

# Marino\WARE® Product Submittal Data

**PRODUCT NAME:** 400S200-33

**MARINO\WARE PART #** 400SJ20

05.40.00 Cold-Formed Metal Framing

## PROPERTIES:

<b>A. Web (in)</b>	4"	<b>Yield Strength Fy (KSI)</b>	33
<b>B. Flange (in)</b>	2"	<b>Tensile Strength Fu (KSI)</b>	45
<b>C. Lip (in)</b>	5/8"	<b>Design Thickness (in)</b>	0.0346
<b>Mils</b>	33	<b>Minimum Thickness (in)</b>	0.0329
<b>Available Finish</b>	G90	<b>Gauge</b>	20 STR

## SECTION PROPERTIES

### GROSS SECTION PROPERTIES

Cross Sectional Area: <b>A</b> (in <sup>2</sup> )	0.310
Weight of Member: (lb/ft)	1.05
Moment of Inertia: <b>I<sub>x</sub></b> (in <sup>4</sup> )	0.812
Section Modulus: <b>S<sub>x</sub></b> (in <sup>3</sup> )	0.406
Radius of Gyration: <b>R<sub>x</sub></b> (in)	1.619
Gross Moment of Inertia: <b>I<sub>y</sub></b> (in <sup>4</sup> )	0.183
Gross Radius of Gyration: <b>R<sub>y</sub></b> (in)	0.769

### EFFECTIVE SECTION PROPERTIES

Moment of Inertia-Deflection: <b>I<sub>xe</sub></b> (in <sup>4</sup> )	0.81
Section Modulus: <b>S<sub>xe</sub></b> (in <sup>3</sup> )	0.33
Allowable Local Bending Moment: <b>M<sub>al</sub></b> (in-k)	6.49
Allowable Distortional Bending Moment: <b>M<sub>ad</sub></b> (in-k)	6.65
Allowable strong axis shear away from punch: <b>V<sub>ag</sub></b> (lb)	976
Allowable strong axis shear at punch: <b>V<sub>anet</sub></b> (lb)	595

### TORSIONAL SECTION PROPERTIES

St. Venant Torsional Constant: <b>J<sub>x1000</sub></b> (in <sup>4</sup> )	0.124
Torsional Warping Constant: <b>C<sub>w</sub></b> (in <sup>6</sup> )	0.697
Shear Center to Centroid on Principal X-axis: <b>X<sub>o</sub></b> (in)	-1.688
Shear Center to Mid-Plane of the Web: <b>m</b> (in)	1.007
Radius of Gyration on the Centroid Principal axis: <b>R<sub>o</sub></b> (in)	2.462
Torsional Flexural Constant: <b>β</b> 1-(x <sub>o</sub> /R <sub>o</sub> ) <sup>2</sup>	0.530

## CODES & STANDARDS

- AISI S100, S240 & ICC ES ESR-4062
- ASTM A 1003, A 653, & C 955
- IBC 2012, 2015, 2018, 2021 & FBC 2020, 2023

## GREEN INFO

- LEED credits available
- Contact Technical Services for more information.

