**Product Category:** 05.40.00 - Cold-Formed Metal Framing     **Product Name:** 1600S200-118

**Available Finish:**     G60, G90

*Other standard coatings referenced in ASTM A1003

**Web Depth:**         16 in
**Flange Width:**      2 in
**Design Thickness:**  0.1242 in
**Gauge:**             118 mils or 10G
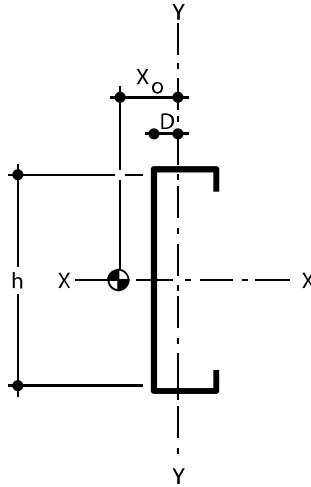**Yield stress, Fy:**  50 ksi
**Weight:**            8.59 lb/ft

- 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 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))

## Gross Section Properties

| | |
|---|---|
| Cross sectional area (A) | 2.525 in$^2$ |
| Moment of inertia (Ix) | 75.633 in$^4$ |
| Section Modulus (Sx) | 9.454 in$^3$ |
| Radius of gyration (Rx) | 5.473 in |
| Gross moment of inertia (Iy) | 0.774 in$^4$ |
| Gross Radius of gyration (Ry) | 0.554 in |



## Effective Section Properties

| | |
|---|---|
| Moment of inertia for deflection (Ix) | 74.087 in$^4$ |
| Section modulus (Sx) | 8.332 in$^3$ |
| Allowable bending moment (Ma) | 249.450 In-k |
| Allowable bending moment from distortional buckling (Mad) | 212.31 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) | 12.981 in$^4$ |
| Warping constant (Cw) | 43.132 in$^6$ |
| Distance from shear center to neutral axis (Xo) | -0.815 in |
| Distance from shear center to mid-plane of web (m) | 0.558 in |
| Radii of gyration (Ro) | 5.561 in |
| Torsional flexural constant (β) | 0.979 |
| Unbraced Length (Lu) | 35.9 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