sobrecarga	20.79	0.05	0.06	-0.19	-0.23	-0.00
P410	Permanente	41.91	0.23	1.04	1.93	1.95	-0.00
	Sobrecarga	20.50	0.03	0.07	0.10	-0.26	-0.00
P411	Permanente	47.35	0.51	0.84	-2.12	0.68	-0.00
	Sobrecarga	23.25	0.04	0.13	-0.07	-1.28	-0.00
P412	Permanente	27.88	0.31	0.66	0.42	1.55	-0.00
	Sobrecarga	10.05	0.02	0.04	0.23	-0.21	-0.00
P413	Permanente	27.10	0.33	1.28	-0.93	0.47	-0.00
	Sobrecarga	10.89	0.05	0.05	-0.31	0.10	-0.00
P414	Permanente	23.73	0.22	1.10	0.47	1.34	-0.00
	Sobrecarga	16.74	0.01	0.02	0.26	0.40	-0.00
P415	Permanente	22.40	0.25	1.02	0.14	1.02	-0.00
	Sobrecarga	15.16	0.04	0.02	-0.16	0.36	-0.00
P416	Permanente	24.17	0.01	1.09	3.15	1.37	-0.00
	Sobrecarga	14.31	0.02	0.01	0.21	0.38	-0.00
P417	Permanente	35.13	0.44	0.48	-2.37	5.28	-0.00
	Sobrecarga	17.14	0.03	0.00	-0.06	0.34	-0.00
P418	Permanente	37.61	0.24	0.77	0.28	0.24	-0.00
	Sobrecarga	7.69	0.02	0.02	0.11	-0.00	-0.00
P419	Permanente	36.19	0.01	1.31	1.82	0.10	-0.00
	Sobrecarga	13.14	0.04	0.06	-0.19	-0.04	-0.00
P420	Permanente	50.14	0.15	1.86	0.01	-8.29	-0.00
	Sobrecarga	24.43	-0.00	0.08	0.30	-0.30	-0.00
P421	Permanente	51.70	-0.05	2.11	2.64	-12.83	-0.00
	Sobrecarga	21.81	0.02	0.09	-0.01	-0.58	-0.00
P422	Permanente	50.20	0.25	1.98	-0.66	-7.69	-0.00
	Sobrecarga	22.45	0.02	0.08	0.04	-0.32	-0.00
P423	Permanente	45.06	0.17	1.30	-0.27	-5.19	-0.00
	Sobrecarga	23.12	0.03	0.05	-0.15	-0.32	-0.00
P424	Permanente	60.70	0.19	0.81	-0.53	-0.30	-0.00
	Sobrecarga	13.76	0.01	0.00	0.18	0.24	-0.00
P425	Permanente	19.49	-0.03	1.13	0.98	2.33	-0.00
	Sobrecarga	4.94	0.01	0.06	0.01	0.06	-0.00
P426	Permanente	35.98	1.09	-0.13	1.49	1.05	-0.00
	Sobrecarga	10.61	0.06	-0.01	-0.15	-0.05	-0.00
P427	Permanente	37.36	0.11	0.99	-0.79	1.48	-0.00
	Sobrecarga	9.95	0.03	0.07	-0.17	-0.37	-0.00
P428	Permanente	38.74	0.16	0.97	-1.04	2.67	-0.00
	Sobrecarga	9.20	0.02	0.04	-0.02	0.00	-0.00
P429	Permanente	33.17	0.09	0.78	-0.58	1.45	-0.00
	Sobrecarga	12.24	0.04	0.04	-0.33	-0.10	-0.00
P430	Permanente	37.03	0.09	0.63	-0.52	1.98	-0.00
	Sobrecarga	13.27	-0.01	0.01	0.33	0.15	-0.00
PE401	Permanente	20.20	0.29	0.69	-0.69	0.18	-0.00
	Sobrecarga	1.75	0.03	0.01	-0.00	-0.02	-0.00
PE402	Permanente	43.81	0.21	0.77	-0.68	-0.83	-0.00
	Sobrecarga	5.90	0.02	0.01	-0.03	0.01	-0.00
PE403	Permanente	16.91	0.10	0.57	-0.63	1.82	-0.00
	Sobrecarga	2.53	0.01	0.01	-0.03	0.02	-0.00

6.- DESFAV. PILARES, PILARES-PAREDES E CORTINAS

6.1.- Pilares

- Tramo: Nível inicial / nível final do tramo entre pisos.



- Piso superior: É a seção correspondente à base do tramo superior até o tramo anterior.
- Desfavoráveis: Esforços mais desfavoráveis, correspondentes às combinações atendidas pela armadura atual, mas não atendidas pela armadura anterior da tabela. Inclui a majoração de esforços devida a efeitos de segunda ordem e excentricidade adicional por flambagem. As colunas de esf. desfavoráveis vazias indicam que a seção do pilar é insuficiente.
- Referência: Esforços desfavoráveis, correspondentes às combinações atendidas pela armadura atual, mas não atendidas pela armadura anterior da tabela. Inclui a majoração de esforços devida a efeitos de segunda ordem (mas não inclui flambagem).
- Nota:

Esforços em relação aos eixos locais do pilar.

Pilar	Planta	Dimensão(c m)	Tramo(m)	Desfavoráveis			Referência			
				N(t)	Mx(t· m)	My(t· m)	N(t)	Mx(t· m)	My(t· m)	
P401	Piso 3	20x20	3.97/7.47	18.36	1.43	0.69	18.36	0.42	0.05	
				13.53	1.08	0.52	13.53	0.34	0.05	
				17.87	0.68	1.43	17.87	0.05	0.45	
				13.06	0.51	1.04	13.06	0.06	0.33	
	Piso 2	20x30	0.00/3.47	43.36	3.06	2.11	43.36	0.71	1.12	
				42.63	3.46	3.14	42.63	1.15	2.17	
				31.96	2.65	2.42	31.96	0.92	1.69	
				Piso superior	18.36	1.42	0.68	18.36	0.42	0.05
	Piso 1	80x80	-0.80/-0.40	13.53	1.07	0.51	13.53	0.34	0.05	
				57.15	0.61	3.42	57.15	0.61	1.89	
				43.78	0.53	3.03	43.78	0.53	1.86	
				42.89	0.13	3.12	42.89	0.13	1.97	
Piso superior	80x80	-0.80/-0.40	43.36	1.58	1.12	43.36	0.71	1.12		
			32.42	1.21	0.88	32.42	0.57	0.88		
			24.65	1.50	0.89	24.65	0.15	0.03		
			18.21	1.12	0.68	18.21	0.13	0.04		
P402	Piso 3	20x20	3.97/7.47	24.16	0.88	1.76	24.16	0.04	0.44	
				73.83	1.81	4.09	73.83	0.38	0.47	
				73.10	2.20	4.49	73.10	0.78	0.90	
				Piso superior	24.65	1.49	0.87	24.65	0.15	0.03
	Piso 2	30x20	0.00/3.47	18.21	1.11	0.67	18.21	0.13	0.04	
				97.28	1.10	4.17	97.28	1.10	1.58	
				68.56	1.02	3.36	68.56	1.02	1.53	
				96.39	5.62	0.61	96.39	3.05	0.61	
	Piso 1	80x80	-0.80/-0.40	67.67	4.70	0.70	67.67	2.89	0.70	
				Piso superior	73.83	0.38	1.95	73.83	0.38	0.47
				23.20	0.94	1.43	23.20	0.13	0.16	
				17.14	1.04	0.68	17.14	0.10	0.08	
P403	Piso 3	20x20	3.97/7.47	16.96	0.69	1.15	16.96	0.10	0.22	
				22.71	0.84	1.69	22.71	0.05	0.45	
				72.37	1.77	3.77	72.37	0.35	0.20	
				71.64	1.89	3.97	71.64	0.48	0.42	
	Piso 2	30x20	0.00/3.47							



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

				54.71	1.61	3.36	54.71	0.37	0.40
			Piso superior	23.20	0.93	1.42	23.20	0.13	0.16
				17.14	1.03	0.67	17.14	0.10	0.08
				16.96	0.68	1.14	16.96	0.10	0.22
	Piso 1	80x80	-0.80/-0.40	110.73	0.69	4.62	110.73	0.69	1.66
				84.12	0.62	3.90	84.12	0.62	1.66
				109.79	0.61	4.89	109.79	0.61	1.97
				83.23	0.39	4.48	83.23	0.39	2.26
			Piso superior	72.37	0.35	1.64	72.37	0.35	0.20
P404	Piso 3	20x20	3.97/7.47	23.34	0.81	1.32	23.34	0.00	0.04
				22.85	0.79	1.67	22.85	0.00	0.42
	Piso 2	30x20	0.00/3.47	66.91	1.37	3.86	66.91	0.00	0.47
				66.18	1.53	4.24	66.18	0.17	0.87
			Piso superior	23.34	0.80	1.31	23.34	0.00	0.04
	Piso 1	80x80	-0.80/-0.40	88.86	0.37	4.04	88.86	0.37	1.67
				87.96	1.43	5.19	87.96	1.43	2.84
				62.40	1.30	4.65	62.40	1.30	2.98
			Piso superior	66.91	0.00	1.81	66.91	0.00	0.47
P405	Piso 3	20x20	3.97/7.47	24.46	1.62	0.93	24.46	0.28	0.08
				23.97	0.93	1.73	23.97	0.10	0.42
	Piso 2	30x20	0.00/3.47	72.91	2.15	4.12	72.91	0.73	0.53
				72.18	2.54	4.53	72.18	1.12	0.96
			Piso superior	24.46	1.61	0.91	24.46	0.28	0.08
	Piso 1	80x80	-0.80/-0.40	91.76	0.96	3.68	91.76	0.96	1.23
				63.70	0.86	2.96	63.70	0.86	1.26
				90.86	4.57	0.96	90.86	2.15	0.96
				62.81	3.54	1.34	62.81	1.87	1.34
			Piso superior	72.91	0.73	1.98	72.91	0.73	0.53
P406	Piso 3	20x20	3.97/7.47	18.84	1.32	0.73	18.84	0.29	0.08
				13.87	1.00	0.55	13.87	0.24	0.07
				18.35	0.77	1.44	18.35	0.13	0.44
	Piso 2	20x30	0.00/3.47	43.19	2.91	2.18	43.19	0.57	1.20
				42.46	3.33	3.14	42.46	1.03	2.18
				31.77	2.54	2.42	31.77	0.82	1.70
			Piso superior	18.84	1.31	0.72	18.84	0.29	0.08
				13.87	1.00	0.54	13.87	0.24	0.07
	Piso 1	80x80	-0.80/-0.40	58.28	0.75	2.66	58.28	0.75	1.10
				45.08	0.71	2.33	45.08	0.71	1.13
				57.42	0.90	2.50	57.42	0.90	0.97
				44.18	0.96	2.46	44.18	0.96	1.28
			Piso superior	43.19	1.43	1.20	43.19	0.57	1.20
				32.24	1.10	0.94	32.24	0.45	0.94
P407	Piso 3	20x20	3.97/7.47	15.59	0.95	1.29	15.59	0.40	0.44
				11.45	0.96	0.73	11.45	0.34	0.33
	Piso 2	20x30	0.00/3.47	48.72	3.21	2.20	48.72	0.57	1.09
				47.99	3.53	2.72	47.99	0.93	1.63
				36.26	2.74	2.06	36.26	0.77	1.23
			Piso superior	15.59	0.94	1.28	15.59	0.40	0.44
				11.45	0.96	0.72	11.45	0.34	0.33



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P408	Piso 1	80x80	-0.80/-0.40	64.53	0.22	3.28	64.53	0.22	1.56		
				48.82	0.17	2.76	48.82	0.17	1.46		
				63.64	3.05	0.32	63.64	1.35	0.32		
				47.93	2.78	0.47	47.93	1.50	0.47		
				Piso superior	48.72	1.55	1.09	48.72	0.57	1.09	
	Piso 3	20x20	3.97/7.47	19.99	1.91	0.86	19.99	0.82	0.16		
				14.74	1.46	0.64	14.74	0.66	0.13		
	Piso 2	20x40	0.00/3.47	79.74	5.50	0.96	79.74	1.31	0.96		
				78.77	6.26	1.90	78.77	2.10	1.90		
				Piso superior	19.99	1.90	0.84	19.99	0.82	0.16	
Piso 1	80x80	-0.80/-0.40	14.74	1.45	0.63	14.74	0.66	0.13			
			95.24	4.26	0.61	95.24	1.72	0.61			
			63.11	3.28	0.59	63.11	1.60	0.59			
			94.35	4.00	1.01	94.35	1.49	1.01			
Piso superior	80x80	-0.80/-0.40	62.20	1.12	2.81	62.20	1.12	1.15			
			79.74	2.90	0.96	79.74	1.31	0.96			
			19.33	0.77	1.75	19.33	0.10	0.69			
			14.24	0.57	1.34	14.24	0.07	0.56			
			Piso 3	20x20	3.97/7.47	69.28	0.58	4.85	69.28	0.58	1.09
Piso 2	40x20	0.00/3.47	68.31	0.77	5.45	68.31	0.77	1.75			
			Piso superior	19.33	0.76	1.74	19.33	0.10	0.69		
			14.24	0.56	1.34	14.24	0.07	0.56			
Piso 1	80x80	-0.80/-0.40	86.11	0.53	3.27	86.11	0.53	0.97			
			57.01	0.46	2.41	57.01	0.46	0.89			
			85.22	0.53	4.52	85.22	0.53	2.25			
			56.12	0.35	3.96	56.12	0.35	2.46			
			Piso superior	69.28	0.58	2.48	69.28	0.58	1.09		
P410	Piso 3	20x20	3.97/7.47	18.94	0.71	1.80	18.94	0.05	0.77		
				13.97	0.54	1.19	13.97	0.05	0.43		
				13.95	0.52	1.38	13.95	0.04	0.61		
	Piso 2	30x20	0.00/3.47	72.28	1.58	4.49	72.28	0.16	0.92		
				44.21	1.15	2.90	44.21	0.14	0.51		
				71.56	1.57	5.04	71.56	0.16	1.49		
				43.48	1.18	3.17	43.48	0.19	0.82		
	Piso superior	30x20	0.00/3.47	18.94	0.70	1.79	18.94	0.05	0.77		
				13.97	0.53	1.19	13.97	0.05	0.43		
				13.95	0.52	1.37	13.95	0.04	0.61		
Piso 1				80x80	-0.80/-0.50	87.37	0.38	3.88	87.37	0.38	1.55
Piso superior				80x80	-0.80/-0.50	58.68	0.33	3.02	58.68	0.33	1.45
	86.70	0.48	3.15			86.70	0.48	0.84			
	58.01	0.48	2.18			58.01	0.48	0.63			
	72.28	0.16	2.36			72.28	0.16	0.92			
Piso superior	80x80	-0.80/-0.50	44.21	0.14	1.39	44.21	0.14	0.51			
			Piso 3	20x20	3.97/7.47	20.25	0.88	1.69	20.25	0.18	0.58
			Piso 2	20x40	0.00/3.47	14.93	0.68	1.29	14.93	0.16	0.47
						81.73	4.54	3.55	81.73	0.28	3.55
						80.75	4.65	5.84	80.75	0.42	5.84
Piso superior	20x40	0.00/3.47	63.25	3.82	4.77	63.25	0.39	4.77			
			20.25	0.87	1.68	20.25	0.18	0.58			



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

				14.93	0.67	1.28	14.93	0.16	0.47
	Piso 1	80x80	-0.80/-0.40	98.84	0.77	3.99	98.84	0.77	1.35
				97.86	4.61	1.73	97.86	2.00	1.73
				74.59	1.32	3.39	74.59	1.32	1.40
				65.37	3.64	0.80	65.37	1.90	0.80
			Piso superior	81.73	1.91	3.55	81.73	0.28	3.55
				63.89	1.50	2.89	63.89	0.22	2.89
P412	Piso 3	20x20	3.97/7.47	14.98	0.89	1.23	14.98	0.36	0.41
				11.09	0.70	0.92	11.09	0.31	0.32
	Piso 2	20x30	0.00/3.47	40.72	2.72	1.93	40.72	0.51	1.01
				40.00	3.08	2.53	40.00	0.91	1.62
				30.59	2.42	1.93	30.59	0.77	1.24
			Piso superior	14.98	0.88	1.22	14.98	0.36	0.41
				11.09	0.69	0.92	11.09	0.31	0.32
	Piso 1	80x80	-0.80/-0.40	53.10	0.46	2.39	53.10	0.46	0.98
				39.03	0.43	1.97	39.03	0.43	0.93
			Piso superior	40.72	1.32	1.01	40.72	0.51	1.01
				31.03	1.05	0.77	31.03	0.43	0.77
P413	Piso 3	20x20	3.97/7.47	13.26	0.98	0.59	13.26	0.26	0.13
				9.72	0.76	0.44	9.72	0.22	0.11
	Piso 2	20x30	0.00/3.47	39.71	2.53	1.06	39.71	0.38	0.15
				38.98	2.73	1.39	38.98	0.62	0.51
				30.16	2.16	1.10	30.16	0.53	0.42
			Piso superior	13.26	0.98	0.59	13.26	0.26	0.13
				9.72	0.75	0.44	9.72	0.22	0.11
	Piso 1	80x80	-0.80/-0.40	53.17	0.54	3.28	53.17	0.54	1.86
				37.93	0.46	2.80	37.93	0.46	1.79
				52.28	1.23	2.94	52.28	1.23	1.54
				37.04	0.98	2.51	37.04	0.98	1.52
			Piso superior	39.71	1.18	0.15	39.71	0.38	0.15
				30.63	0.94	0.12	30.63	0.33	0.12
P414	Piso 3	Diâmetro:40	3.97/7.47	19.25	0.97	1.41	19.25	0.75	1.10
				14.08	0.80	1.17	14.08	0.64	0.94
	Piso 2	Diâmetro:40	0.00/3.47	51.64	1.29	1.05	51.64	0.49	0.40
				50.12	1.70	2.07	50.12	1.06	1.30
				40.34	1.39	1.82	40.34	0.90	1.18
			Piso superior	19.25	0.97	1.41	19.25	0.75	1.10
				14.08	0.80	1.17	14.08	0.64	0.94
	Piso 1	80x80	-0.80/-0.40	56.66	0.32	3.09	56.66	0.32	1.57
				33.23	0.31	2.43	33.23	0.31	1.55
			Piso superior	51.64	1.29	1.05	51.64	0.49	0.40
				41.34	0.96	1.01	41.34	0.39	0.41
P415	Piso 3	Diâmetro:40	3.97/7.47	17.93	0.66	1.37	17.93	0.51	1.04
				13.09	0.51	1.15	13.09	0.40	0.91
	Piso 2	Diâmetro:40	0.00/3.47	47.72	1.20	0.89	47.72	0.43	0.32
				46.20	0.93	1.92	46.20	0.53	1.09
				37.06	0.70	1.73	37.06	0.42	1.04
			Piso superior	17.93	0.66	1.37	17.93	0.51	1.04
				13.09	0.51	1.15	13.09	0.40	0.91



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

	Piso 1	80x80	-0.80/-0.40	52.58	0.40	2.86	52.58	0.40	1.45	
				31.36	0.35	2.27	31.36	0.35	1.43	
				51.69	0.41	2.06	51.69	0.41	0.68	
		Piso superior			47.72	1.20	0.89	47.72	0.43	0.32
					38.04	0.86	0.92	38.04	0.34	0.37
P416	Piso 3	Diâmetro:40	3.97/7.47	18.49	0.55	1.50	18.49	0.42	1.15	
				13.51	0.47	1.22	13.51	0.37	0.97	
	Piso 2	Diâmetro:40	0.00/3.47	45.07	0.99	1.10	45.07	0.38	0.43	
				43.54	1.42	1.90	43.54	0.90	1.20	
				34.90	1.15	1.67	34.90	0.75	1.10	
		Piso superior			18.49	0.55	1.50	18.49	0.42	1.15
13.51					0.47	1.22	13.51	0.37	0.97	
	Piso 1	80x80	-0.80/-0.50	53.88	0.00	2.98	53.88	0.00	1.54	
				41.79	0.03	2.11	41.79	0.03	0.99	
				33.84	0.00	2.43	33.84	0.00	1.53	
		Piso superior			53.21	2.80	0.80	53.21	1.38	0.80
					33.19	2.20	0.95	33.19	1.31	0.95
					45.07	0.99	1.10	45.07	0.38	0.43
				35.90	0.72	1.02	35.90	0.31	0.43	
P417	Piso 3	20x20	3.97/7.47	17.38	1.32	0.83	17.38	0.37	0.22	
				12.82	0.99	0.63	12.82	0.29	0.18	
	Piso 2	20x30	0.00/3.47	58.64	3.55	1.65	58.64	0.44	0.36	
				57.91	3.80	2.05	57.91	0.72	0.77	
				45.51	3.03	1.72	45.51	0.57	0.68	
		Piso superior			17.38	1.31	0.82	17.38	0.37	0.22
12.82					0.99	0.62	12.82	0.29	0.18	
	Piso 1	80x80	-0.80/-0.40	73.18	0.67	2.62	73.18	0.67	0.67	
				72.28	2.03	4.40	72.28	2.03	2.47	
				48.29	1.95	3.58	48.29	1.95	2.29	
				58.64	1.61	0.36	58.64	0.44	0.36	
P418	Piso 3	20x20	3.97/7.47	19.64	1.01	1.51	19.64	0.33	0.43	
				16.19	0.71	1.28	16.19	0.15	0.39	
				13.86	0.76	1.05	13.86	0.27	0.29	
	Piso 2	20x30	0.00/3.47	46.59	2.83	1.27	46.59	0.31	0.20	
				46.10	3.05	1.43	46.10	0.55	0.38	
				36.10	2.24	1.16	36.10	0.29	0.33	
	Piso superior			33.20	2.24	1.03	33.20	0.45	0.28	
				19.64	1.00	1.50	19.64	0.33	0.43	
				16.19	0.70	1.27	16.19	0.15	0.39	
				13.86	0.75	1.04	13.86	0.27	0.29	
	Piso 1	80x80	-0.80/-0.40	63.41	0.36	2.79	63.41	0.36	1.10	
				52.67	0.30	2.48	52.67	0.30	1.07	
				46.59	1.24	0.20	46.59	0.31	0.20	
				36.59	0.89	0.18	36.59	0.16	0.18	
P419	Piso 3	20x20	3.97/7.47	16.83	1.25	0.60	16.83	0.33	0.01	
				12.36	0.96	0.44	12.36	0.28	0.01	
				12.04	0.67	0.43	12.04	0.02	0.01	
	Piso 2	20x20	0.00/3.47	49.68	2.75	1.48	49.68	0.33	0.05	
				49.19	2.95	1.43	49.19	0.54	0.00	



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

				37.84	2.49	1.30	37.84	0.46	0.04
			Piso superior	16.83	1.24	0.59	16.83	0.33	0.01
				12.36	0.95	0.43	12.36	0.28	0.01
	Piso 1	80x80	-0.80/-0.40	69.06	0.06	3.76	69.06	0.06	1.92
				50.66	0.00	3.18	50.66	0.00	1.83
				68.14	0.84	3.71	68.14	0.84	1.89
				49.77	1.00	3.10	49.77	1.00	1.77
			Piso superior	49.68	1.32	0.05	49.68	0.33	0.05
P420	Piso 3	Diâmetro:40	3.97/7.47	23.59	1.18	2.06	23.59	0.94	1.65
				17.60	0.43	1.59	17.60	0.34	1.25
				17.27	1.02	1.49	17.27	0.82	1.20
	Piso 2	Diâmetro:40	0.00/3.47	79.88	1.36	2.54	79.88	0.61	1.13
				78.35	1.87	3.89	78.35	1.19	2.48
				62.08	1.69	2.89	62.08	1.07	1.82
				45.55	0.51	2.73	45.55	0.35	1.84
			Piso superior	23.59	1.18	2.06	23.59	0.94	1.65
				17.60	0.43	1.59	17.60	0.34	1.25
				17.27	1.02	1.49	17.27	0.82	1.20
	Piso 1	80x80	-0.80/-0.40	104.39	0.21	5.49	104.39	0.21	2.71
				70.19	0.21	4.47	70.19	0.21	2.60
				103.49	0.00	10.28	103.49	0.00	7.52
				69.29	0.21	9.09	69.29	0.21	7.24
			Piso superior	79.88	1.36	2.54	79.88	0.61	1.13
				63.06	1.24	1.87	63.06	0.54	0.82
				47.07	0.36	1.79	47.07	0.17	0.87
P421	Piso 3	Diâmetro:40	3.97/7.47	21.86	0.24	2.03	21.86	0.19	1.59
				16.36	0.00	1.64	16.36	0.00	1.31
				16.02	0.24	1.44	16.02	0.19	1.13
	Piso 2	Diâmetro:40	0.00/3.47	72.75	0.43	2.58	72.75	0.19	1.14
				57.11	0.47	1.91	57.11	0.20	0.80
				71.22	0.30	3.81	71.22	0.19	2.39
				56.13	0.32	2.82	56.13	0.20	1.70
				42.27	0.16	2.76	42.27	0.11	1.92
			Piso superior	21.86	0.24	2.03	21.86	0.19	1.59
				16.36	0.00	1.64	16.36	0.00	1.31
				16.02	0.24	1.44	16.02	0.19	1.13
	Piso 1	80x80	-0.80/-0.40	102.91	0.00	5.82	102.91	0.00	3.07
				102.01	1.52	13.30	102.01	1.52	10.58
				71.48	1.56	12.04	71.48	1.56	10.13
			Piso superior	72.75	0.43	2.58	72.75	0.19	1.14
				57.11	0.47	1.91	57.11	0.20	0.80
				43.80	0.00	1.84	43.80	0.00	0.97
P422	Piso 3	Diâmetro:40	3.97/7.47	23.02	0.43	2.42	23.02	0.35	1.96
				17.34	0.39	1.89	17.34	0.32	1.55
	Piso 2	Diâmetro:40	0.00/3.47	74.31	0.49	2.81	74.31	0.23	1.34
				44.48	0.33	1.94	44.48	0.18	1.06
				72.79	0.35	4.18	72.79	0.23	2.72
				42.95	0.36	2.95	42.95	0.26	2.10
			Piso superior	23.02	0.43	2.42	23.02	0.35	1.96



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

				17.34	0.39	1.89	17.34	0.32	1.55
	Piso 1	80x80	-0.80/-0.50	101.71	0.38	5.59	101.71	0.38	2.88
				101.04	0.65	8.93	101.04	0.65	6.24
				69.61	0.63	7.86	69.61	0.63	6.00
			Piso superior	74.31	0.49	2.81	74.31	0.23	1.34
				44.48	0.33	1.94	44.48	0.18	1.06
P423	Piso 3	20x20	3.97/7.47	19.00	0.76	1.15	19.00	0.09	0.11
				14.21	0.87	0.57	14.21	0.10	0.08
				13.41	0.47	0.83	13.41	0.00	0.10
	Piso 2	20x40	0.00/3.47	76.63	4.30	0.53	76.63	0.21	0.53
				75.66	4.38	1.21	75.66	0.33	1.21
				59.81	3.55	0.85	59.81	0.31	0.85
				44.37	2.44	1.01	44.37	0.04	1.01
			Piso superior	19.00	0.74	1.14	19.00	0.09	0.11
				14.21	0.87	0.57	14.21	0.10	0.08
				13.41	0.46	0.82	13.41	0.00	0.10
	Piso 1	80x80	-0.80/-0.40	95.45	0.29	4.43	95.45	0.29	1.89
				94.56	0.53	7.50	94.56	0.53	4.97
				62.19	0.40	6.38	62.19	0.40	4.72
			Piso superior	76.63	1.74	0.53	76.63	0.21	0.53
				45.34	0.95	0.47	45.34	0.04	0.47
P424	Piso 3	20x20	3.97/7.47	46.00	2.52	1.54	46.00	0.19	0.13
				31.32	1.91	1.21	31.32	0.19	0.12
				40.61	2.37	1.40	40.61	0.22	0.06
	Piso 2	20x30	0.00/3.47	84.66	4.42	1.59	84.66	0.46	0.08
				66.12	3.58	1.62	66.12	0.21	0.26
				83.93	4.75	1.74	83.93	0.81	0.23
				65.40	3.70	1.72	65.40	0.36	0.36
				60.57	3.85	1.68	60.57	0.67	0.38
			Piso superior	46.00	2.49	1.51	46.00	0.19	0.13
				31.32	1.89	1.19	31.32	0.19	0.12
	Piso 1	80x80	-0.80/-0.40	104.24	0.28	3.91	104.24	0.28	1.13
				84.99	0.23	3.40	84.99	0.23	1.13
				103.39	0.48	3.88	103.39	0.48	1.12
				84.08	0.57	3.54	84.08	0.57	1.30
			Piso superior	84.66	2.15	0.08	84.66	0.46	0.08
				66.12	1.54	0.26	66.12	0.21	0.26
				61.04	1.60	0.17	61.04	0.38	0.17
P425	Piso 3	20x20	3.97/7.47	12.12	0.60	0.88	12.12	0.18	0.22
	Piso 2	20x20	0.00/3.47	25.34	1.07	1.62	25.34	0.21	0.24
				24.86	1.69	1.19	24.86	0.35	0.34
			Piso superior	12.12	0.59	0.88	12.12	0.18	0.22
	Piso 1	80x80	-0.80/-0.40	34.19	0.00	2.58	34.19	0.00	1.67
				27.28	0.04	2.31	27.28	0.04	1.59
				33.30	1.47	0.33	33.30	0.58	0.33
				26.38	1.30	0.28	26.38	0.59	0.28
			Piso superior	25.34	0.21	0.75	25.34	0.21	0.24
P426	Piso 3	20x20	3.97/7.47	15.90	1.42	0.72	15.90	0.54	0.17
				11.68	1.08	0.53	11.68	0.44	0.12



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

	Piso 2	20x30	0.00/3.47	46.47	3.30	1.44	46.47	0.78	0.38	
				45.75	3.71	1.72	45.75	1.23	0.68	
				34.43	2.85	1.30	34.43	0.98	0.51	
	Piso superior				15.90	1.41	0.71	15.90	0.54	0.17
					11.68	1.07	0.52	11.68	0.44	0.12
	Piso 1	80x80	-0.80/-0.40	65.23	3.36	0.19	65.23	1.62	0.19	
				50.38	2.87	0.15	50.38	1.53	0.15	
				64.34	2.59	0.75	64.34	0.87	0.75	
	Piso superior				49.52	0.67	2.09	49.52	0.67	0.76
					46.47	1.71	0.38	46.47	0.78	0.38
P427	Piso 3	Diâmetro:40	3.97/7.47	16.82	0.48	1.82	16.82	0.40	1.50	
				12.26	0.39	1.43	12.26	0.32	1.20	
	Piso 2	Diâmetro:40	0.00/3.47		46.59	0.52	2.52	46.59	0.33	1.61
					45.06	0.71	3.12	45.06	0.51	2.24
					33.63	0.58	2.42	33.63	0.42	1.76
	Piso superior				16.82	0.48	1.82	16.82	0.40	1.50
					12.26	0.39	1.43	12.26	0.32	1.20
	Piso 1	80x80	-0.80/-0.40		66.23	0.19	3.25	66.23	0.19	1.48
					52.30	0.15	2.78	52.30	0.15	1.38
65.34					0.73	2.61	65.34	0.73	0.87	
51.41					1.96	0.55	51.41	0.59	0.55	
Piso superior				46.59	0.52	2.52	46.59	0.33	1.61	
				34.61	0.43	1.93	34.61	0.28	1.26	
P428	Piso 3	20x20	3.97/7.47	14.88	0.54	1.39	14.88	0.03	0.57	
				10.90	0.40	1.05	10.90	0.02	0.45	
	Piso 2	20x20	0.00/3.47		42.54	1.34	2.74	42.54	0.00	0.55
					42.05	1.38	3.07	42.05	0.05	0.89
	Piso superior				14.88	0.53	1.38	14.88	0.03	0.57
					10.90	0.39	1.04	10.90	0.02	0.45
	Piso 1	80x80	-0.80/-0.50		67.13	0.25	3.20	67.13	0.25	1.41
					54.25	0.20	2.80	54.25	0.20	1.35
66.45					2.47	0.29	66.45	0.69	0.29	
53.57					2.09	0.23	53.57	0.66	0.23	
Piso superior				42.54	0.00	1.40	42.54	0.00	0.55	
P429	Piso 3	20x20	3.97/7.47	16.47	0.78	1.28	16.47	0.21	0.38	
				12.22	0.61	0.97	12.22	0.19	0.31	
	Piso 2	30x20	0.00/3.47		50.22	1.74	3.37	50.22	0.60	0.65
					49.49	2.13	3.73	49.49	1.01	1.05
					37.76	1.74	2.85	37.76	0.88	0.80
	Piso superior				16.47	0.77	1.27	16.47	0.21	0.38
					12.22	0.60	0.97	12.22	0.19	0.31
	Piso 1	80x80	-0.80/-0.40		63.58	0.18	2.83	63.58	0.18	1.14
					46.44	0.13	2.33	46.44	0.13	1.09
62.68					2.36	0.38	62.68	0.69	0.38	
Piso superior				50.22	0.60	1.66	50.22	0.60	0.65	
				38.21	0.53	1.26	38.21	0.53	0.50	
P430	Piso 3	20x20	3.97/7.47	23.33	1.58	0.83	23.33	0.30	0.02	
				19.99	1.20	0.76	19.99	0.11	0.07	
				16.19	1.15	0.61	16.19	0.26	0.05	



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

				22.84	0.85	1.50	22.84	0.05	0.25
				19.50	0.68	1.34	19.50	0.00	0.27
				15.87	0.61	1.02	15.87	0.06	0.15
	Piso 2	30x20	0.00/3.47	57.23	2.12	3.30	57.23	0.84	0.25
				56.50	2.74	3.50	56.50	1.48	0.48
				42.81	2.21	2.68	42.81	1.24	0.36
			Piso superior	23.33	1.56	0.82	23.33	0.30	0.02
				19.99	1.19	0.75	19.99	0.11	0.07
				16.19	1.14	0.60	16.19	0.26	0.05
	Piso 1	80x80	-0.80/-0.40	70.42	0.10	2.77	70.42	0.10	0.89
				51.84	0.12	2.26	51.84	0.12	0.88
				69.52	0.21	2.15	69.52	0.21	0.30
				50.94	1.77	0.22	50.94	0.42	0.22
			Piso superior	57.23	0.84	1.39	57.23	0.84	0.25
				43.27	0.70	1.05	43.27	0.70	0.19
PE401	Piso 3	20x20	3.97/7.47	13.97	0.66	0.95	13.97	0.17	0.18
				11.86	0.59	0.85	11.86	0.18	0.20
				13.48	0.95	0.57	13.48	0.21	0.10
				11.37	0.86	0.52	11.37	0.24	0.12
	Piso 2	20x20	0.00/3.47	22.86	0.78	1.31	22.86	0.00	0.07
				22.37	0.81	1.36	22.37	0.04	0.15
				20.16	0.69	1.25	20.16	0.00	0.16
			Piso superior	13.97	0.65	0.94	13.97	0.17	0.18
				11.86	0.58	0.84	11.86	0.18	0.20
	Piso 1	80x80	-0.80/-0.40	30.73	0.45	1.81	30.73	0.45	0.99
				28.28	0.41	1.73	28.28	0.41	0.97
				29.84	0.83	1.70	29.84	0.83	0.90
				27.35	0.79	1.61	27.35	0.79	0.88
			Piso superior	22.86	0.00	0.53	22.86	0.00	0.07
PE402	Piso 3	20x20	3.97/7.47	35.22	1.22	2.19	35.22	0.00	0.26
				23.96	0.85	1.53	23.96	0.02	0.22
				34.73	2.22	1.42	34.73	0.31	0.21
				31.03	2.06	1.27	31.03	0.36	0.19
	Piso 2	20x30	0.00/3.47	55.96	3.25	1.33	55.96	0.24	0.07
				55.47	3.39	1.39	55.47	0.40	0.14
				47.69	2.95	1.14	47.69	0.36	0.06
				38.44	2.36	1.03	38.44	0.28	0.15
			Piso superior	35.22	1.20	2.17	35.22	0.00	0.26
				31.53	1.13	1.83	31.53	0.05	0.13
				23.96	0.84	1.51	23.96	0.02	0.22
	Piso 1	80x80	-0.80/-0.40	69.60	0.32	2.95	69.60	0.32	1.10
				68.70	0.72	3.38	68.70	0.72	1.55
				60.48	0.63	3.16	60.48	0.63	1.54
			Piso superior	55.96	1.36	0.07	55.96	0.24	0.07
PE403	Piso 3	20x20	3.97/7.47	13.02	0.55	1.18	13.02	0.10	0.47
				11.73	0.55	0.99	11.73	0.14	0.35
				12.53	0.60	1.37	12.53	0.16	0.68
				11.24	0.60	1.20	11.24	0.20	0.59
				8.51	0.39	0.94	8.51	0.09	0.47
	Piso 2	20x20	0.00/3.47	19.58	1.09	0.67	19.58	0.03	0.00



				16.26	0.56	0.93	16.26	0.00	0.05
				19.10	1.06	0.68	19.10	0.03	0.02
				15.77	0.56	0.97	15.77	0.02	0.11
			Piso superior	13.02	0.55	1.17	13.02	0.10	0.47
				11.73	0.54	0.98	11.73	0.14	0.35
				8.83	0.35	0.82	8.83	0.05	0.34
	Piso 1	80x80	-0.80/-0.40	27.22	0.15	1.53	27.22	0.15	0.81
				23.67	0.13	1.42	23.67	0.13	0.79
				26.32	1.23	0.22	26.32	0.52	0.22
				22.77	1.10	0.23	22.77	0.49	0.23
			Piso superior	19.58	0.42	0.00	19.58	0.03	0.00
				16.26	0.00	0.38	16.26	0.00	0.05
				13.77	0.29	0.02	13.77	0.02	0.02

7.- RELATÓRIO QUANTITATIVOS PILARES

Aço em barras e estribos:CA-50-A e CA-60-B

Piso 1:Piso 1 Concreto:C25, em geral

Referência	Dimensões m	Formas m2	Concreto m3	Diam.	Nº	Comprimento cm.	Total cm.	A.barras Kg.	A.estribos Kg.
P401 P403 P404 P406 P409 P412 P413 P414 P415 P417 P418 P419	0.80x0.80	1.3	0.26	Ø20 Ø20 Ø16 Ø16 Ø6.3 Ø6.3	4 4 10 6 9 6	120 195 105 165 90 274	480 780 1050 990 810 1644	11.87 19.29 16.49 15.54	2.00 4.07 121.40
P402 P405 P407 P425 PE403	0.80x0.80	1.3	0.26	Ø20 Ø20 Ø16 Ø16 Ø6.3 Ø6.3	4 4 10 6 9 6	120 195 105 165 90 274	480 780 1050 990 810 1644	11.87 19.29 16.49 15.54	2.00 4.07 30.35
P408 P426 (x2)	0.80x0.80	1.3	0.26	Ø20 Ø20 Ø16 Ø16 Ø6.3 Ø6.3	4 4 10 8 9 6	120 195 105 165 90 274	480 780 1050 1320 810 1644	11.87 19.29 16.49 20.72	2.00 4.07 12.14
P410 P416 P422	0.80x0.80	1.0	0.19	Ø20 Ø20 Ø16 Ø16 Ø6.3 Ø6.3	4 4 10 8 9 6	110 205 95 175 90 274	440 820 950 1400 810 1644	10.88 20.28 14.92 21.98	2.00 4.07 18.21
P411 PE402 (x2)	0.80x0.80	1.3	0.26	Ø25 Ø25 Ø8 Ø8	8 6 3 3	135 230 311 231	1080 1380 933 693	42.39 54.17	3.66 2.72 12.76



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P428	0.80x0.80	1.0	0.19	Ø20	4	110	440	10.88	2.00 4.07
				Ø20	4	205	820	20.28	
				Ø16	10	95	950	14.92	
				Ø16	4	175	700	10.99	
				Ø6.3	9	90	810		
				Ø6.3	6	274	1644		
Total piso 1			8.30					2170.90	201.00

Aço em barras e estribos:CA-50-A e CA-60-B

Piso 2:Piso 2 Concreto:C25, em geral

Referência	Dimensões m	Formas m2	Concreto m3	Diam.	Nº	Comprimento cm.	Total cm.	A.barras Kg.	A.estribos Kg.		
P401 P406	0.20x0.30	3.5	0.21	Ø16	8	460	3680	57.78			
P407						Ø6.3	19	89	1691		4.18
P417						Ø6.3	19	30	570		1.41
		14.0	0.84					231.12	22.36		
P402	0.30x0.20	3.5	0.21	Ø20	4	475	1900	46.98			
						Ø16	6	460	2760	43.33	
						Ø6.3	19	90	1710		4.23
						Ø6.3	19	30	570		1.41
P403 P404	0.30x0.20	3.5	0.21	Ø16	8	460	3680	57.78			
(x2)						Ø6.3	38	75	2850		7.05
		7.0	0.42					115.56	14.10		
P405	0.30x0.20	3.5	0.21	Ø20	4	475	1900	46.98			
						Ø16	4	460	1840	28.89	
						Ø10	2	435	870	5.46	
						Ø6.3	60	76	4560		11.28
P408	0.20x0.40	4.2	0.28	Ø20	4	425	1700	42.04			
						Ø20	4	205	820	20.28	
						Ø16	2	410	820	12.87	
						Ø16	2	175	350	5.50	
						Ø16	4	460	1840	28.89	
						Ø6.3	38	90	3420		8.46
P409	0.40x0.20	4.2	0.28	Ø20	4	425	1700	42.04			
						Ø20	4	205	820	20.28	
						Ø12.5	2	445	890	8.73	
						Ø6.3	25	110	2750		6.80
						Ø6.3	25	29	725		1.79
P410	0.30x0.20	3.5	0.21	Ø20	4	475	1900	46.98			
						Ø16	4	460	1840	28.89	
						Ø6.3	38	76	2888		7.14
P411	0.20x0.40	4.2	0.28	Ø20	4	425	1700	42.04			
						Ø20	4	205	820	20.28	
						Ø16	4	410	1640	25.75	
						Ø16	2	175	350	5.50	
						Ø16	2	460	920	14.44	
						Ø6.3	19	110	2090		5.17
						Ø6.3	19	30	570		1.41
P412	0.20x0.30	3.5	0.21	Ø12.5	8	445	3560	34.93			
						Ø5	50	75	3750		5.89
P413	0.20x0.30	3.5	0.21	Ø10	6	435	2610	16.39			
						Ø5	30	88	2640		4.14
						Ø5	30	28	840		1.32
P414 P415	Diâm:0.40	4.4	0.44	Ø10	8	435	3480	21.85			
P416						Ø5	30	117	3510		5.51
P420 P421											
P422		30.8	3.08					152.95	38.57		



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P418	0.20x0.30	3.5	0.21	Ø12.5 Ø5 Ø5	6 25 25	445 89 29	2670 2225 725	26.20	3.49 1.14
P419	0.20x0.20	2.8	0.14	Ø20 Ø16 Ø6.3	4 2 19	475 460 70	1900 920 1330	46.98 14.44	3.29
P423	0.20x0.40	4.2	0.28	Ø12.5 Ø12.5 Ø12.5 Ø5	4 4 4 50	395 145 445 87	1580 580 1780 4350	15.50 5.69 17.47	6.83
P424	0.20x0.30	3.5	0.21	Ø20 Ø16 Ø6.3	4 6 38	475 460 76	1900 2760 2888	46.98 43.33	7.14
P425	0.20x0.20	2.8	0.14	Ø12.5 Ø5	4 25	445 69	1780 1725	17.47	2.71
P426	0.20x0.30	3.5	0.21	Ø16 Ø10 Ø6.3	4 4 60	460 435 75	1840 1740 4500	28.89 10.93	11.13
P428	0.20x0.20	2.8	0.14	Ø20 Ø16 Ø6.3	4 2 19	475 460 70	1900 920 1330	46.98 14.44	3.29
P429	0.30x0.20	3.5	0.21	Ø20 Ø6.3	4 19	475 90	1900 1710	46.98	4.23
P430	0.30x0.20	3.5	0.21	Ø20 Ø12.5 Ø6.3 Ø6.3	4 2 25 25	475 445 90 29	1900 890 2250 725	46.98 8.73	5.56 1.79
PE401 PE403 (x2)	0.20x0.20	2.8 5.6	0.14 0.28	Ø10 Ø5	4 30	435 68	1740 2040	10.93	3.20 6.40
PE402	0.20x0.30	3.5	0.21	Ø16 Ø12.5 Ø6.3 Ø6.3	4 2 25 25	460 445 89 29	1840 890 2225 725	28.89 8.73	5.50 1.79
Total piso 2			8.47					1584.50	198.40

Aço em barras e estribos:CA-50-A e CA-60-B

Piso 3:Piso 3 Concreto:C25, em geral

Referência	Dimensões m	Formas m2	Concreto m3	Diam.	Nº	Comprimento cm.	Total cm.	A.barras Kg.	A.estribos Kg.
P401 P403 P404 P406 P407 P412 P413 P417 P418 P419 P423	0.20x0.20	2.8 47.6	0.14 2.38	Ø10 Ø5	4 31	388 68	1552 2108	9.75	3.31
P402 P405 (x2)	0.20x0.20	2.8 5.6	0.14 0.28	Ø10 Ø5	6 31	388 68	2328 2108	14.62 29.24	3.31 6.62
P408	0.20x0.20	2.8	0.14	Ø10 Ø5	6 31	388 68	2328 2108	14.62	3.31
P409 P410 P411	0.20x0.20	2.8 8.4	0.14 0.42	Ø10 Ø5	6 31	388 68	2328 2108	14.62 43.86	3.31 9.93



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

P414 P415 P416 P420 P421 P422	Diâm:0.40	4.4	0.44	Ø10 Ø5	8 31	388 117	3104 3627	19.49	5.69
		30.8	3.08					136.43	39.83
P424	0.20x0.20	2.8	0.14	Ø20 Ø12.5 Ø6.3	4 2 25	420 395 70	1680 790 1750	41.54 7.75	4.33
P426	0.20x0.20	2.8	0.14	Ø10 Ø5	4 31	388 68	1552 2108	9.75	3.31
PE402	0.20x0.20	2.8	0.14	Ø16 Ø12.5 Ø6.3	4 2 25	410 395 69	1640 790 1725	25.75 7.75	4.27
Total piso 3			6.72					482.50	127.90



Aço em barras e estribos:CA-50-A e CA-60-B

Resumo de quantitat.

Piso	Tipo aço	Diam.	Comprimento (m)	Peso (Kg)	Formas m2	Concreto m3
Piso 1	Aço em barras	Ø16	644.40	1012		
		Ø20	390.60	966		
		Ø25	49.20	193		
	Aço em estribos	Ø6.3	760.74	188		
		Ø8	32.52	13		
		Total			2372	41.70
Piso 2	Aço em barras	Ø10	330.60	208		
		Ø12.5	146.20	143		
		Ø16	427.20	671		
		Ø20	227.60	563		
	Aço em estribos	Ø5	449.05	70		
		Ø6.3	517.10	128		
		Total			1783	121.10
Piso 3	Aço em barras	Ø10	636.32	400		
		Ø12.5	15.80	16		
		Ø16	16.40	26		
		Ø20	16.80	42		
	Aço em estribos	Ø5	759.81	119		
		Ø6.3	34.75	9		
Total			612	103.60	6.72	
Totais	Aço em barras	Ø10	966.92	608		
		Ø12.5	162.00	159		
		Ø16	1088.00	1709		
		Ø20	635.00	1571		
		Ø25	49.20	193		
	Aço em estribos	Ø5	1208.86	189		
		Ø6.3	1312.59	325		
		Ø8	32.52	13		
Total obra			4767	266.40	23.49	

8.- SOMATÓRIO DE ESFORÇOS EM PILARES, PAREDES E MUROS/CORTINAS POR AÇÕES E PISO

- Somente são levados em conta os esforços de pilares, muros e paredes. Se a obra tem vigas com vinculação externa, vigas inclinadas, diagonais ou estruturas 3D integradas, os esforços dos referidos elementos não serão mostrados no relatório a seguir.
- Este relatório é útil para se conhecer as cargas atuantes no nível da cota da base dos pilares sobre um piso. Para casos tais como pilares apoiados tracionados, os esforços terão a influência não só das cargas atuantes provenientes dos pisos superiores, mas também das cargas que recebe de pisos inferiores.

8.1.- Resumido

Valores referidos à origem (X=0.00, Y=0.00)								
Planta	Cota(m)	Hipótese(s)	N(t)	Mx(t·m)	My(t·m)	Qx(t)	Qy(t)	T(t·m)
Piso 2	3.97	Permanente	363.37	7143.6	15784	0.00	0.00	-0.00
		Sobrecarga	107.99	1915.8	4800.2	0.00	0.00	-0.00
Piso 1	0.00	Permanente	871.93	16256	38272	-0.00	-0.00	-0.00
		Sobrecarga	456.00	7916.0	20264	-0.00	-0.00	0.00



Esforços e armaduras de pilares, paredes, cortinas e muros

TRF-4 VARAS VERTICAL PARTE 1

Data: 14/06/16

Fundação	-0.80	Permanente	1247.9	22935	54713	0.00	-0.00	-0.00
		Sobrecarga	476.59	8265.8	21178	-0.00	-0.00	0.00