

Technical drawing of a rectangular plate. The overall width is 25 and the overall height is 44. The plate has four holes: two at the top (labeled 2 N1 and 2 N2) and four at the bottom (labeled 4 N1). The distance between the two top holes is 19. The hole specifications are N3-30 Ø8 and C/20 C=142.

Technical drawing of a reinforced concrete slab (N4-2) showing dimensions and reinforcement details. The drawing includes a plan view and a cross-section view.

**Plan View Dimensions:**

- Overall width: 436
- Overall length: 488
- Reinforcement spacing: 19 N6 C/22
- Reinforcement labels: BL.3, VB.13, VB.12, VB.11

**Cross-section View:**

- Slab thickness: 20
- Reinforcement diameter: N4-2 Ø12.5
- Reinforcement spacing: 19 N6 C/22
- Reinforcement labels: B, B

**Additional Dimensions:**

- Overall width: 433
- Overall length: 499
- Reinforcement spacing: N5-3 Ø16

Technical drawing of a rectangular plate with the following specifications:

- Overall dimensions: 15 (width) x 115 (length).
- Top edge: N7-2 Ø10 C=145.
- Bottom edge: 2 N7 Ø10.
- Left edge: VB.14.
- Right edge: VB.13.
- Internal features: A central horizontal slot with a width of 4 N8 C/20 and a vertical slot with a width of C.

Technical drawing of a rectangular plate. The main view shows a rectangle with overall dimensions of 50 (height) and 20 (width). There are four holes, two on each long side, labeled "2 N7". The distance between the centers of the two holes on one side is 14. A detail view on the right shows a single hole with a diameter of 8 (N8-4 Ø8) and a pitch diameter of 132 (C/20 C=132). The detail view also shows a width of 14 and a height of 44.

Technical drawing of a reinforced concrete slab cross-section. The drawing shows a rectangular slab with a total width of 325 and a total height of 20. The top reinforcement consists of N9-2 Ø12.5 C=377. The bottom reinforcement consists of N10-3 Ø16 C=389. The slab is supported by two vertical walls, VB.13 on the left and VB.11 on the right. The distance between the centerlines of the walls is 322. The slab thickness is 20. The reinforcement is shown as circles with dots, and the walls are shown as thick vertical lines. The drawing is labeled 'D' on the right side.

25  
50  
2 N9  
3 N10  
15-N6 Ø8 C/20

25  
50  
2 N11  
2 N12  
3 N11  
19  
44  
N13-22+19 Ø8  
C/20 C=142

20  
50  
2 N14  
2 N15  
14  
44  
N16-11 Ø8  
C/20 C=132

Technical drawing of a double-track railway bridge section. The drawing shows two tracks with a central support structure. Dimensions include a total width of 866 and 865, track spacing of 21 N19 C/20 and 19 N19 C/20, and track centerlines N17-3 Ø20 C=945 and N18-3 Ø16 C=931. Labels include VB.15, BL3, and VB.11.

Technical drawing of a rectangular plate. The main plate has a width of 25 and a height of 50. It features two rows of three holes each, labeled 3 N17 and 3 N18. A detail view shows a single hole with a diameter of 19 and a depth of 44. Below the detail view, the text reads: N19-19+21 Ø C/20 C=142.

Technical drawing of a roof plan showing structural details and dimensions. The drawing includes a central rectangular area with a dashed line indicating a section cut. Dimensions are provided for the overall width (926), the width of the central area (43 N22 C/20), and the width of the side sections (N20-2 Ø12.5 C=978). The drawing also shows a section cut line (H) and a detail callout (P25, P18). The drawing is labeled with dimensions and material specifications.

25  
60  
2 N20  
2 N21  
2 N20  
19  
54  
N22-43 Ø  
C/20 C=1

Technical drawing of a cable tray system, showing a top view and a side elevation.

**Top View:**

- Horizontal cable tray assembly.
- Labels: N23-2 Ø12.5 C=517, N24-3 Ø20 C=849, 43 N27 C/20, 11 N27 C/20, P28, P21, P14, BL2, BL3.
- Dimensions: 491, 120, 805, 890, 240.

**Side Elevation:**

- Shows the profile of the cable tray.
- Labels: N25-3 Ø20 C=934, N26-2 Ø12.5 C=284.
- Dimensions: 20, 30, 5, 120, 805, 890, 240.

25 3 N24 60 3 N25 19 54

N27-43+11 Ø8  
C/20 C=162

Technical drawing of a rectangular plate with the following specifications:

- Overall width: 416
- Overall height: 15
- Top edge specification: N28-2 Ø10 C=446
- Inner width dimension: 19 N30 C/20
- Left edge specification: VB.16
- Right edge specification: BL.1
- Bottom edge specification: N29-2 Ø12.5 C=460
- Overall bottom height: 20
- Overall bottom width: 408

Technical drawing of a rectangular plate. The overall dimensions are 25 (width) and 60 (height). There are four holes: two at the top corners labeled "2 N28" and two at the bottom corners labeled "2 N29". A detail view of one hole is shown on the right, indicating a hole diameter of 19 and a thread specification of N30-19 Ø8 C/20 C=162.

25  
50  
2 N31  
2 N32  
19  
44  
N33-15 Ø8  
C/20 C=142

TABELA DE FERROS				
N	Ø (mm)	Q	COMPRIMENTOS	
			UNIT.(cm)	TOTAL(cm)
1	16	6	699	4194
2	16	2	641	1282
3	8	30	142	4260
4	12,5	2	488	976
5	16	3	499	1497
6	8	34	142	4828
7	10	8	145	1160
8	8	8	132	1056
9	12,5	2	377	754
10	16	3	389	1167
11	16	5	990	4950
12	16	2	931	1862
13	8	41	142	5822
14	12,5	6	348	2088
15	12,5	6	302	1812
16	8	33	132	4356
17	20	3	945	2835
18	16	3	931	2793
19	8	40	142	5680
20	12,5	4	978	3912
21	12,5	2	933	1866
22	8	43	162	6966
23	12,5	2	517	1034
24	20	3	849	2547
25	20	3	934	2802
26	12,5	2	284	568
27	8	54	162	8748
28	10	2	446	892
29	12,5	2	460	920
30	8	19	162	3078
31	10	2	399	798
32	12,5	2	413	826
33	8	15	142	2130

RESUMO CA-50			
Ø (mm)	kg/m	COMPR.(m)	PESO (kg)
8	0.40	469.24	188
10	0.63	28.50	18
12.5	1.00	147.56	148
16	1.60	177.45	284
20	2.50	81.84	205
TOTAL:			843

**NOTAS:**

- 1 - MEDIDAS EM CENTÍMETRO.
- 2 - MATERIAIS:
  - CONCRETO ESTRUTURAL fck = 30 MPa (FATOR A/C<0,5)
  - AÇO CA50
- 3 - COBRIMENTO DAS ARMADURAS:  
c = 3,0 cm
- 4 - VERIFICAR TODAS AS MEDIDAS NA OBRA.
- 5 - O CONTROLE TECNOLÓGICO PARA GARANTIA DA QUALIDADE DOS MATERIAIS E SERVIÇOS DEVERÃO SEGUIR TODAS AS RECOMENDAÇÕES CONSTANTES DAS SEGUINTE NORMAS DA ABNT: NBR12655, NBR7480, NBR 7481, NBR 7482 E NBR 7483.

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