



Super Stud Building Products - Product Submittal

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Specification Section: 05.40.00 (Cold-Formed Metal Framing)

400S250-43 (33ksi) Standard Punch

43mil (18 ga) Coating: G60 (standard), G90 (special order)

Geometric Properties

Web Depth	4 in	Yield Strength, F_y	33 ksi
Flange Width	2.5 in	Ultimate, F_u	45 ksi
Lip Length	0.625 in	Punchout Width	1.5 in
Design Thickness	0.0451 in	Punchout Length	4.0 in
Min. Steel Thickness	0.0428 in		

Gross Section Properties

Cross Sectional Area (A)	0.4469 in ²
Product Weight per Linear Foot	1.5195 lb/ft
Moment of Inertia (I_x)	1.2240 in ⁴
Section Modulus (S_x)	0.6120 in ³
Radius of Gyration (r_x)	1.6550 in
Weak Axis Moment of Inertia (I_y)	0.3989 in ⁴
Weak Axis Radius of Gyration (r_y)	0.9447 in
Depth-to-Thickness Ratio (h/t)	84

Effective Section Properties, Strong Axis

Effective Area (A_e)	0.2925 in ²
Moment of Inertia for Deflection (I_{xe})	1.1120 in ⁴
Section Modulus (S_{xe})	0.5159 in ³
Allowable Bending Moment (M_a)	10.1938 in-k
Allowable Shear Force in Web (at Punchout) (V_y)	810 lb

Torsional Properties

St. Venant Torsion Constant ($J \times 1000$)	0.3030 in ⁴
Warping Constant (C_w)	1.4403 in ⁶
Distance from Shear Center to Neutral Axis (X_o)	2.1379 in
Radius of Gyration (r_o)	2.8639 in
Torsional Flexural Constant (Beta)	0.4427

Codes and Standards

Super Stud products comply with the applicable provisions of the following:

International Building Code (IBC): 2006 – 2024

Complies with AISI S100-16 (2020) w/S2-20. Effective properties incorporate the strength increase from the cold work of forming

Sheet steel: ASTM A1003/A1003M; ASTM A653/A653M

Galvanized coating: ASTM A653/A653M

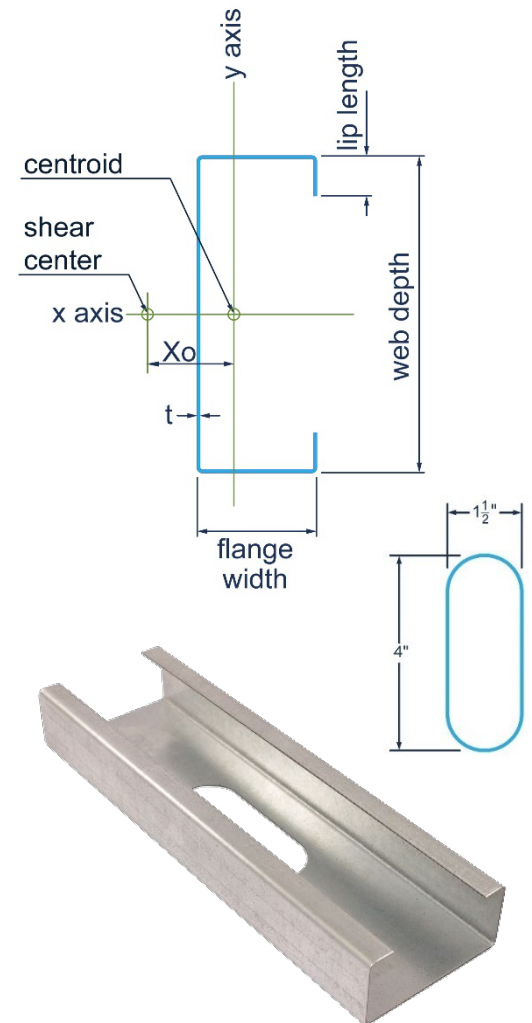
Nonstructural: Members and tolerances: ASTM C645; AISI S220, AISI S201, AISI S202

Meets ASTM C754 when installed properly in structure.

Structural: Members and tolerances: ASTM C955; AISI S240, AISI S201, AISI S202

Meets ASTM C1007 when installed properly in structure.

3rd party Certification



Structural Punchout

First punchout is centered 12" from beginning of member; subsequent punchouts are 24" on center (o.c.). Center of last punchout is no less than 12" from end of member.

Custom stiffened punchouts are available at tighter spacing to reduce thermal transmittance and increase accessibility. Contact Technical Services for additional punchout information.

Sustainability

For LEED letters contact Technical Services at technical@buysuperstud.com or visit



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