

550PDS125-18-P (70ksi, G40EQ, Punched)

5-1/2" ProSTUD® 20 (18mil) Drywall Stud with PDS125 (1-1/4") flange

Coating: G40EQ

Color Code: Brown

Geometric Properties

Web depth: 5.500 in	Design Thickness: 0.0190 in
Flange width: 1.250 in	Minimum thickness: 0.0181 in
Stiffening lip: 0.360 in	Yield strength, Fy: 70 ksi

Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A)	0.163 in ²
Member weight per foot of length	0.553 lb/ft
Moment of inertia (Ix)	0.688 in ⁴
Radius of gyration (Rx)	2.057 in
Gross moment of inertia (Iy)	0.031 in ⁴
Gross radius of gyration (Ry)	0.434 in

Effective Section Properties, Strong Axis

Effective Area (Ae)	0.046 in ²
Moment of inertia for deflection (Ixe)	0.552 in ⁴
Section modulus (Sxe)	0.129 in ³
Allowable bending moment (Ma)	5,405 in-lbs
Allowable shear force in web (Unpunched section) (Vag)	113 lb
Allowable shear force in web (Punched section) (Vanet)	113 lb

Torsional Properties

St. Venant torsional constant (J x 1000)	0.0196 in ⁴
Warping constant (Cw)	0.185 in ⁶
Distance from shear center to neutral axis (Xo)	-0.756 in
Radii of gyration (Ro)	2.234 in
Torsional flexural constant (Beta)	0.886
Unbraced length (Lu)	23.8 in

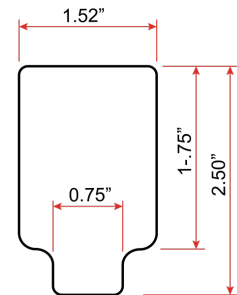
- Effective properties incorporate the strength increase from the cold work of forming as applicable per AISI A3.3.2 of AISI S100-16 (2020) w/S2-20.
- Tabulated gross properties, including torsional properties, are based on full-unreduced cross section of the studs, away from punchouts.
- For deflection calculations, use the effective moment of inertia.
- Allowable moment includes cold work of forming.
- Allowable moment is taken as the lowest value based on local or distortional buckling. Distortional buckling strength is based on a k-phi = 0.
- **Web-height to thickness ratio exceeds 260**

Code Approvals & Performance Standards

- **AISI S100-16 (2020) w/S2-20** North American Specification for the Design of Cold-Formed Steel Structural Members
- **AISI S220-20** North American Standard for Cold-Formed Steel Framing - Nonstructural Members
 - (Compliant to ASTM C645, but IBC replaced with AISI S220 in IBC 2015)
 - 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 C754)
- **AISI S202-20** Code of Standard Practice for Cold-Formed Steel Structural Framing
 - Section F3 Delivery, Handling and Storage of Materials
- **ASTM E72** Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
- **ASTM E90** Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- **ASTM E119** Standard Test Methods for Fire Tests of Building Construction and Materials
- **IBC 2024** International Building Code
- **Intertek CRR-0207** Non-Structural Metal Framing
- **LA RR #26019** City of Los Angeles ProSTUD Research Report
- **UL Designs 263** "Fire Tests of Building Construction and Materials"
- **UL File Number R26512** Full list of ProSTUD and ProTRAK UL design assemblies
- **SDS For ASTM A1003 Steel Framing Products** For Interior Framing, Exterior Framing and Clips/Accessories



- Embossments in web are only placed on sections 2-1/2" and wider.
- U.S. Patent No. 9,010,070



Non-Structural Punchout

East Coast / Central punch spacing:

Center of punchouts are
12" from lead end, then 48" 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 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).

5-1/2" ProSTUD 20 (18mil 70ksi) Drywall Stud - FULL COMPOSITE Limiting Heights (AC86-2019)
With 1-1/4" leg non-deflection track + (1 layer) 5/8" Type X Gypsum Board each side

Spacing (inches)	5 psf			7.5 psf			10 psf		
	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
12	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-

Allowable composite limiting heights were tested in accordance with AISI S916 and ICC-ES AC86.

- Additional composite wall testing and analysis requirements of the SFIA Code Compliance Certification Program were also observed.
- In accordance with current building codes and AISI design standards, the 1/3 Stress Increase for strength was not used.
- The composite limiting heights provided in the tables are based on a single layer of 5/8" Type X gypsum board from the following manufacturers: American, CertainTeed, Georgia Pacific, Continental, National, PABCO, and USG.
- The gypsum board must be applied full height in the vertical orientation to each stud flange and installed in accordance with ASTM C754 using minimum No. 6 Type S Drywall screws spaced as listed below:
 - Screws spaced a maximum of 16 in on-center to framing members (including top & bottom track) spaced at 16 in or 12 in on-center.
 - Screws spaced a maximum of 12 in on-center to framing members (including top & bottom track) spaced at 24 in on-center.
- No fasteners are required for attaching the stud to the track except as detailed in ASTM C754.
- Stud end bearing must be a minimum of 1 inch.
- f: Adjacent to the height value indicates that flexural stress controls the allowable wall height.
- s: Adjacent to the height value indicates that shear/end reaction controls the allowable wall height.

5-1/2" ProSTUD 20 (18mil 70ksi) Drywall Stud - NON-COMPOSITE Limiting Heights (FULLY BRACED)

Spacing (inches)	5 psf			7.5 psf			10 psf		
	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
12	24'-4"	19'-4"	16'-11"	20'-10"	16'-11"	14'-9"	18'-0"	15'-4"	13'-5"
16	22'-1"	17'-7"	15'-4"	18'-0"	15'-4"	13'-5"	15'-7"	13'-11"	12'-2"
24	18'-0"	15'-4"	13'-5"	14'-8"	13'-5"	11'-9"	11'-4"	11'-4"	10'-8"

- Heights are based on AISI S100-16 (2020) w/S2-20, North American Specification, and AISI S220-20, North American Standard for Cold-Formed Steel Framing - Nonstructural Members, using steel properties alone.
- Above listed Non-Composite Limiting Heights are applicable when the unbraced length is less than or equal to L_u .
- Heights are limited by moment, deflection, shear, and web crippling (assuming 1" end reaction bearing).
- **Web-height to thickness ratio exceeds 260 - Web stiffeners are required at bearing points.**

5-1/2" ProSTUD 20 (18mil 70ksi) Drywall Stud - NON-COMPOSITE Limiting Heights (BRACED at 48" o.c.)

Spacing (inches)	5 psf			7.5 psf			10 psf		
	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
12	19'-10"	19'-4"	16'-11"	16'-2"	16'-2"	14'-9"	14'-0"	14'-0"	13'-5"
16	17'-2"	17'-2"	15'-4"	14'-0"	14'-0"	13'-5"	12'-2"	12'-2"	12'-2"
24	14'-0"	14'-0"	13'-5"	11'-5"	11'-5"	11'-5"	9'-11"	9'-11"	9'-11"

- Heights are based on AISI S100-16 (2020) w/S2-20, North American Specification, and AISI S220-20, North American Standard for Cold-Formed Steel Framing - Nonstructural Members, using steel properties alone.
- Above listed Non-Composite Limiting Heights are based on discreet stud bracing at 4 ft o.c.
- Heights are limited by moment, deflection, shear, and web crippling (assuming 1" end reaction bearing).
- **Web-height to thickness ratio exceeds 260 - Web stiffeners are required at bearing points.**