

**Product category:** S250 (2-1/2" Flange Structural Stud)  
**Product name:** **400S250-97 (50ksi, CP60) P - Punched**  
 97mils (12ga) Coating: CP60 per ASTM C955  
 Color coding: Red

### Geometric Properties

Web depth	4.000 in	Punchout width	1.50 in
Flange width	2.500 in	Punchout length	4.00 in
Stiffening lip	0.625 in	Min. steel thickness	0.0966 in
Design thickness	0.1017 in	Fy with Cold-Work, Fya	50.0 ksi
Yield strength, Fy	50 ksi		
Ultimate, Fu	65.0 ksi		

### Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A)	0.966 in <sup>2</sup>
Member weight per foot of length	3.29 lb/ft
Moment of inertia (Ix)	2.542 in <sup>4</sup>
Section modulus (Sx)	1.271 in <sup>3</sup>
Radius of gyration (Rx)	1.623 in
Gross moment of inertia (Iy)	0.801 in <sup>4</sup>
Gross radius of gyration (Ry)	0.911 in

### Effective Section Properties, Strong Axis

Effective Area (Ae)	0.765 in <sup>2</sup>
Moment of inertia for deflection (Ix)	2.542 in <sup>4</sup>
Section modulus (Sx)	1.202 in <sup>3</sup>
Allowable bending moment (Ma)	40.44 in-k
Allowable moment based on distortion buckling (Mad)	38.05 in-k
Allowable shear force in web (solid section)	6658 lb
Allowable shear force in web (perforated section)	1207 lb
Unbraced length (Lu)	51.9 in

### Torsional Properties

St. Venant torsion constant (J x 1000)	3.329 in <sup>4</sup>
Warping constant (Cw)	2.978 in <sup>6</sup>
Distance from shear center to neutral axis (Xo)	-2.066 in
Distance between shear center and web centerline (m)	1.214 in
Radii of gyration (Ro)	2.781 in
Torsional flexural constant (Beta)	0.448

### ASTM & Code Standards:

- AISI North American Specification [NASPEC] S100-12
- \* Effective properties incorporate the strength increase from the cold work of forming
- Gross properties are based on the cross section away from the punchouts
- Structural framing is produced to meet or exceed ASTM C955
- Sheet steel meets or exceeds mechanical and chemical requirements of ASTM A1003
- ClarkDietrich's structural and nonstructural framing comply with the SFIA Code Compliance Certification Program, ICC-ES ESR-1166P and Intertek CCRR-0206
- For installation & storage information refer to ASTM C1007
- SDS & Product Certification Information is available at [tools.clarkdietrich.com](http://tools.clarkdietrich.com)

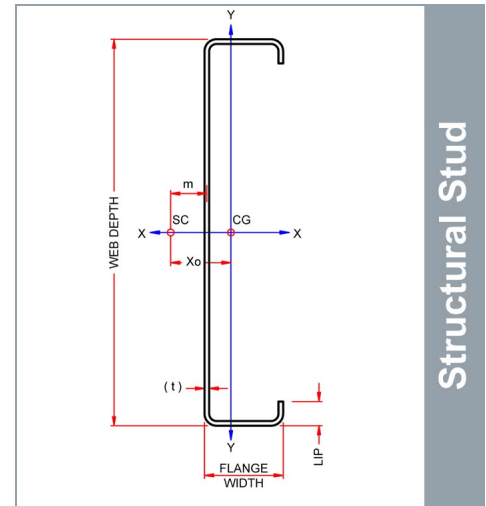
### Sustainability Credits:

For more details and LEED letters contact Technical Services at 888-437-3244 or visit [www.clarkdietrich.com/LEED](http://www.clarkdietrich.com/LEED)

**LEED v4 MR Credit** -- Building Product Disclosure and Optimization: EPD (1 point) - Sourcing of Raw Materials (1 point) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points) - Innovation Credit (up to 2 points).

**LEED 2009 Credit MR 2 & MR 4** -- ClarkDietrich's steel products are 100% recyclable and have a national average recycled content of 34.2% (19.8% post-consumer and 14.4% pre-consumer). If seeking a higher number to meet Credit MR 5, please contact us at ([info@clarkdietrich.com](mailto:info@clarkdietrich.com) / 888-437-3244)

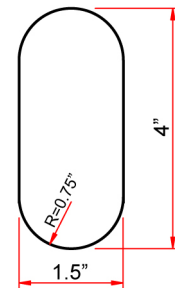
### 05.40.00 (Cold-Formed Metal Framing)



Structural Stud

### Used in framing applications:

- Load-bearing walls
- Curtain walls
- Tall interior walls
- Floor & ceiling joists
- Trusses



**Structural Punchout**

East market punchout spacing:  
 12" from lead end then 24" o.c.

West market punchout spacing:  
 24" from lead end then 24" o.c.

### Project Information

Name:  
 Address:

### Contractor Information

Name:  
 Contact:  
 Phone:  
 Fax:

### Architect Information

Name:  
 Contact:  
 Phone:  
 Fax: