**Product Name: 1600S350-97** 



# 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:
 3-1/2 in

 Design Thickness:
 0.1017 in

 Gauge:
 97 mils or 12G

 Yield stress, Fy:
 50 ksi

 Weight:
 8.39 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) 2.466 in<sup>2</sup>

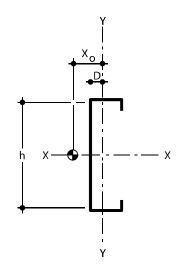
Moment of inertia (lx) 86.296 in<sup>4</sup>

Section Modulus (Sx) 10.787 in<sup>3</sup>

Radius of gyration (Rx) 5.916 in

Gross moment of inertia (ly) 3.410 in<sup>4</sup>

Gross Radius of gyration (Ry) 1.176 in



## **Effective Section Properties**

Moment of inertia for deflection (Ix)	83.695 in⁴
Section modulus (Sx)	8.383 in <sup>3</sup>
Allowable bending moment (Ma)	250.970 In-k
Allowable bending moment from distortional buckling (Mad)	223.83 ln-k
Allowable strong axis shear away from punch-out (Vag)	6043 lb
Allowable strong axis shear at punch out (Vanet)	6043 lb

## **Torsional Properties**

St. Venant torsion constant (J x 1000)	8.501 in⁴
Warping constant (Cw)	175.895 in
Distance from shear center to neutral axis (Xo)	-2.022 in
Distance from shear center to mid-plane of web (m)	1.304 in
Radii of gyration (Ro)	6.362 in
Torsional flexural constant (β)	0.899
Unbraced Length (Lu)	69.1 in

## **Additional Information**