

**1000S350-43-P (33ksi, CP60, Punched)**
**10" structural stud with S350 (3-1/2") flange - 43mils (18ga)**
**Coating:** CP60 per AISI S240

**Color Code:** Yellow

**Geometric Properties**
**Web depth:** 10.000 in

**Thickness:** 43mils (18ga)

**Yield strength,  $F_y$ :** 33 ksi

**Flange width:** 3.500 in

**Design Thickness:** 0.0451 in

**\* $F_y$  with Cold-Work,  $F_{ya}$ :** 33.0 ksi

**Stiffening lip:** 0.625 in

**Min. steel thickness:** 0.0428 in

**Ultimate,  $F_u$ :** 45.0 ksi

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

Cross sectional area (A)	0.842 in <sup>2</sup>
Member weight per foot of length	2.86 lb/ft
Moment of inertia (Ix)	13.034 in <sup>4</sup>
Section Modulus (Sx)	2.607 in <sup>3</sup>
Radius of gyration (Rx)	3.936 in
Gross moment of inertia (Iy)	1.429 in <sup>4</sup>
Gross radius of gyration (Ry)	1.303 in

**Effective Section Properties, Strong Axis**

Effective Area (Ae)	0.345 in <sup>2</sup>
Moment of inertia for deflection (Ix)	12.468 in <sup>4</sup>
Section modulus (Sx)	1.813 in <sup>3</sup>
Allowable bending moment (Ma)	35.84 in-k
Allowable moment based on distortion buckling (Mad)	35.11 in-k
Allowable shear force in web (solid section)	836 lb
Allowable shear force in web (perforated section)	836 lb
Unbraced length (Lu)	89.1 in

**Torsional Properties**

St. Venant torsional constant (J x 1000)	0.571 in <sup>4</sup>
Warping constant (Cw)	29.542 in <sup>6</sup>
Distance from shear center to neutral axis (Xo)	-2.560 in
Distance between shear center and web centerline (m)	1.572 in
Radii of gyration (Ro)	4.872 in
Torsional flexural constant (Beta)	0.724

- 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.
- **Web-height to thickness ratio exceeds 200. Web Stiffeners are required at all support points and concentrated loads.**
- **This section does not meet the requirements of AISI North American Specifications. Increase the thickness or contact ClarkDietrich Tech Support for design solutions.**

**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 A5 Products - Thickness, shapes, tolerances, identification
  - 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
- **SDS For ASTM A1003 Steel Framing Products** For Interior Framing, Exterior Framing and Clips/Accessories


**Structural Punchout**
**East Coast / Central punch spacing:**

Center of punchouts 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](http://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).