

[illegible]

Technical drawing of a beam section labeled "Corte A". The drawing shows a profile with two channels (P8 and P32) and a central web. Dimensions are provided in millimeters (mm). The top channel (P8) has a height of 401 mm, a flange width of 2 Ø 12.5, and a center-to-center distance of C=421. The bottom channel (P32) has a height of 395 mm, a flange width of 2 Ø 12.5, and a center-to-center distance of C=415. The central web has a height of 44 mm and a flange width of 2 Ø 12.5. The total height of the section is 17 Ø 5 C=119. The distance between the centers of the two channels is c/20. The distance from the center of the bottom channel to the bottom flange is 17 Ø 5. The distance from the center of the top channel to the top flange is 0.0cm. The distance from the center of the top channel to the center of the bottom channel is 20 mm.

Technical drawing of a reinforced concrete slab (V4) showing a plan view and a cross-section.

Plan View:

- Overall width: 1110
- Overall depth: 295
- Reinforcement: 2 Ø 8, C=1140
- Sections: V4a, V4b, V4c, V4d, V4e, V4f
- Reinforcement layout: 2 Ø 8 bars at top and bottom, spaced at c/20 (90 mm).

Cross-section:

- Overall thickness: 200
- Top concrete layer: 100
- Bottom concrete layer: 100
- Reinforcement: 2 Ø 8 bars at top and bottom, spaced at c/20 (90 mm).
- Reinforcement layout: 2 Ø 8 bars at top and bottom, spaced at c/20 (90 mm).

Technical drawing of a mechanical part with dimensions and section A-A.

Top View:

- Overall width: 313
- Distance from left edge to centerline: $2 \times \emptyset 10$
- Center-to-center distance: $C=353$
- Section line A-A is indicated.

Front View:

- Overall height: 15
- Top flange thickness: $2 \times \emptyset 10$ (with a 0.0cm dimension line)
- Internal hole: $\varnothing 10$
- Section line A-A is indicated.
- Bottom flange thickness: $\sqrt{P39}$ and $\sqrt{P31}$
- Bottom flange width dimensions: $\frac{C}{7} \frac{15}{\emptyset 5}$ and $\frac{C}{9} \frac{20}{\emptyset 5}$
- Overall bottom width: 315
- Distance from left edge to centerline: $2 \times \emptyset 10$
- Center-to-center distance: $C=345$

Section A-A:

- Section A-A is a vertical section through the top flange.
- Section A-A shows a rectangular profile with a width of δ and a height of 44.
- Section A-A is labeled with $16 \times \emptyset 5$ and $C=119$.

Technical drawing of a reinforced concrete beam (P30) showing cross-sections A-A and B-B, and a longitudinal section.

Corte A

Top reinforcement: 2 $\varnothing 8$

Bottom reinforcement: 2 $\varnothing 8$

Concrete cover: 3

Corte B

Top reinforcement: 2 $\varnothing 8$

Bottom reinforcement: 2 $\varnothing 8$

Concrete cover: 3

Longitudinal Section

Beam length: 343

Supports: P30, P33

Center-to-center distance: 205

Beam width: 313

Beam height: 11

Reinforcement: 2 $\varnothing 8$ (top), 2 $\varnothing 8$ (bottom)

Concrete cover: 3

Technical drawing of a mechanical part, showing a side view and two cross-sections (A-A and B-B).

Side View Dimensions:

- Top flange: 400 (width), 2 Ø 12.5 C=420 (holes)
- Central body: 2 Ø 12.5 (holes), 0,0cm (height)
- Bottom flange: 2 Ø 12.5 (holes), 17 Ø 5 (holes), 398 (width), 2 Ø 12.5 C=418 (holes)
- Section lines: A-A (vertical), B-B (horizontal)
- Labels: P40, P9

Corte A (Cross-section A-A):

- Top flange: 2 Ø 12 (holes)
- Bottom flange: 2 Ø 12 (holes)

Corte B (Cross-section B-B):

- Central body: 44 (height), Ø (hole)

Technical drawing of a reinforced concrete slab (L.01) showing dimensions and reinforcement details.

Plan View Dimensions:

- Overall width: 224 cm
- Overall length: 264 cm
- Reinforcement: 2 Ø 8

Corte A (Cross-section):

- Height: 20 cm
- Reinforcement: 2 Ø 8

Detail View:

- Width: 34 cm
- Height: 9 cm
- Reinforcement: 5 Ø 9

Other Dimensions:

- 225 cm (width)
- 265 cm (length)
- 20 cm (height)
- 2 Ø 8 (reinforcement)
- 9 Ø 5 (stirrups)

Technical drawing of a roof structure (Dachstuhl) showing a cross-section and a side elevation.

Cross-section details:

- Roof slope: 32°
- Rafter: 2 Ø 10
- Ridge beam: 3 Ø 16
- Ridge cap: 1 Ø 6.3
- Roof thickness: 0,0cm
- Material: (1 Ø 2aCAM)

Side elevation details:

- Roof slope: 32°
- Ridge beam: 1 Ø 6.3 C=80
- Material: (1 Ø 2aCAM)

Dimensions and labels:

- 512
- 2 Ø 10 C=552
- 3 Ø 16
- 1 Ø 6.3
- 32°
- 1 Ø 6.3 C=80
- 36
- 513
- 2 Ø 10 C=565
- R=4

513
2 Ø 10 C=553

0,0cm

2 Ø 10

3 Ø 16

1 Ø 6.3

P42

V44

24 Ø 5 C=119

36
1 Ø 6.3 C=80

(1 Ø 2aCAM)

513
2 Ø 16 C=415

2 Ø 16 C=565

R=4

R=4

Corte A

2 Ø 10

2 Ø 16

2 Ø 16

Ø

44

24 Ø 5 C=119

RESISTÊNCIA À C

MÓDULO DE ELA

TAMANHO MÁXIM

Technical drawing of a mechanical part, likely a shaft or axle, showing various dimensions and specifications.

Dimensions and Specifications:


- Top view (left): $2 \text{ } \varnothing 10$, 513 , $2 \text{ } \varnothing 10 \text{ C}=553$
- Top view (right): A_3
- Side view (left): $P44$, $3 \text{ } \varnothing 16$, $24 \text{ } \varnothing 5$, $c/20$
- Side view (right): $0,0\text{cm}$, $1 \text{ } \varnothing 6.3$, $V4$, 36 , $1 \text{ } \varnothing 6.3 \text{ C}=80$, $(1 \text{ } \varnothing 2a\text{CAM})$
- Bottom view (left): $R=4$, 25 , $1 \text{ } \varnothing 16 \text{ C}=415$
- Bottom view (right): $R=4$, 513 , $2 \text{ } \varnothing 16 \text{ C}=565$

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RESUMO DE AÇO			
AÇO	BIT mm	COMPR m	PESO kgf
60	5	487	75
50	6.3	6	1
50	8	96	38
50	10	161	99
50	12.5	44	42
50	16	88	139
Peso Total	60	=	75 kgf
Peso Total	50	=	320 kgf

RESISTÊNCIA À COMPRESSÃO DO CONCRETO, f_{ck} de 28 dias = 30 MPa.
MÓDULO DE ELASTICIDADE INICIAL DO CONCRETO, E_{ci} = 30,6 GPa.
TAMANHO MÁXIMO DO AGREGADO GRÁUO = 19 mm
CLASSE DE AGRESSIVIDADE AMBIENTAL II (CAA II).
RELAÇÃO ÁGUA/CEMENTO (a/c) MÁXIMA = 0,60.

ESCRITÓRIO MODELO DE ENGENHARIA - UFSM

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<p>RESPONSÁVEIS TÉCNICOS:</p>	
<p>PROJETO:</p> <p>REFORMA DO PRÉDIO MULTIUSO</p> <p>Projeto estrutural</p> <p>ENDEREÇO:</p> <p>Av. Roraima, n° 1000, Parque de exposições, Cidade Universitária, UFSM.</p>	<p>Revisão:</p> <p style="text-align: center; font-size: 1.2em;">00</p> <p>Data:</p> <p style="text-align: center; font-size: 1.2em;">27/08/2024</p>
 <p style="text-align: center;">CENTRO DE MODELOS DE ENGENHARIA</p>	<p>PRANCHAS:</p> <p>DETALHAMENTO DAS VIGAS DE BALDRAME</p> <div style="text-align: center; font-size: 1.2em; font-weight: bold;"> v1 / v2 / v3 / v4 / v5 v6 / v7 / v8 / v9 / v10 v11 / v12 / v13 / v22 </div>
<p>Escala:</p> <p style="text-align: center; font-size: 1.2em;">Indicada</p>	
<p>PRANCHA Nº:</p> <p style="text-align: center; font-size: 2em; font-weight: bold;">EST 12/19</p>	