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162VS125-15 (25EQ) VIPERSTUD

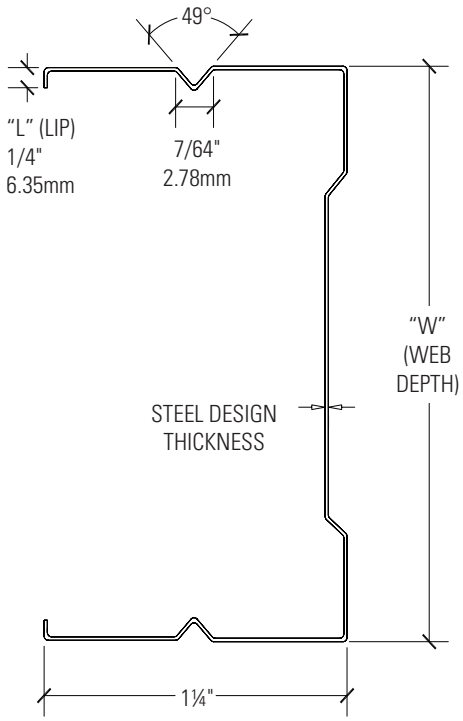
Geometric Properties

1-5/8" x 1-1/4" flange, 15 mil ViperStuds are manufactured from standard G40 hot-dipped galvanized steel. G60 and G90 coatings 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)
162VS125-15 (25EQ)	0.0155	0.0147	33	1-5/8	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 1-5/8" Stud is 3/4" x 1-3/4". **4.** Per ASTM C645 & A1003, Table 1. **5.** G60 and G90 available upon request. Will require extended lead time and upcharge.



Color Code (painted on ends): 15 mil: None with Dark Grey band on pallet

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.

162VS125-15 (25EQ) ViperStud Proper-

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)	
0.0155	0.0147	50	0.24	0.071	0.032	0.671	0.015	0.461	0.032	0.024	0.66	1.42	1.20	1.02 (18 mil)	25.1

Notes: **1.** Section properties are in accordance with AISI S100 & S220. 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 & S220 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 & S220. Allowable moments (Ma) can be calculated with a 1.67 safety factor. **3.** Section properties are in accordance with AISI: S100, S220. **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
1-5/8	25EQ	162VS125-15 (25EQ)	0.0155	0.0147	50	12	8'-8" f	7'-6"	6'-7"	7'-1" f	6'-7"	--	6'-1" f	6'-0"	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	16	7'-6" f	6'-10"	6'-0"	6'-1" f	6'-0"	--	--	--	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	24	6'-1" f	6'-0"	--	--	--	--	--	--	--

Notes: **1.** Limiting heights are in accordance with AISI S100 & S220 using all steel non-composite design. **2.** Limiting heights are established by considering flexure, shear, web crippling, and deflection. The web crippling values are based on testing with a bearing length of 1". **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. **4.** Viper25 & Viper20 distortional & local buckling moments and stiffness are based on testing in accordance with App. A of a non-structural code compliance program. **5.** For web crippling, when h/t≤ 200, the web crippling values are computed based on section C3.4.2 of AISI S100 & S220, when h/t>200, the web crippling values are based on testing with a bearing length of 1" and fastened to support. **6.** Web stiffeners are required for studs with h/t≥ 200, web crippling and shear values have been confirmed by testing. **Fully braced when unbraced length is less than Lu. See section properties table for Lu values.** **7.** The factory punchouts are in accordance with section C5 of AISI S100 & S220. The distance from the center of the last punchout to the end of the stud is 12".

"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
1-5/8	25EQ	162VS125-15 (25EQ)	0.0155	0.0147	50	12	9'-5" f	7'-6"	6'-7"	7'-8" f	6'-7"	--	6'-7" f	6'-0"	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	16	8'-1" f	6'-10"	6'-0"	6'-7" f	6'-0"	--	--	--	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	24	6'-7" f	6'-0"	--	--	--	--	--	--	--

Notes: **1.** Limiting heights are in accordance with AISI S100 & S220 using all steel non-composite design. **2.** Limiting heights are established by considering flexure, shear, web crippling, and deflection. The web crippling values are based on testing with a bearing length of 1". **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. **4.** Viper25 & Viper20 distortional & local buckling moments and stiffness are based on testing in accordance with App. A of a non-structural code compliance program. **5.** For web crippling, when h/t≤ 200, the web crippling values are computed based on AISI S100 & S220, when h/t>200, the web crippling values are based on testing with a bearing length of 1" and fastened to support. **6.** Web stiffeners are required for studs with h/t≥ 200, web crippling and shear values have been confirmed by testing. **Fully braced when unbraced length is less than Lu. See section properties table for Lu values.** **7.** The factory punchouts are in accordance with section C5 of AISI S100 & S220. The distance from the center of the last punchout to the end of the stud is 12".

"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
1-5/8	25EQ	162VS125-15 (25EQ)	0.0155	0.0147	50	12	13'-9"	11'-4"	9'-10"	12'-0"	9'-11"	8'-3"	10'-11"	8'-10"	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	16	12'-6"	10'-4"	8'-8"	10'-11"	8'-10"	--	9'-11"	7'-11"	--
		162VS125-15 (25EQ)	0.0155	0.0147	50	24	10'-11"	8'-10"	--	9'-5"	--	--	8'-2"	--	--

Notes: **1.** Viper composite limiting heights are based on testing in accordance with ICC-ES acceptance criteria AC86. **2.** No screws are required between stud and track, except as required by ASTM C754. Composite heights are based on using standard top track. Mechanical fastening of gypsum panel to the stud and track is required. These heights are also valid when installing a minimum 30 mil slotted track with 2-1/2" legs in lieu of standard track. **3.** Viper composite limiting heights based on a single layer of 5/8" Type X gypsum board applied vertically to both sides of the wall over full height. 5/8" Type X wallboard from the following manufacturers are acceptable: USG, National, Georgia Pacific, CertainTeed, American and Continental. **4.** For deflection track usage contact Technical Services. **5.** Review fire related assemblies for any additional requirements.

Allowable Ceiling Spans

L/240		4 PSF Lateral Support of Compression Flange						6 PSF Lateral Support of Compression Flange					
Member	Fy ksi	Unsupported Joist Spacing (in.) O.C.			Midspan Joist Spacing (in.) O.C.			Unsupported Joist Spacing (in.) O.C.			Midspan Joist Spacing (in.) O.C.		
		12	16	24	12	16	24	12	16	24	12	16	24
162VS125-15 (25EQ)	50	7'-3"f	6'-9"f	6'-0"f	8'-1"	7'-4"	6'-5"	6'-6" f	6'-0" f	5'-5" f	7'-1"	6'-5"	5'-7"

L/360		4 PSF Lateral Support of Compression Flange						6 PSF Lateral Support of Compression Flange					
Member	Fy ksi	Unsupported Joist Spacing (in.) O.C.			Midspan Joist Spacing (in.) O.C.			Unsupported Joist Spacing (in.) O.C.			Midspan Joist Spacing (in.) O.C.		
		12	16	24	12	16	24	12	16	24	12	16	24
162VS125-15 (25EQ)	50	7'-1"	6'-5"	5'-7"	7'-1"	6'-5"	5'-7"	6'-2"	5'-7"	4'-11"	6'-2"	5'-7"	4'-11"

Notes: **1.** Ceiling Spans are in accordance with AISI S100 & S220 using all steel non-composite design. **2.** Ceiling Spans are established by considering flexure, shear, web crippling, and deflection. **3.** For web crippling, when h/t ≤ 200, the web crippling values are computed based on AISI S100 & S220. When h/t > 200, the web crippling values are based on testing with a bearing length of 1". **4.** No web stiffeners are required for studs with h/t > 200, web crippling and shear values have been confirmed by testing. **5.** All values are for simple spans, with compression flange either unbraced or braced at mid-span. **6.** Ceiling spans are based on total load of assembly, not including storage or live load for accessible ceilings. **7.** The factory punchouts are in accordance with AISI S100 & S220. The distance from the center of the last punchout to the end of the stud is 12".

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

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