

# Structural Stud (s)



## MATERIAL

|                              |        |
|------------------------------|--------|
| Web (in)                     | 4      |
| Flange (in)                  | 2      |
| Lip (in)                     | 0.625  |
| Yield Strength $F_y$ (KSI)   | 50     |
| Tensile Strength $F_u$ (KSI) | 65     |
| Design Thickness (in)        | 0.0713 |
| Minimum Thickness (mil)      | 68     |
| Gauge                        | 14     |
| Available Finish G60, G90    |        |

## GROSS SECTION PROPERTIES

|                                              |       |
|----------------------------------------------|-------|
| Weight of Member: (lb/ft)                    | 2.12  |
| Cross Sectional Area: $A$ (in <sup>2</sup> ) | 0.622 |
| Moment of Inertia: $I_x$ (in <sup>4</sup> )  | 1.590 |
| Section Modulus: $S_x$ (in <sup>3</sup> )    | 0.795 |
| Radius of Gyration: $R_x$ (in)               | 1.599 |
| Moment of Inertia: $I_y$ (in <sup>4</sup> )  | 0.349 |
| Radius of Gyration: $R_y$ (in)               | 0.750 |

## EFFECTIVE SECTION PROPERTIES

|                                                            |       |
|------------------------------------------------------------|-------|
| Moment of Inertia-Deflection: $I_{xe}$ (in <sup>4</sup> )  | 1.590 |
| Section Modulus: $S_{xe}$ (in <sup>3</sup> )               | 0.767 |
| Local Buckling Allowable Moment: $M_{al}$ (in-k)           | 22.96 |
| Distortional Buckling Allowable Moment: $M_{ad}$ (in-k)    | 22.08 |
| Allowable strong axis shear away from punch: $V_{ag}$ (lb) | 4871  |
| Allowable strong axis shear at punch: $V_{anet}$ (lb)      | 1356  |
| (check web crippling)                                      |       |

## TORSIONAL SECTION PROPERTIES

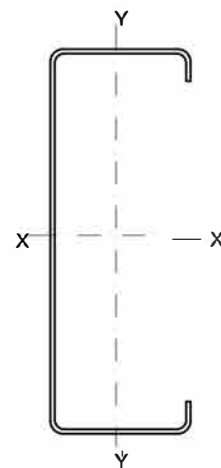
|                                                               |        |
|---------------------------------------------------------------|--------|
| St. Venant Torsional Constant: $J_{x1000}$ (in <sup>4</sup> ) | 1.054  |
| Torsional Warping Constant: $C_w$ (in <sup>6</sup> )          | 1.318  |
| Shear Center to Centroid on Principal X-axis: $X_o$ (in)      | -1.643 |
| Radius of Gyration on the Centroid Principal axis: $R_o$ (in) | 2.412  |

## PRODUCT ID

400S 200-68 (4x2x14ga) (Grade 50)

## CODES & STANDARDS

- ASTM A 1003, A 653, & C 955
- AISI S100-16



See Hermes/Hephaistos Technical Manual  
for complete design data