Product Name: 800S400-43



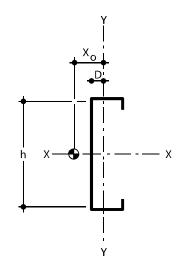
Product Category: 05.40.00 - Cold-Formed Metal Framing

Available Finish: G60, G90
*Other standard coatings referenced in ASTM A1003
Web Depth: 8 in
Flange Width: 4 in
Design Thickness: 0.0451 in
Gauge: 43 mils or 18
Yield stress, Fy: 50 ksi
Weight: 2.71 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)	0.796 in ²
Moment of inertia (Ix)	8.500 in⁴
Section Modulus (Sx)	2.125 in ³
Radius of gyration (Rx)	3.267 in
Gross moment of inertia (ly)	1.824 in⁴
Gross Radius of gyration (Ry)	1.513 in



Effective Section Properties

Moment of inertia for deflection (Ix)	in⁴
Section modulus (Sx)	in³
Allowable bending moment (Ma)	ln-k
Allowable bending moment from distortional buckling (Mad)	ln-k
Allowable strong axis shear away from punch-out (Vag)	lb
Allowable strong axis shear at punch out (Vanet)	lb

Torsional Properties

St. Venant torsion constant (J x 1000)	0.540 in ⁴
Warping constant (Cw)	25.191 in ⁶
Distance from shear center to neutral axis (Xo)	-3.228 in
Distance from shear center to mid-plane of web (m)	1.923 in
Radii of gyration (Ro)	4.836 in
Torsional flexural constant (β)	0.554
Unbraced Length (Lu)	100.6 in

Additional Information