

**Product category:** ProSTUD® 20 Drywall Stud  
**Product name:** 250PDS125-18 70ksi G40EQ - Punched  
 2-1/2" ProSTUD 20 (18mil)  
 Coating: G40EQ  
 Color coding: Brown

### Geometric Properties

Web depth	2.500 in	Weight	0.354 lb/ft
Flange width	1.250 in	Punchout width	0.750 in
Stiffening lip	0.315 in	Punchout length	1.750 in
Design thickness	0.0190 in	Minimum thickness	0.0181 in
Yield stress, Fy	70 ksi		

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

Cross sectional area (A)	0.104 in <sup>2</sup>
Moment of inertia (Ix)	0.107 in <sup>4</sup>
Radius of gyration (Rx)	1.017 in
Gross moment of inertia (Iy)	0.023 in <sup>4</sup>
Gross radius of gyration (Ry)	0.470 in

### Effective Section Properties, Strong Axis

Effective area (Ae)	0.043 in <sup>2</sup>
Moment of inertia for deflection (Ixe)	0.099 in <sup>4</sup>
Section modulus (Sxe)	0.056 in <sup>3</sup>
Allowable bending moment (Ma)	2,361 in-lbs
Allowable shear force in web (Unpunched) (Vag)	256 lb
Allowable shear force in web (Punched) (Vanet)	204 lb

### Torsional Properties

St. Venant torsion constant (J x 1000)	0.0125 in <sup>4</sup>
Warping constant (Cw)	0.031 in <sup>6</sup>
Distance from shear center to neutral axis (Xo)	-1.004 in
Radii of gyration (Ro)	1.504 in
Torsional flexural constant (Beta)	0.555
Unbraced Length (Lu)	24.5 in

### Code Approvals & Performance Standards

Calculated properties are based on:

#### AISI S100-16 North American Specification for the Design of CFS Structural Members

- Effective properties incorporate the strength increase from the cold work of forming as applicable per AISI A7.2.
- 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.

#### AISI S220-15 North American Standard for CFS Framing - Nonstructural Members

- Section A4 - Material - Chemical & mechanical requirements (Referencing ASTM A1003/A1003M)
- Section A5 - Corrosion Protection (Referencing ASTM A653/A653M)
- Section A6 - Products - Thickness, shapes, tolerances, identification
- Section C - Installation - (Referencing ASTM C754)

#### ClarkDietrich's nonstructural framing comply with:

- IBC-2018 - International Building Code
- Intertek CCRR-0207, LA RR #26019, NYC - OTCR
- SFIA Code Compliance Certification Program
- ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
- SDS & Product Certification Information is available at [www.clarkdietrich.com/SupportDocs](http://www.clarkdietrich.com/SupportDocs)

#### Notes:

- East Coast Punch Pattern: Center of knockouts are 12" from the leading edge then 48" o.c.
- West Coast Punch Pattern: Center of knockouts are 24" from the leading edge then 24" o.c.

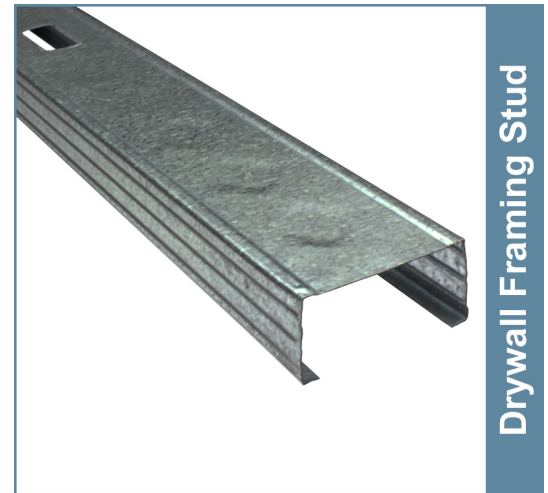
#### Sustainability Credits:

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)

### 09.22.16 (Non-Structural Metal Framing)



\* Embossments in web are only placed on sections 2-1/2" and wider.

#### UL® Testing Standard

- UL® 263, ASTM E119
- Over 50 UL® design listings
- UL® file number R26512
- U.S. Patent No. 9,010,070



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## 2-1/2" ProSTUD 20 (18mil) Drywall Stud - COMPOSITE Limiting Heights (AC86-2019)

(1 layer) 5/8" Type X Gypsum Board

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	17'-5"	14'-8"	12'-11"	15'-3"	12'-10"	11'-3"	13'-10"	11'-8"	10'-3"
16	16'-8"	14'-0"	12'-4"	14'-6"	12'-3"	10'-9"	13'-2"	11'-2" <sup>f</sup>	9'-9"
24	15'-2"	12'-10"	11'-3"	13'-2" <sup>f</sup>	11'-2"	9'-10"	11'-5" <sup>f</sup>	10'-2"	8'-5"

**Composite Table Notes:**

- Allowable composite limiting heights were determined in accordance with ICC-ES AC86-2019.
- Additional composite wall testing and analysis requirements of the SFIA Code Compliance Certification Program were 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.

## 2-1/2" ProSTUD 20 (18mil) 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	13'-9"	10'-11"	9'-6"	12'-0"	9'-6"	8'-4"	10'-11"	8'-8"	7'-7"
16	12'-6"	9'-11"	8'-8"	10'-11"	8'-8"	7'-7"	9'-11"	7'-10"	6'-10"
24	10'-11"	8'-8"	7'-7"	9'-6"	7'-7"	6'-7"	8'-4"	6'-10"	6'-0"

**Non-Composite (Fully Braced) Table Notes:**

- Heights are based on AISI S100-16, North American Specification, and AISI S220-15, 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 Lu.
- Heights are limited by moment, deflection, shear, and web crippling (assuming 1" end reaction bearing).

## 2-1/2" ProSTUD 20 (18mil) 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	13'-5"	10'-11"	9'-6"	10'-11"	9'-6"	8'-4"	9'-6"	8'-8"	7'-7"
16	11'-7"	9'-11"	8'-8"	9'-6"	8'-8"	7'-7"	8'-3"	7'-10"	6'-10"
24	9'-6"	8'-8"	7'-7"	7'-9"	7'-7"	6'-7"	6'-8"	6'-8"	6'-0"

**Non-Composite (Braced at 48" o.c.) Table Notes:**

- Heights are based on AISI S100-16, North American Specification, and AISI S220-15, 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).

**Project Information**

Name:  
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**Contractor Information**

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**Architect Information**

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