Product Name: 1400S400-118



Product Category: 05.40.00 - Cold-Formed Metal Framing

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

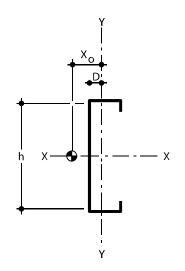
Web Depth: 14 in
Flange Width: 4 in
Design Thickness: 0.1242 in
Gauge: 118 mils or 10G

Yield stress, Fy: 50 ksi **Weight:** 9.75 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) 2.866 in² Moment of inertia (Ix) 81.179 in⁴ Section Modulus (Sx) 11.597 in³ Radius of gyration (Rx) 5.322 in Gross moment of inertia (Iy) 5.433 in⁴ Gross Radius of gyration (Ry) 1.377 in



Effective Section Properties

Moment of inertia for deflection (Ix)	81.179 in⁴
Section modulus (Sx)	10.651 in ³
Allowable bending moment (Ma)	318.880 ln-k
Allowable bending moment from distortional buckling (Mad)	272.56 In-k
Allowable strong axis shear away from punch-out (Vag)	12745 lb
Allowable strong axis shear at punch out (Vanet)	11287 lb

Torsional Properties

St. Venant torsion constant (J x 1000)	14.737 in⁴
Warping constant (Cw)	213.098 in ⁶
Distance from shear center to neutral axis (Xo)	-2.518 in
Distance from shear center to mid-plane of web (m)	1.588 in
Radii of gyration (Ro)	6.046 in
Torsional flexural constant (β)	0.827
Unbraced Length (Lu)	78.7 in

Additional Information