



www.studsunlimited.com

Product Category: 05 41 00 - Structural Framing

Product Name: 400S200-68

Important Properties Notes:

- Calculated properties are based on AISI S100-12 with S2-10 Supplement, North American Specification for Design of Cold-Formed Steel Structural Members.
- The centerline bend radius is based on inside corner radii shown in thickness chart.
- Effective properties incorporate the strength cold work of forming as applicable per AISI A7.2.
- Tabulated gross properties are based on full-section of the studs, away from punchouts.
- For deflection calculations, use the effective
- Allowable moment includes cold-work of forming.
- For the steels that have both 33 and 50 ksi listing, if the design is based on 50 ksi, the 50 ksi steel needs to be specified. (ex. 362S162-43 (50 ksi))

Project Information

Name:

Address:

Contractor Information

Name:

Contact:

Phone:

Fax:

Architect Information

Name:

Contact:

Phone:

Fax:

Distributor/Rep Information

Name:

Contact:

Phone:

Email /Web:

Properties

400S200-68 Properties

| | |
|---------------------|-----------------|
| Finish: | G90 |
| Web Depth | 4" in |
| Flange Width | 2" in |
| Design Thickness | 0.0713 in |
| Thickness | 68 mils or 14GA |
| Yield stress, F_y | 50 ksi |
| Weight | 2.116 lb/ft |



400S200-68 Section Properties

Gross Section Properties

| | |
|------------------------------------|-----------------------|
| Cross sectional area (A) | 0.622 in ² |
| Moment of inertia (I_x) | 1.59 in ⁴ |
| Section Modulus (S_x) | 0.795 in ³ |
| Radius of gyration (R_x) | 1.599 in |
| Gross moment of inertia (I_y) | 0.349 in ⁴ |
| Gross Radius of gyration (R_y) | 0.75 in |

Effective Section Properties

| | |
|--|-----------------------|
| Moment of inertia for deflection (I_{xe}) | 1.567 in ⁴ |
| Section modulus (S_{xe}) | 0.743 in ³ |
| Allowable bending moment (M_a) | 22.23 in-k |
| Allowable bending moment from distortional buckling (M_{ad}) | 23.05 in-K |
| Allowable strong axis shear away from punch-out (V_{ag}) | 4871 lb |
| Allowable strong axis shear at punch out (V_{anet}) | 1356 lb |

Torsional Properties

| | |
|--|-----------------------|
| St. Venant torsion constant ($J \times 1000$) | 1.054 in ⁴ |
| Warping constant (C_w) | 1.318 in ⁶ |
| Distance from shear center to neutral axis (X_o) | -1.643 in |
| Distance from shear center to mid-plane (M) | 0.983 in |
| Radii of gyration (R_o) | 2.412 in |
| Torsional flexural constant (Beta) | 0.536 |
| Unbraced Length (L_u) | 42.9 in |



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Limiting Heights Properties

Limiting Wall Heights - Curtain Wall 1-Span

| Spacing (inches) | 5psf | | | 15psf | | | 20psf | | | 25psf | | |
|---------------------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| | L/120 | L/240 | L/360 | L/240 | L/360 | L/600 | L/240 | L/360 | L/600 | L/240 | L/360 | L/600 |
| 12 | 32'-0" | 25'-5" | 22'-2" | 19'-10" | 17'-4" | 14'-7" | 18'-0" | 15'-9" | 13'-3" | 16'-8" | 14'-7" | 12'-4" |
| 16 | 29'-1" | 23'-1" | 20'-2" | 18'-0" | 15'-9" | 13'-3" | 16'-4" | 14'-3" | 12'-0" | 15'-2" | 13'-3" | 11'-2" |
| 24 | 25'-5" | 20'-2" | 17'-7" | 15'-9" | 13'-9" | 11'-7" | 14'-3" | 12'-6" | 10'-6" | 13'-3" | 11'-7" | 9'-9" |

| Spacing (inches) | 30psf | | | 35psf | | | 40psf | | | 50psf | | |
|---------------------|--------|---------|--------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| | L/240 | L/360 | L/600 | L/240 | L/360 | L/600 | L/240 | L/360 | L/600 | L/240 | L/360 | L/600 |
| 12 | 15'-9" | 13'-9" | 11'-7" | 14'-11" | 13'-0" | 11'-0" | 14'-3" | 12'-6" | 10'-6" | 13'-3" | 11'-7" | 9'-9" |
| 16 | 14'-3" | 12'-6" | 10'-6" | 13'-7" | 11'-10" | 10'-0" | 13'-0" | 11'-4" | 9'-7" | 12'-0" | 10'-6" | 8'-10" |
| 24 | 12'-6" | 10'-11" | 9'-2" | 11'-10" | 10'-4" | 8'-9" | 11'-4" | 9'-11" | 8'-4" | 10'-6" | 9'-2" | 7'-9" |

Additional Specification Information

Studs Unlimited is an SFIA member. Studs Unlimited acts in accordance with the product and quality standards required by the SFIA program.

Studs Unlimited meets or exceeds ASTM C955, A653, and A1003.

LEED Specification Information

Materials & Resources Credit 2: Construction Waste Management - Studs Unlimited Steel Framing Products are formed from steel and are 100% recyclable. **(1 point)**

Materials & Resources Credit 4: Recycled Content intends to increase demand for building products that incorporate recycled content materials, therefore reducing impacts resulting from extraction and processing of new virgin materials. As discussed and demonstrated below, North American steel building products contribute positively toward points under Credits 4.1 and 4.2. The following is required by LEED-NC Versions 2.2 and 2009:

Credit 4.1 (1 point) Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project.

Credit 4.2 (1 point) Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of pre-consumer content constitutes at least 20% of the total value of the materials in the project.

Materials & Resources Credit 5: Regional Materials - Contact Studs Unlimited directly for information at bjpowell@studsunlimited.com. Studs Unlimited is located in Oklahoma City, Oklahoma. **(1 point)**