Product Name: 1400S400-97



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:
 0.1017 in

 Gauge:
 97 mils or 12G

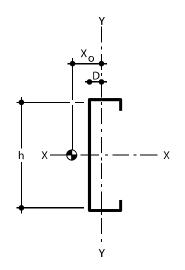
 Yield stress, Fy:
 50 ksi

 Weight:
 8.04 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) 2.364 in² Moment of inertia (Ix) 67.418 in⁴ Section Modulus (Sx) 9.631 in³ Radius of gyration (Rx) 5.340 in Gross moment of inertia (Iy) 4.574 in⁴ Gross Radius of gyration (Ry) 1.391 in



Effective Section Properties

| Moment of inertia for deflection (Ix) | 66.887 in⁴ |
|---|-----------------------|
| Section modulus (Sx) | 8.215 in ³ |
| Allowable bending moment (Ma) | 245.950 In-k |
| Allowable bending moment from distortional buckling (Mad) | 206.90 In-k |
| Allowable strong axis shear away from punch-out (Vag) | 6939 lb |
| Allowable strong axis shear at punch out (Vanet) | 6939 lb |

Torsional Properties

| St. Venant torsion constant (J x 1000) | 8.150 in⁴ |
|--|-------------------------|
| Warping constant (Cw) | 178.493 in ⁶ |
| Distance from shear center to neutral axis (Xo) | -2.544 in |
| Distance from shear center to mid-plane of web (m) | 1.602 in |
| Radii of gyration (Ro) | 6.077 in |
| Torsional flexural constant (β) | 0.825 |
| Unbraced Length (Lu) | 79.1 in |
| | |

Additional Information