



Product Category: 05.40.00 - Cold-Formed Metal Framing

Product Name: 1000S250-118

Available Finish: G60, G90

*Other standard coatings referenced in ASTM A1003

Web Depth: 10 in

Flange Width: 2-1/2 in

Design Thickness: 0.1242 in

Gauge: 118 mils or 10G

Yield stress, Fy: 50 ksi

Weight: 6.48 lb/ft

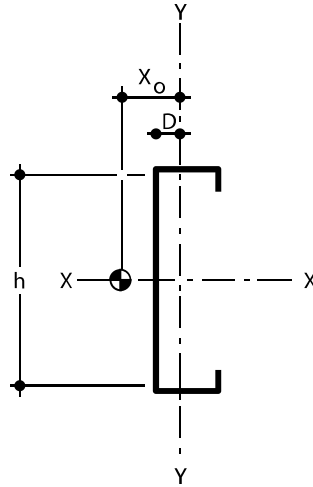
Gross Section Properties

| | |
|-------------------------------|------------------------|
| Cross sectional area (A) | 1.904 in ² |
| Moment of inertia (Ix) | 26.088 in ⁴ |
| Section Modulus (Sx) | 5.218 in ³ |
| Radius of gyration (Rx) | 3.702 in |
| Gross moment of inertia (Iy) | 1.251 in ⁴ |
| Gross Radius of gyration (Ry) | 0.811 in |

Effective Section Properties

| | |
|--|------------------------|
| Moment of inertia for deflection (I _x) | 26.082 in ⁴ |
| Section modulus (S _x) | 5.083 in ³ |
| Allowable bending moment (M _a) | 174.850 In-k |
| Allowable bending moment from distortional buckling (M _{ad}) | 139.63 In-k |
| Allowable strong axis shear away from punch-out (V _{ag}) | 16235 lb |
| Allowable strong axis shear at punch out (V _{anet}) | 9536 lb |

- 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 cold-work 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))



Torsional Properties

| | |
|--|------------------------|
| St. Venant torsion constant (J x 1000) | 9.788 in ⁴ |
| Warping constant (C _w) | 25.490 in ⁶ |
| Distance from shear center to neutral axis (X _o) | -1.428 in |
| Distance from shear center to mid-plane of web (m) | 0.918 in |
| Radii of gyration (R _o) | 4.050 in |
| Torsional flexural constant (β) | 0.876 |
| Unbraced Length (L _u) | 44.8 in |

Additional Information

MRI Steel Framing, LLC is an SFIA member. MRI acts in accordance with the product and quality standards required by the SFIA program.

MRI meets or exceeds ASTM C955, A653, and A1003.

Current LEED credits available upon request