Product Name: 1200S400-118



Product Category: 05.40.00 - Cold-Formed Metal Framing

Available Finish: G60, G90 *Other standard coatings referenced in ASTM A1003

Web Depth: 12 in
Flange Width: 4 in
Design Thickness: 0.1242 in
Gauge: 118 mils or 10G

Yield stress, Fy: 50 ksi
Weight: 8.91 lb/ft

- Calculated properties are based on AISI S100-16/S240-20, North American Specification for Design of Cold-Formed Steel Structural Members and meets the requirements of the IBC 2021 Building Code.
- The centerline bend radius is based on inside corner radii shown in thickness chart.
- Effective properties incorporate the strength increase from the cold work of forming as applicable per AISI A7.2.
- Tabulated gross properties are based on full-unreduced cross section of the studs, away from punchouts.
- For deflection calculations, use the effective moment of inertia.
- Allowable moment includes coldwork 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. 3.625S137 16-50 (50 ksi))

Gross Section Properties

Cross sectional area (A) 2.618 in²

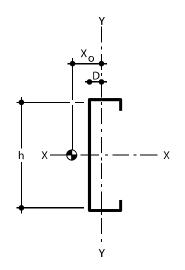
Moment of inertia (Ix) 56.372 in⁴

Section Modulus (Sx) 9.395 in³

Radius of gyration (Rx) 4.641 in

Gross moment of inertia (Iy) 5.198 in⁴

Gross Radius of gyration (Ry) 1.409 in



Effective Section Properties

Moment of inertia for deflection (Ix)	56.372 in⁴
Section modulus (Sx)	8.590 in ³
Allowable bending moment (Ma)	257.190 ln-k
Allowable bending moment from distortional buckling (Mad)	229.99 In-k
Allowable strong axis shear away from punch-out (Vag)	14986 lb
Allowable strong axis shear at punch out (Vanet)	11037 lb

Torsional Properties

St. Venant torsion constant (J x 1000)	13.460 in⁴
Warping constant (Cw)	151.216 in
Distance from shear center to neutral axis (Xo)	-2.689 in
Distance from shear center to mid-plane of web (m)	1.671 in
Radii of gyration (Ro)	5.546 in
Torsional flexural constant (β)	0.765
Unbraced Length (Lu)	79.5 in

Additional Information