250S200-97-P (50ksi, CP60, Punched)
2-1/2" structural stud with S200 (2") flange - 97mils (12ga)

Coating: CP60 per AISI S240   **Color Code:** Red

Geometric Properties

Web depth: 2.500 in   **Thickness:** 97mils (12ga)   **Yield strength, Fy:** 50 ksi
Flange width: 2.000 in   **Design Thickness:** 0.1017 in   ***Fy with Cold-Work, Fya:** 57.6 ksi
Stiffening lip: 0.625 in   **Min. steel thickness:** 0.0966 in   **Ultimate, Fu:** 65.0 ksi

| Gross Section Properties of Full Section, Strong Axis	
Cross sectional area (A)	$0.711\ in^2$
Member weight per foot of length	2.42 lb/ft
Moment of inertia (Ix)	$0.719\ in^4$
Section Modulus (Sx)	$0.575\ in^3$
Radius of gyration (Rx)	1.005 in
Gross moment of inertia (Iy)	$0.386\ in^4$
Gross radius of gyration (Ry)	0.737 in
Effective Section Properties, Strong Axis	
Effective Area (Ae)	$0.635\ in^2$
Moment of inertia for deflection (Ix)	$0.719\ in^4$
Section modulus (Sx)	$0.575\ in^3$
Allowable bending moment (Ma)	19.84 in-k
Allowable moment based on distortion buckling (Mad)	17.13 in-k
Allowable shear force in web (solid section)	3798 lb
Allowable shear force in web (perforated section)	429 lb
Unbraced length (Lu)	43.4 in
Torsional Properties	
St. Venant torsional constant (J x 1000)	$2.452\ in^4$
Warping constant (Cw)	$0.735\ in^6$
Distance from shear center to neutral axis (Xo)	-1.843 in
Distance between shear center and web centerline (m)	1.060 in
Radii of gyration (Ro)	2.225 in
Torsional flexural constant (Beta)	0.314

- Effective properties incorporate the strength increase from the cold work of forming.
- Gross properties are based on the cross section away from the punchouts.
- Effective properties are based on knockout/punched sections.

Code Approvals & Performance Standards

- AISI S100-16 (2020) w/S2-20 North American Specification for the Design of Cold-Formed Steel Structural Members
- AISI S240-20 North American Standard for Cold-Formed Steel Structural Framing
  - (Compliant to ASTM C955 , but IBC replaced with AISI S200 in IBC 2015, AISI S240 in IBC 2018)
  - Section A3 Material - Chemical & mechanical requirements (Referencing ASTM A1003/A1003M)
  - Section A4 Corrosion Protection (Referencing ASTM A653/A653M)
  - Section C Installation - (Referencing ASTM C1007)
- AISI S202-20 Code of Standard Practice for Cold-Formed Steel Structural Framing
  - Section F3 Delivery, Handling and Storage of Materials
- IBC 2021 International Building Code
- ICC-ES ESR-1166P Structural Studs and Track
  - ESR-1166P LABC and LARC Supplement
  - ESR-1166P Catalog ClarkDietrich Structural Technical Design Guide (6/22/20)
- Intertek CCRR-0206 Structural Studs and Track
- SFIA Stud Code Compliance Certification Program
- SDS For ASTM A1003 Steel Framing Products For Interior Framing, Exterior Framing and Clips/Accessories
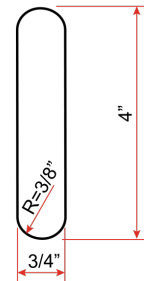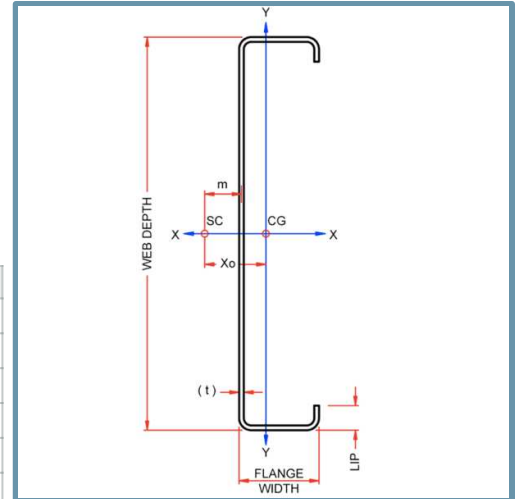
Structural Punchout

East Coast / Central punch spacing:
Center of punchoutss are
12" from lead end, then 24" o.c.

West Coast punch spacing:
Center of punchouts are
24" from lead end, then 24" o.c.

Center of tail end punchout not less
than 12" from end of stud.

If lateral bracing is required for
head-of-wall deflection track and a
punchout is not spaced 12" from the top of
stud, use strapping and blocking in lieu of
CRC or Spazzer Bar lateral bridging.

If custom punchout patterns are required,
contact ClarkDietrich Sales or local plant
for requests.

Sustainability Credits For more details and
LEED letters contact Technical Services at 888-437-
3244 or visit clarkdietrich.com/LEED.
- **LEED v4.1 MR Credit:** Environmental Product
  Declarations: EPD (1 point) - Sourcing of Raw
  Materials (up to 2 points) - Material Ingredients (1
  point) - Construction and Demolition Waste
  Management (up to 2 points)
- **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).

Structural Studs The technical content of this literature is effective 03/11/24 and supersedes all previous information.