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Expanding Your Solutions

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250VS125-18 (25 GA.) 33 KSI VIPERSTUD (SELECT MARKETS ONLY)

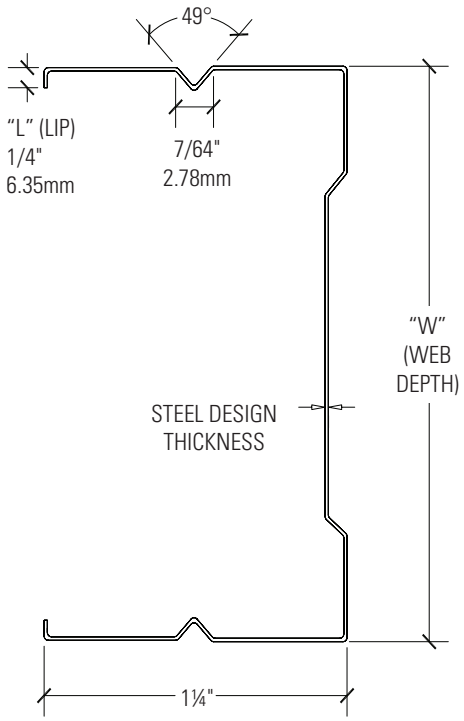
Geometric Properties

2-1/2" x 1-1/4" flange, 18 mil 33 ksi ViperStuds are manufactured from G40 hot-dipped galvanized steel. G60 and G90 coating are available through special order, and may require up-charges and extended lead times.

Steel Thickness

Model No.	Design Thickness (in)	Minimum Thickness (in)	Yield (ksi)	"W" Web Sizes (in)	Coating[4,5]	Flange (in)	"L" Return Lip (in)
250VS125-18 (25 ga.)	0.0188	0.0179	33	2-1/2	G40	1-1/4	1/4

Notes: **1.** Uncoated steel thickness. Thickness is for carbon sheet steel. **2.** Minimum thickness represents 95% of the design thickness and is the minimum acceptable thickness. **3.** Knockout size for 2-1/2" Stud is 3/4" x 1-3/4". **4.** Per ASTM C645 & A1003, Table 1. **5.** G60 & G90 available upon request. Will require extended lead time and upcharge.



Color Code (painted on ends): 18 mil: None

ASTM & Code Standards:

- ASTM A653/A653M, A924/A924M, A1003/1003, C645 & C754
- ICC-ES & SFIA Code Compliance Certification Program
- ICC ESR-2620
- CBC: 2013, 2016, 2019
- IBC: 2012, 2015, 2018, 2021
- AISI: S100, S220

LEED v4 for Building and Design Construction

- MR Prerequisite: Construction and Demolition Waste Management Planning.
- MR Credit: Construction and Demolition Waste Management.
- MR Credit: Building Product Disclosure and Optimization – Sourcing of Raw Materials, Option 2.
- MR Credit: Building Product Disclosure and Optimization – Environmental Product Declarations, Options 1 & 2.
- MR Credit: Building Product Disclosure and Optimization – Material Ingredients, Option 1.
- MR Credit: Building Life-Cycle Impact Reduction, Option 4.

250VS125-18 (25 ga.) 33 KSI ViperStud Properties

Design (in)	Min (in)	Yield (ksi)	Weight (lb/ft)	Gross Properties					Effective Properties		Moment				Critical Unbraced Length[7] Lu (in)
				Area (in^2)	Ix (in^4)	rx (in)	Iy (in^4)	ry (in)	Ixd (in^4)	Sx (in^3)	Allowable Moment Ma (in-k)	Local Buckling Nominal Moment[2] Viper Mnl (in-k)	Distortional Buckling Nominal Moment[2] Viper Mnd (in-k)	Nominal Moment for Conventional Studs[3] Mn (in-k)	
0.0188	0.0179	33	0.3376	0.0992	0.1022	1.0150	0.0204	0.4540	0.0977	0.0653	1.29	2.15	1.95	1.72	29.7

Notes: **1.** Section properties are in accordance with AISI S100-16/S2-20. Viper 25 and Viper20 section properties are based on testing. Allowable moment (Ma) is calculated with a safety factor of 1.81 in accordance with Chapter F of AISI S100-16/S2-20 specification. **2.** Nominal moment for Viper 18 mil, Viper 30 mil, and Viper 33 mil conventional studs are based on calculations in accordance with AISI S100-16/S2-20. Allowable moments (Ma) can be calculated with a 1.67 safety factor. **3.** Section properties are in accordance with AISI S100-16/S2-20. **4.** Web depth-to-thickness ratio exceeds 200. **5.** Web depth-to-thickness ratio exceeds 260. **6.** ViperStud is considered fully braced when unbraced length is less than listed Lu. **7.** KΦ assumed to be zero for distortional buckling moments.

Non-Composite Limiting Heights – Braced at 48" O.C.

Depth (in)	Gauge	Member Designation	Design (in)	Min (in)	Yield (ksi)	Spacing (o.c.)	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
2-1/2	25	250VS125-18 (25 ga.)	0.0188	0.0179	33	12	12' 1"	10' 10"	9' 5"	9' 11"	9' 5"	8' 3"	8' 7"	8' 7"	7' 6"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	16	10' 6"	9' 10"	8' 7"	8' 7"	8' 7"	7' 6"	7' 5"	7' 5"	6' 9"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	24	8' 7"	8' 7"	7' 6"	6' 11"	6' 11"	6' 6"	5' 2"	5' 2"	5' 2"

Notes: **1.** Limiting heights are in accordance with AISI S100-16/S2-20 using all steel non-composite design. **2.** Limiting heights are established by considering flexure, shear, web crippling and deflection. **3.** Lateral-Torsional buckling moments are based on section F of AISI S100-16/S2-20, with max discrete bracing of 48" o.c. **4.** For web crippling, when h/t≤ 200, the web crippling values are computed based on section G of AISI S100-16/S2-20, when h/t>200, the web crippling values are based on testing with a bearing length of 1". **5.** No web stiffeners are required for studs with h/t < 200, web crippling and shear values have been confirmed by testing. **6.** The factory punchouts are in accordance with AISI standards. The distance from the center of the last punchout to the end of the stud is 12". **7.** Use non-composite tables when 1/2 inch gypsum board, horizontal board, RC channel, furring channel, or sound clips are used.

"f" - flexure controls; "s" - shear controls; "w" - web crippling controls. No letter next to the number means deflection controls.

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Non-Composite Limiting Heights – Fully Braced

Depth (in)	Gauge	Member Designation	Design (in)	Min (in)	Yield (ksi)	Spacing (o.c.)	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
2-1/2	25	250VS125-18 (25 ga.)	0.0188	0.0179	33	12	12' 5"	10' 10"	9' 5"	10' 1"	9' 5"	8' 3"	8' 9"	8' 7"	7' 6"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	16	10' 9"	9' 10"	8' 7"	8' 9"	8' 7"	7' 6"	7' 7"	7' 7"	6' 9"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	24	8' 9"	8' 7"	7' 6"	6' 11"	6' 11"	6' 6"	5' 2"	5' 2"	5' 2"

Notes: **1.** Limiting heights are in accordance with AISI S100-16/S2-20 using all steel non-composite design. **2.** Limiting heights are established by considering flexure, shear, web crippling, and deflection. **3.** For bending, studs are assumed to be adequately braced to develop full allowable moment. Studs are considered fully braced when unbraced length is less the Lu. See section properties table on page 5 for Lu values. **4.** For web crippling, when h/t ≤ 200, the web crippling values are computed based on section G6 of AISI S100-16/S2-20, when h/t > 200, the web crippling values are based on testing with a bearing length of 1". **5.** No web stiffeners are required for studs with h/t < 200, web crippling and shear values have been confirmed by testing. **6.** The factory punchouts are in accordance with AISI standards. The distance from the center of the last punchout to the end of the stud is 12". **7.** Use non-composite tables when 1/2 inch gypsum board, horizontal board, RC channel, furring channel, or sound clips are used.

"f" - flexure controls; "s" - shear controls; "w" - web crippling controls. No letter next to the number means deflection controls.

Allowable Composite Heights for Non-Load Bearing Walls

Depth (in)	Gauge	Member Designation	Design (in)	Min (in)	Yield (ksi)	Spacing (o.c.)	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
2-1/2	25	250VS125-18 (25 ga.)	0.0188	0.0179	33	12	17' 5"	14' 5"	12' 7"	14' 7" f	12' 7"	11' 0"	12' 8" f	11' 5"	9' 8"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	16	15' 6"f	13' 1"	11' 6"	12' 8" f	11' 5"	9' 8"	11' 0" f	10' 3"	8' 6"
		250VS125-18 (25 ga.)	0.0188	0.0179	33	24	12' 8" f	11' 5"	9' 8"	10' 4" f	9' 8"	8' 1"	8' 11" f	8' 6"	-

Notes: **1.** Sheathing, as specified in Section 3.2.2, must be attached to both faces of the wall for the full height of the wall with the long dimension parallel to the studs. **2**. Sheathing must be fastened to the studs with fasteners as specified in Section 3.2.3 and installed per Section 4.2.1. **3.** Placement of joints in the gypsum sheathing must be in accordance with Sections 4.6.3 and 4.6.4 of GA-216 or Section 7.5 of ASTM C840. **4.** The bottom and top tracks are xxxVT125 (solid flange track). A minimum 30 mil slotted flange track (xxxCST250 or xxxSLT250) may be used for the top track. **5.** End-bearing must be a minimum of 1 inch for xxxVT125 (solid flange track) and 1-5/8 inches for xxxCST250 or xxxSLT250 (slotted flange track). **6.** Notes 1, 2, & 3 are referenced in ICC ESR 2620 page 5. **7.** For any other top tracks not listed in note 4, please contact technical services for assistance. **8.** For GWB installed horizontally, see table for "Non-Composite Limiting Heights- Fully Braced" (see above).

CEMCO cold-formed steel framing products contain 30% to 37% recycled steel.
■ Total Recycled Content: 36.9% ■ Post-Consumer: 19.8% ■ Pre-Consumer: 14.4%

CSI Division:
■ 09.22.16 – Non-Structural Metal Framing

Check the updated list of Certified Production Facilities at Intertek's website at http://www.intertek.com/building/sfia

This technical information reflects the most current information available and supersedes any and all previous publications effective February 20, 2024.
02/20/2024 AT