Product Name: 1600S400-118



Product Category: 05.40.00 - Cold-Formed Metal Framing

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

Web Depth: 16 in
Flange Width: 4 in
Design Thickness: 0.1242 in
Gauge: 118 mils or 10G
Yield stress, Fy: 50 ksi

Weight:

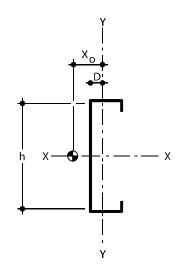
 Calculated properties are based on AISI S100-16/S240-20, North American Specification for Design of Cold-Formed Steel Structural Members and meets the requirements of the IBC 2021 Building Code.

10.60 lb/ft

- 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) 3.115 in² Moment of inertia (Ix) 111.718 in⁴ Section Modulus (Sx) 13.965 in³ Radius of gyration (Rx) 5.989 in Gross moment of inertia (Iy) 5.631 in⁴ Gross Radius of gyration (Ry) 1.345 in



Effective Section Properties

Moment of inertia for deflection (Ix)	111.718 in⁴
Section modulus (Sx)	12.879 in ³
Allowable bending moment (Ma)	385.610 ln-k
Allowable bending moment from distortional buckling (Mad)	314.28 In-k
Allowable strong axis shear away from punch-out (Vag)	11088 lb
Allowable strong axis shear at punch out (Vanet)	11088 lb

Torsional Properties

St. Venant torsion constant (J x 1000)	16.015 in⁴
Warping constant (Cw)	287.718 in ⁶
Distance from shear center to neutral axis (Xo)	-2.370 in
Distance from shear center to mid-plane of web (m)	1.514 in
Radii of gyration (Ro)	6.580 in
Torsional flexural constant (β)	0.870
Unbraced Length (Lu)	78.0 in

Additional Information