Code Compliance Research Report
CCRR-0154

Issue Date: 04-22-2010
Revision Date: 11-04-2019
Renewal Date: 11-04-2020

DIVISION: 05 00 00 METALS
Section: 05 40 00 Cold-Formed Metal Framing

DIVISION: 09 00 00 FINISHES
Section: 09 22 16.13 Non-Structural Metal Stud Framing

REPORT HOLDER:
Ware Industries, Inc. d\b\a Marino\WARE
400 Metuchen Road
South Plainfield, NJ 07080
(908) 757-9000
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REPORT SUBJECT:
***ViperStud*® Cold-Formed Steel Studs and Tracks**

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2018 and 2015 *International Building Code®* (IBC)
- 2018 and 2015 *International Residential Code®* (IRC)
- 2017 *Florida Building Code* (see Section 9)

NOTE: This report references 2018 Code sections and standards with [other code references] shown in brackets where they differ.

1.2 *ViperStud*® studs and tracks have been evaluated for the following properties:

- Structural
- Corrosion Protection

1.3 *ViperStud*® studs and tracks are cold-formed steel framing members used to construct interior nonload-bearing walls and ceilings that may be gypsum board sheathed.

2.0 STATEMENT OF COMPLIANCE

ViperStud® studs and tracks comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.

3.0 DESCRIPTION

3.1 The *ViperStud*® framing system products recognized in this report are limited to the products with designations found in Table 2: Viper25, Viper20, Viper 27mil, Viper 30mil, and Viper 33mil).

3.2 *ViperStud*® framing members (studs and tracks) are fabricated from Non-Structural Grade 50 (NS 50), Non-Structural Grade 70 (NS 70), or Non-Structural Grade 33 (NS 33) in accordance with ASTM A1003 steel specifications as specified in Table 2.

3.3 *ViperStud*® steel framing members have a protective coating conforming to Specification A653/A653M–G40 minimum, or equal, in accordance with AISI S220. Equivalent protective coatings are designated G40EQ.

3.4 *ViperStud*® studs are available in minimum steel thicknesses of 0.0147", 0.0181", 0.0269", 0.0296", and 0.0329". The framing members are available in depths of 1 5/8", 2 1/2", 3 5/8", 4", and 6". See Figure 1 for stud and track profiles and Table 2 for recognized product designations.

3.5 *ViperStud*® Track thicknesses correspond to stud thicknesses. The Viper25 track may also be used with the Viper20 studs.

3.6 Trade holes (knockouts) are spaced every 24 inches throughout the stud length and shall not be located within 10 inches of the end. Trade hole dimensions are as indicated in Figure 2 for each stud depth.

3.7 Fasteners for attachment of gypsum wall board to framing shall be #6 by 3/4" long bugle head drywall screws conforming to ASTM C1002.

3.8 Gypsum board shall be 5/8-inch Type X in conformance with ASTM C 1396 produced by any of the following manufacturers:

- United States Gypsum (USG)
- Continental
- CertainTeed
- American Gypsum
- National Gypsum
- Georgia Pacific
- PABCO

4.0 PERFORMANCE CHARACTERISTICS

4.1 Allowable wall heights for interior nonload-bearing walls are shown in Tables 3, 5 and 6. Ceiling spans are shown in Table 7.

4.1.1 Allowable wall heights shown in Table 3 were established by using data obtained from testing of composite walls (i.e. gypsum board-sheathed walls) conducted in accordance with ICC-ES AC86.

4.1.2 Allowable wall heights shown in Tables 5 and 6 were established through structural analysis of the steel framing alone (i.e. non-composite) in accordance with AISI S100.

4.2 Nonload-bearing wall heights are limited by the lesser of the following: wall deflection; shear strength, web crippling strength, or flexural strength of the stud.

5.0 INSTALLATION

5.1 General:

ViperStud® studs and tracks must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Framing shall be in accordance with the code requirements and referenced AISI standards therein for cold-formed steel light frame construction. Stud to track screw attachment is optional.

5.3 Gypsum board (GWB) installation is applicable only to composite wall heights in Table 3:

5.3.1 GWB Shall be installed full height on both faces of the wall with the panel length vertically oriented. See Table 3 notes for fastening schedule.

5.3.2 Limitations on the location of horizontal gypsum board joints are specified in the notes for Table 3.

5.4 Additional installation details may apply to meet requirements for fire-resistance-rated assemblies.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 The ViperStud® framing identified in this report is deemed to comply with the referenced building codes subject to the following conditions:

6.2.1 The interior nonload-bearing wall assemblies shall be limited to interior installations where the superimposed axial load is zero pounds.

6.2.2 Allowable heights, spans, and loadings must comply with the tables in this report.

6.3 The Marino\WARE *ViperStud*® framing identified in this report is manufactured in accordance with the manufacturer's approved quality control system with inspections by Intertek at the following locations:

- 400 Metuchen Road
  South Plainfield, NJ 07080
  (908) 757-9000

- 4245 Railroad Avenue
  East Chicago, IN 46312
  (219) 378-7100

- 777 Greenbelt Parkway
  Griffin, GA 30223
  (678) 688-1312

7.0 SUPPORTING EVIDENCE

7.1 Manufacturer's drawings and installation instructions.

7.2 Reports of testing and engineering analysis in accordance with ICC-ES Acceptance Criteria for Cold-Formed Steel Framing Members – Interior Nonload-Bearing Wall Assemblies, AC86 approved May 2012, Editorially revised August 2015.

7.3 Evaluation and engineering analysis conforming to AISI S100, North American Specification for the Design of Cold-Formed Steel Structural Members, 2016, with Supplements 1 and 2.

7.4 Reports of testing and evaluation of G40 equivalent coating (G40EQ) to verify equivalent corrosion resistance to G40 for conformance with the requirements of AISI 220-15.

7.5 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

8.0 IDENTIFICATION

8.1 ViperStud® framing produced in accordance with this report shall be identified with labeling at a maximum spacing of 96 inches that includes the following information:

8.1.1 The manufacturer's identification.

8.1.2 The ViperStud® framing designation, uncoated steel thickness, yield strength if other than 33 ksi, protective coating designation if other than G40 (G40EQ when applicable) and, designation "NS"

8.1.3 Intertek name and Code Compliance Research Report number (Intertek CCRR-0154).

8.2 Bundles of like members shall be identified with the Intertek certification mark and Code Compliance Research Report number as shown below:

9.0 ADDITIONAL CODES

9.1 FLORIDA BUILDING CODE

9.1.1 *ViperStud*® studs and tracks described in Sections 2.0 through 7.0 of this Research Report, comply with the 2017 *Florida Building Code – Building and Florida Building Code – Residential*, including the High-Velocity Hurricane Zone (HVHZ) provisions with the following additional condition of use:

For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the maximum allowable wall height is limited to the height at the L/180 deflection level.

9.1.2 Intertek is an approved e*valuation entity* and *quality assurance entity* pursuant to Florida Statute 553.842 – *Product Evaluation and Approval*.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – CODE REFERENCED STANDARDS

2018 IBC	2015 IBC & 2017 FBC
AISI S100-16 AISI S220-15	AISI S100-12 AISI S200-11 ASTM C645-13

TABLE 2 – *ViperStud*® Specifications

ViperStud® Designation [1]	Applicable Stud Width (in)	Min. Base-Metal Thickness (in)	Min. Yield Strength (ksi)
Viper25	1-5/8", 2-1/2", 3-5/8", 4", and 6"	0.0147	50
Viper20	1-5/8", 2-1/2", and 3-5/8"	0.0181	70 [2]
Viper 27mil	1-5/8", 2-1/2", 3-5/8", 4", and 6"	0.0269	33
Viper 30mil	1-5/8", 2-1/2", 3-5/8", 4", and 6"	0.0296	33
Viper 33mil	1-5/8", 2-1/2", 3-5/8", 4", and 6"	0.0329	33

[1] *ViperTrack*® conforms to *ViperStud*® specifications, except as noted.
[2] *ViperTrack*® has minimum yield strength of 50 ksi

Table 3 – *ViperStud*® Limiting Heights Established from Composite Wall Analysis

Maximum allowable wall height (feet-inches) for the transverse uniform design load indicated (psf)

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360
VIPER25	162VS125-15	*12*	13'-9"	12'-0"	11'-4"	9'-10"	12'-0"	10'-6"	9'-11"	8'-3"	10'-11"	9'-5"	8'-10"	--
		16	12'-6"	10'-11"	10'-4"	8'-8"	10'-11"	9'-5"	8'-10"	--	9'-11"	8'-2"	7'-11"	--
		24	10'-11"	9'-5"	8'-10"	--	9'-5"	--	--	--	8'-2"	--	--	--
	250VS125-15	*12*	17'-3"	15'-1"	14'-5"	12'-9"	15'-0"	13'-2"	12'-7"	11'-1"	13'-8"	11'-11"	11'-6"	10'-1"
		16	15'-8"	13'-8"	13'-1"	11'-7"	13'-8"	11'-11"	11'-6"	10'-1"	12'-3" f	10'-10"	10'-5"	8'-9"
		24	13'-8"	11'-11"	11'-6"	10'-1"	11'-6" f	10'-5"	10'-0"	8'-2"	10'-0" f	9'-5"	8'-8"	--
	362VS125-15	*12*	20'-10"	18'-2"	17'-3"	15'-2"	18'-2"	15'-11"	15'-1"	13'-3"	15'-10" f	14'-5"	13'-9"	12'-0"
		16	18'-11"	16'-7"	15'-9"	13'-9"	15'-10" f	14'-5"	13'-9"	12'-0"	13'-9" f	13'-2"	12'-6"	10'-11"
		24	15'-10" f	14'-5"	13'-9"	12'-0"	12'-11" f	12'-7"	12'-0"	10'-6"	11'-3" f	11'-3" f	10'-11"	9'-6"
	400VS125-15	*12*	22'-1"	19'-3"	18'-3"	16'-3"	19'-3" f	16'-10"	15'-11"	14'-2"	16'-8" f	15'-4"	14'-6"	12'-11"
		16	20'-0"	17'-6"	16'-7"	14'-9"	16'-8" f	15'-4"	14'-6"	12'-11"	14'-5" f	13'-11"	13'-2"	11'-9"
		24	16'-8" f	15'-4"	14'-6"	12'-11"	13'-7" f	13'-4"	12'-8"	11'-3"	11'-9" f	11'-10" f	11'-6"	10'-1"
	600VS125-15	*12*	24'-8"	24'-4"	23'-9"	21'-1"	22'-3"	21'-5"	20'-9"	18'-5"	20'-0" f	19'-7"	18'-10"	16'-9"
		16	22'-11"	22'-3"	21'-7"	19'-2"	20'-0" f	19'-7"	18'-10"	16'-9"	17'-5" f	17'-5" f	17'-2"	15'-3"
		24	20'-0" f	19'-7"	18'-10"	16'-9"	16'-5" f	16'-5" f	16'-5" f	14'-8"	14'-2" f	14'-2" f	14'-2" f	13'-0"

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Table 3 (continued) – ViperStud® Limiting Heights Established from Composite Wall Analysis

Maximum allowable wall height (feet-inches) for the transverse uniform design load indicated (psf)

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*			*7.5 psf*			*10 psf*		
			L/120 [5]	L/240	L/360	L/120 [5]	L/240	L/360	L/120 [5]	L/240	L/360
VIPER20	162VS125-18	*12*	13'-10 "	11'-0"	9'-7 "	12'-1 "	9'-7 "	8'-5 "	11'-0"	8'-9 "	--
		16	12'-7 "	10'-0"	8'-9 "	11'-0"	8'-9 "	--	10'-0"	7'-11 "	--
		24	11'-0"	8'-9 "	--	9'-7 "	--	--	8'-9 "	--	--
	250VS125-18	*12*	18'-2 "	14'-5 "	12'-7 "	15'-10 "	12'-7 "	11'-0"	14'-5 "	11'-5 "	9'-10 "
		16	16'-6 "	13'-1 "	11'-5 "	14'-5 "	11'-5 "	9'-10 "	13'-1 "	10'-4 "	8'-10 "
		24	14'-5 "	11'-5 "	9'-10 "	12'-7 "	9'-10 "	8'-5 "	11'-5 "	8'-10 "	--
	362VS125-18	*12*	21'-11 "	18'-0"	15'-10 "	19'-1 "	15'-9 "	13'-10 "	17'-5 "	14'-3 "	12'-7 "
		16	19'-11 "	16'-4 "	14'-5 "	17'-5 "	14'-3 "	12'-7 "	15'-10 "	13'-0"	11'-4 "
		24	17'-5 "	14'-3 "	12'-7 "	15'-2 "	12'-6 "	10'-10 "	13'-10 "	11'-3 "	9'-9 "
	400VS125-18	*12*	22'-11 "	18'-11 "	16'-8 "	20'-"	16'-7 "	14'-7 "	18'-2 "	15'-1 "	13'-3 "
		16	20'-10 "	17'-3 "	15'-2 "	18'-2 "	15'-1 "	13'-3 "	16'-6 "	13'-8 "	12'-1 "
		24	18'-2 "	15'-1 "	13'-3 "	15'-10 "	13'-2 "	11'-7 "	14'-5 "	11'-11 "	10'-5 "
	600VS125-18	*12*	30'-6 "	26'-"	23'-0"	26'-7 "	22'-9 "	20'-1 " f	24'-2 "	20'-8 "	18'-4 " f
		16	27'-8 "	23'-7 "	20'-11 "	24'-2 "	20'-8 "	18'-4 "	21'-12 "	18'-9 "	16'-8 "
		24	24'-2 "	20'-8 "	18'-4 "	20'-11 "	18'-0"	16'-0"	18'-1 "	16'-5 "	14'-7 "

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Table 3 (continued) – ViperStud® Limiting Heights Established from Composite Wall Analysis

Maximum allowable wall height (feet-inches) for the transverse uniform design load indicated (psf)

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360
VIPER 27mil	162VS125-27	*12*	14'-4"	12'-7"	11'-5"	9'-11"	12'-6"	10'-11"	9'-11"	8'-5"	11'-5"	9'-11"	8'-10"	--
		16	13'-0"	11'-5"	10'-4"	8'-10"	11'-5"	9'-11"	8'-10"	--	10'-4"	8'-10"	7'-10"	--
		24	11'-5"	9'-11"	8'-10"	--	9'-10" f	8'-5"	--	--	8'-6" f	--	--	--
	250VS125-27	*12*	18'-3"	15'-11"	14'-5"	12'-8"	15'-11"	13'-11"	12'-8"	11'-0"	14'-4" f	12'-8"	11'-6"	10'-0"
		16	16'-7"	14'-5"	13'-2"	11'-6"	14'-4" f	12'-8"	11'-6"	10'-0"	12'-5" f	11'-6"	10'-5"	8'-11"
		24	14'-4" f	12'-8"	11'-6"	10'-0"	11'-9" f	11'-0"	10'-0"	8'-6"	10'-2" f	10'-0"	8'-11"	--
	362VS125-27	*12*	22'-9"	19'-11"	18'-1"	15'-10"	19'-11"	17'-5"	15'-10"	13'-10"	17'-7" f	15'-10"	14'-4"	12'-6"
		16	20'-8"	18'-1"	16'-5"	14'-4"	17'-7" f	15'-10"	14'-4"	12'-6"	15'-3" f	14'-4"	13'-0"	11'-2"
		24	17'-7" f	15'-10"	14'-4"	12'-5"	14'-4" f	13'-10"	12'-6"	10'-8"	12'-5" f	12'-5" f	11'-2"	--
	400VS125-27	*12*	24'-9"	21'-8"	19'-8"	17'-2"	20'-7" f	18'-11"	17'-2"	15'-0"	17'-10" f	17'-2"	15'-7"	13'-8"
		16	21'-10" f	19'-8"	17'-11"	15'-7"	17'-10" f	17'-2"	15'-7"	13'-8"	15'-5" f	15'-5" f	14'-2"	12'-4"
		24	17'-10" f	17'-2"	15'-7"	13'-8"	14'-7" f	14'-7" f	13'-8"	11'-10"	12'-7" f	12'-7" f	12'-4"	10'-9"
	600VS125-27	*12*	29'-7" f	28'-6"	25'-11"	22'-8"	24'-2" f	24'-2" f	22'-8"	19'-9"	20'-11" f	20'-11" f	20'-7"	18'-0"
		16	25'-7" f	25'-7" f	23'-6"	20'-7"	20'-11" f	20'-11" f	20'-7"	18'-0"	18'-1" f	18'-1" f	18'-1" f	16'-4"
		24	20'-11" f	20'-11" f	20'-7"	18'-0"	17'-1" f	17'-1" f	17'-1" f	15'-8"	14'-9" f	14'-9" f	14'-9" f	14'-2"

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Table 3 (continued) – ViperStud® Limiting Heights Established from Composite Wall Analysis

Maximum allowable wall height (feet-inches) for the transverse uniform design load indicated (psf)

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	5 psf				7.5 psf				10 psf			
			L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360
VIPER 30mil	162VS125-30	12	14'-7"	12'-8"	11'-6"	10'-0"	12'-9"	11'-1"	10'-0"	8'-6"	11'-7"	10'-1"	8'-11"	--
		16	13'-3"	11'-6"	10'-5"	8'-11"	11'-7"	10'-1"	8'-11"	--	10'-6"	9'-0"	7'-10"	--
		24	11'-7"	10'-1"	8'-11"	--	10'-1"	8'-6"	--	--	8'-10" f	--	--	--
	250VS125-30	12	18'-9"	16'-4"	14'-10"	13'-0"	16'-4"	14'-4"	13'-0"	11'-4"	14'-10"	13'-0"	11'-10"	10'-4"
		16	17'-0"	14'-10"	13'-6"	11'-10"	14'-10"	13'-0"	11'-10"	10'-4"	13'-6" f	11'-10"	10'-9"	9'-3"
		24	14'-10"	13'-0"	11'-10"	10'-4"	12'-9" f	11'-4"	10'-4"	8'-10"	11'-0" f	10'-4"	9'-3"	7'-10"
	362VS125-30	12	23'-3"	20'-4"	18'-6"	16'-2"	20'-4"	17'-9"	16'-2"	14'-1"	18'-6"	16'-2"	14'-8"	12'-10"
		16	21'-2"	18'-6"	16'-10"	14'-8"	18'-6"	16'-2"	14'-8"	12'-10"	16'-4" f	14'-8"	13'-4"	11'-6"
		24	18'-6"	16'-2"	14'-8"	12'-10"	15'-4" f	14'-1"	12'-10"	11'-0"	13'-4" f	12'-10"	11'-6"	9'-11"
	400VS125-30	12	25'-2"	22'-0"	20'-0"	17'-6"	22'-0"	19'-3"	17'-6"	15'-3"	19'-5" f	17'-6"	15'-11"	13'-10"
		16	22'-11"	20'-0"	18'-2"	15'-11"	19'-5" f	17'-6"	15'-11"	13'-10"	16'-10" f	15'-11"	14'-5"	12'-7"
		24	19'-5" f	17'-6"	15'-11"	13'-10"	15'-10" f	15'-3"	13'-10"	12'-1"	13'-9" f	13'-9" f	12'-7"	10'-11"
	600VS125-30	12	31'-10" f	29'-5"	26'-9"	23'-4"	26'-0" f	25'-8"	23'-4"	20'-5"	22'-6" f	22'-7" f	21'-3"	18'-6"
		16	27'-7" f	26'-9"	24'-3"	21'-3"	22'-6" f	22'-7" f	21'-3"	18'-6"	19'-6" f	19'-6" f	19'-3"	16'-10"
		24	22'-6" f	22'-7" f	21'-3"	18'-6"	18'-5" f	18'-5" f	18'-5" f	16'-2"	15'-11" f	15'-11" f	15'-11" f	14'-8"

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Table 3 (continued) – ViperStud® Limiting Heights Established from Composite Wall Analysis

Maximum allowable wall height (feet-inches) for the transverse uniform design load indicated (psf)

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360	L/120 [5]	L/180	L/240	L/360
VIPER 33mil	162VS125-33	*12*	14'-11"	13'-0"	11'-10"	10'-4"	13'-0"	11'-4"	10'-4"	8'-10"	11'-10"	10'-4"	9'-4"	7'-11"
		16	13'-6"	11'-10"	10'-9"	9'-4"	11'-10"	10'-4"	9'-4"	7'-11"	10'-9"	9'-4"	8'-4"	--
		24	11'-10"	10'-4"	9'-4"	7'-11"	10'-4"	8'-10"	7'-11"	--	9'-4"	7'-11"	--	--
	250VS125-33	*12*	19'-4"	16'-10"	15'-4"	13'-5"	16'-10"	14'-9"	13'-5"	11'-8"	15'-4"	13'-5"	12'-2"	10'-8"
		16	17'-7"	15'-4"	13'-11"	12'-2"	15'-4"	13'-5"	12'-2"	10'-8"	13'-11"	12'-2"	11'-0"	9'-8"
		24	15'-4"	13'-5"	12'-2"	10'-8"	13'-5"	11'-8"	10'-8"	9'-2"	12'-0" f	10'-8"	9'-8"	8'-2"
	362VS125-33	*12*	23'-10"	20'-10"	18'-11"	16'-6"	20'-10"	18'-2"	16'-6"	14'-5"	18'-11"	16'-6"	15'-0"	13'-1"
		16	21'-8"	18'-11"	17'-2"	15'-0"	18'-11"	16'-6"	15'-0"	13'-1"	17'-2"	15'-0"	13'-8"	11'-10"
		24	18'-11"	16'-6"	15'-0"	13'-1"	16'-6" f	14'-5"	13'-1"	11'-4"	14'-4" f	13'-1"	11'-10"	10'-3"
	400VS125-33	*12*	25'-8"	22'-5"	20'-4"	17'-10"	22'-5"	19'-7"	17'-10"	15'-7"	20'-4"	17'-10"	16'-2"	14'-1"
		16	23'-4"	20'-4"	18'-6"	16'-2"	20'-4"	17'-10"	16'-2"	14'-1"	18'-4" f	16'-2"	14'-8"	12'-10"
		24	20'-4"	17'-10"	16'-2"	14'-1"	17'-3" f	15'-7"	14'-1"	12'-4"	15'-0" f	14'-1"	12'-10"	11'-2"
	600VS125-33	*12*	34'-5" f	30'-4"	27'-7"	24'-1"	28'-1" f	26'-7"	24'-1"	21'-1"	24'-4" f	24'-1"	21'-11"	19'-2"
		16	29'-10" f	27'-7"	25'-1"	21'-11"	24'-4" f	24'-1"	21'-11"	19'-2"	21'-1" f	21'-1" f	19'-11"	17'-5"
		24	24'-4" f	24'-1"	21'-11"	19'-2"	19'-11" f	19'-11" f	19'-2"	16'-9"	17'-2" f	17'-3" f	17'-2" f	15'-2"

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Notes for Table 3:

1. Limiting heights are based on a single layer of 5/8" thick Type X gypsum wallboard (GWB) installed full height on both faces of the wall with the panel length vertically oriented. #6 x 3/4" drywall screws shall be located 1-1/2" from all stud and track ends and are spaced as follows:

Stud Spacing	GWB Fastener Spacing in Stud	Track
12" o.c.	12" o.c.	16" o.c.
16" o.c.	12" o.c.	16" o.c.
24" o.c.	12" o.c.	12" o.c.

2. Limiting heights are governed by the lesser of the shear strength, web crippling strength, flexural strength, or the deflection limit indicated in the table.
    a. No wall heights are limited by shear or web crippling.
    b. A designation of (f) indicates that a wall height is limited by flexural strength.
    c. All remaining wall heights are limited by deflection.
3. Limiting heights based on deflection of composite wall panels are achieved by testing with successive incremental loadings applied at L/360, L/240, and L/120 deflection limits in accordance with ICC-ES AC86.
4. Wall heights that exceed 95% of the maximum allowable height and are limited by flexural strength, designated with an (f) in Table 3, shall not have a horizontal drywall joint within the middle 1/3 of the overall height.
5. For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the wall height is limited to the height at L/180 (or less) deflection (L/120 is not permitted).

Table 4 – *ViperStud*® Section Properties

Member (name)	Section ID	mil Thickness (mils)	Design Thickness (in)	Minimum Thickness (in)	Yield Stress (ksi)	Weight (lb/ft)	Gross					Effective		Moments			
							Area (in^2)	I_x (in^4)	r_x (in)	I_y (in^4)	r_y (in)	I_{xd} (in^4)	S_x (in^3)	Allowable Moment M_a (in-k)	Local Buckling Nominal Moment[1] M_{nl} (in-k)	Distortional Buckling Nominal Moment[1] M_{nd} (in-k)	Critical Unbraced Length[4] L_u (in)
Viper25	162VS125-15	15	0.0155	0.0147	50	0.242	0.071	0.0320	0.671	0.0151	0.461	0.0322	0.0258	0.713	1.42	1.20*	25.1
	250VS125-15	15	0.0155	0.0147	50	0.289	0.085	0.0844	0.998	0.0173	0.452	0.0903	0.0423	1.170	2.72	2.12*	24.8
	362VS125-15[2]	15	0.0155	0.0147	50	0.348	0.102	0.1990	1.390	0.0193	0.435	0.2050	0.0580	1.600	3.48	2.90*	24.5
	400VS125-15[2]	15	0.0155	0.0147	50	0.367	0.108	0.2500	1.520	0.0198	0.429	0.2550	0.0612	1.690	3.99	3.06*	24.4
	600VS125-15[3]	15	0.0155	0.0147	50	0.473	0.139	0.6590	2.180	0.0219	0.397	0.6280	0.0854	2.360	5.90	4.27*	23.7
Viper20	162VS125-18[2]	19	0.0190	0.0181	70	0.285	0.0839	0.0391	0.683	0.0179	0.462	0.0328	0.0285	1.99*	1.19	2.02	21.2
	250VS125-18[2]	19	0.0190	0.0181	70	0.351	0.103	0.106	1.01	0.0227	0.469	0.0942	0.0581	4.07	2.09	3.49*	21.9
	362VS125-18	19	0.0190	0.0181	70	0.423	0.124	0.249	1.42	0.0256	0.454	0.213	0.0755	5.28	3.08	5.14*	21.5
	400VS125-18	19	0.0190	0.0181	70	0.449	0.132	0.315	1.55	0.0266	0.449	0.265	0.0847	5.93	3.44	5.74*	21.5
	600VS125-21[3]	19	0.0190	0.0181	70	0.586	0.172	0.846	2.22	0.0319	0.430	0.647	0.151	10.6	5.41	9.04*	21.5
Viper 27mil	162VS125-27	27	0.0283	0.0269	33	0.417	0.123	0.0569	0.682	0.0254	0.456	0.0560	0.0586	1.160	1.93*	2.10	30.7
	250VS125-27	27	0.0283	0.0269	33	0.506	0.149	0.1510	1.010	0.0299	0.449	0.1480	0.1060	2.030	3.49	3.39*	30.2
	362VS125-27	27	0.0283	0.0269	33	0.611	0.180	0.3560	1.410	0.0335	0.432	0.3500	0.1480	2.930	4.89*	5.11	29.8
	400VS125-27	27	0.0283	0.0269	33	0.645	0.190	0.4490	1.540	0.0344	0.426	0.4410	0.1650	3.260	5.45*	5.69	29.6
	600VS125-27	27	0.0283	0.0269	33	0.838	0.246	1.1900	2.200	0.0382	0.394	1.1000	0.2900	5.150	9.65	8.59*	28.8
Viper 30mil	162VS125-30	30	0.0312	0.0296	33	0.459	0.135	0.0623	0.680	0.0279	0.455	0.0615	0.0670	1.320	2.21*	2.38	30.8
	250VS125-30	30	0.0312	0.0296	33	0.547	0.161	0.1660	1.020	0.0323	0.448	0.1630	0.1200	2.310	3.96	3.86*	30.1
	362VS125-30	30	0.0312	0.0296	33	0.669	0.197	0.3910	1.410	0.0366	0.431	0.3850	0.1720	3.390	5.67*	5.85	29.7
	400VS125-30	30	0.0312	0.0296	33	0.711	0.209	0.4930	1.540	0.0377	0.425	0.4860	0.1910	3.780	6.31*	6.52	29.6
	600VS125-30	30	0.0312	0.0296	33	0.924	0.271	1.3100	2.190	0.0418	0.392	1.2300	0.3410	5.950	11.30	9.93*	28.7
Viper 33mil	162VS125-33	33	0.0346	0.0329	33	0.500	0.147	0.0686	0.683	0.0302	0.453	0.0681	0.0773	1.530	2.55*	2.71	30.8
	250VS125-33	33	0.0346	0.0329	33	0.606	0.178	0.1830	1.010	0.0356	0.447	0.1810	0.1370	2.650	4.53	4.42*	30.1
	362VS125-33	33	0.0346	0.0329	33	0.748	0.220	0.4320	1.400	0.0404	0.429	0.4280	0.2010	3.960	6.62*	6.75	29.7
	400VS125-33	33	0.0346	0.0329	33	0.783	0.230	0.5440	1.540	0.0413	0.424	0.5390	0.2240	4.420	7.38*	7.53	29.5
	600VS125-33	33	0.0346	0.0329	33	1.023	0.301	1.4400	2.190	0.0459	0.391	1.3900	0.4000	6.930	13.20	11.6*	28.6

Notes for Table 4:

1. Section properties are in accordance with AISI S100-16.
2. Web depth-to-thickness ratio exceeds 200.
3. Web depth-to-thickness ratio exceeds 260.
4. ViperStud is considered fully braced when the unbraced length is less than listed Lu.
5. KΦ assumed to be zero for distortional buckling moments.

* Indicates the least value of either local or distortional buckling.

Table 5 – *ViperStud*® Limiting Heights Established from Fully Braced[3] Non-Composite Wall Analysis

Member (name)	Section ID XXXVS125-XX	L_u (in.)	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
				L/120[6]	L/180	L/240	L/360	L/120[6]	L/180	L/240	L/360	L/120[6]	L/180	L/240	L/360
VIPER25	162VS125-15	25.1	*12*	9'-5" f	8'-4"	7'-6"	6'-7"	7'-8" f	7'-2"	6'-7"	--	6'-7" f	6'-7"	6'-0"	--
			16	8'-1" f	7'-6"	6'-10"	6'-0"	6'-7" f	6'-7"	6'-0"	--	--	--	--	--
			24	6'-7" f	6'-7"	6'-0"	--	--	--	--	--	--	--	--	--
	250VS125-15	24.8	*12*	12'-6" f	11'-7"	10'-7"	9'-2"	10'-2" f	10'-2"	9'-2"	8'-1"	8'-10" f	8'-10" f	8'-5"	7'-4"
			16	10'-10" f	10'-7"	9'-7"	8'-5"	8'-10" f	8'-10" f	8'-5"	7'-4"	7'-8" f	7'-8" f	7'-7"	6'-8"
			24	8'-10" f	8'-10" f	8'-5"	7'-4"	7'-1" w	7'-1" w	7'-1" w	6'-5"	--	--	--	--
	362VS125-15	24.5	*12*	14'-7" f	14'-7" f	13'-11"	12'-1"	11'-11" f	11'-11" f	11'-11" f	10'-7"	10'-4" f	10'-4" f	10'-4" f	9'-7"
			16	12'-8" f	12'-8" f	12'-7"	11'-0"	10'-4" f	10'-4" f	10'-4" f	9'-7"	9'-0" f	9'-0" f	9'-0" f	8'-10"
			24	10'-4" f	10'-4" f	10'-4" f	9'-7"	8'-5" f	8'-5" f	8'-5" f	8'-5"	6'-7" w	6'-7" w	6'-7" w	6'-7" w
	400VS125-15	24.4	*12*	15'-0" f	15'-0" f	15'-0"	13'-1"	12'-4" f	12'-4" f	12'-4" f	11'-5"	10'-7" f	10'-7" f	10'-7" f	10'-5"
			16	13'-0" f	13'-0" f	13'-0" f	11'-11"	10'-7" f	10'-7" f	10'-7" f	10'-5"	9'-2" f	9'-2" f	9'-2" f	9'-2" f
			24	10'-7" f	10'-7" f	10'-7" f	10'-5"	8'-6" w	8'-6" w	8'-6" w	8'-6" w	6'-5" w	6'-5" w	6'-5" w	6'-5" w
	600VS125-15	23.7	*12*	17'-8" f	17'-8" f	17'-8" f	17'-7"	14'-1" w	14'-1" w	14'-1" w	14'-1" w	10'-7" w	10'-7" w	10'-7" w	10'-7" w
			16	15'-5" f	15'-5" f	15'-5" f	15'-5" f	10'-7" w	10'-7" w	10'-7" w	10'-7" w	7'-11" w	7'-11" w	7'-11" w	7'-11" w
			24	10'-7" w	10'-7" w	10'-7" w	10'-7" w	7'-0" w	7'-0" w	7'-0" w	7'-0" w	--	--	--	--

"f" - flexure controls; "s" – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 5 (continued) – ViperStud® Limiting Heights Established from Fully Braced[3] Non-Composite Wall Analysis

Member (name)	Section ID XXXVS125-XX	L_u (in.)	Spacing (in. o.c.)	*5 psf*			*7.5 psf*			*10 psf*		
				L/120 [6]	L/240	L/360	L/120 [6]	L/240	L/360	L/120 [6]	L/240	L/360
VIPER20	162VS125-18	21.2	*12*	9'-6 "	7'-7 "	6'-7 "	8'-4 "	6'-7 "	5'-10 "	7'-7 "	6'-0"	5'-2 "
			16	8'-7 "	6'-11 "	6'-0"	7'-7 "	6'-0"	5'-2 "	6'-11 "	5'-5 "	4'-10 "
			24	7'-7 "	6'-0"	5'-2 "	6'-7 "	5'-2 "	4'-7 "	6'-0"	4'-10 "	4'-2 "
	250VS125-18	21.9	*12*	13'-6 "	10'-8 "	9'-5 "	11'-10 "	9'-5 "	8'-2 "	10'-8 "	8'-6 "	7'-5 "
			16	12'-4 "	9'-8 "	8'-6 "	10'-8 "	8'-6 "	7'-5 "	9'-8 "	7'-8 "	6'-10 "
			24	10'-8 "	8'-6 "	7'-5 "	9'-5 "	7'-5 "	6'-6 "	8'-4 " f	6'-10 "	5'-11 "
	362VS125-18	21.5	*12*	17'-8 "	14'-1 "	12'-4 "	15'-6 "	12'-4 "	10'-8 "	14'-1 "	11'-2 "	9'-10 "
			16	16'-1 "	12'-10 "	11'-2 "	14'-1 "	11'-2 "	9'-10 "	12'-5 " f	10'-1 "	8'-11 "
			24	14'-1 "	11'-2 "	9'-10 "	11'-8 " f	9'-10 "	8'-6 "	10'-1 " f	8'-11 "	7'-8 "
	400VS125-18	21.5	*12*	19'-1 "	15'-1 "	13'-2 "	16'-8 "	13'-2 "	11'-7 "	15'-1 " f	12'-0"	10'-6 "
			16	17'-4 "	13'-10 "	12'-0"	15'-1 " f	12'-0"	10'-6 "	13'-1 " f	10'-11 "	9'-6 "
			24	15'-1 " f	12'-0"	10'-6 "	12'-5 " f	10'-6 "	9'-2 "	10'-8 " f	9'-6 "	8'-4 "
	600VS125-18	21.5	*12*	25'-8 "	20'-5 "	17'-10 "	21'-11 " f	17'-10 "	15'-7 "	19'-0" f	16'-2 "	14'-1 "
			16	23'-4 " f	18'-6 "	16'-2 "	19'0-" f	16'-2 "	14'-1 "	15'-10 " s	14'-8 "	12'-10 "
			24	19'-0" f	16'-2 "	14'-1 "	14'-0" s	14'-0" s	12'-5 "	10'-6 " s	10'-6 " s	10'-6 " s

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 5 (continued) – ViperStud® Limiting Heights Established from Fully Braced[3] Non-Composite Wall Analysis

Member (name)	Section ID XXXVS125-XX	L_u (in.)	Spacing (in. o.c.)	5 psf				7.5 psf				10 psf			
				L/120[6]	L/180	L/240	L/360	L/120[6]	L/180	L/240	L/360	L/120[6]	L/180	L/240	L/360
VIPER 27mil	162VS125-27	31.2	12	11'-5"	9'-11"	9'-0"	7'-11"	9'-11"	8'-8"	7'-11"	6'-11"	8'-10" f	7'-11"	7'-2"	6'-4"
			16	10'-4"	9'-0"	8'-2"	7'-2"	8'-10" f	7'-11"	7'-2"	6'-4"	7'-7" f	7'-2"	6'-6"	--
			24	8'-10" f	7'-11"	7'-2"	6'-4"	7'-2" f	6'-11"	6'-4"	--	6'-2" f	6'-2" f	--	--
	250VS125-27	30.2	12	15'-8"	13'-8"	12'-6"	10'-11"	13'-5" f	12'-0"	10'-11"	9'-6"	11'-7" f	10'-11"	9'-11"	8'-7"
			16	14'-2" f	12'-6"	11'-4"	9'-11"	11'-7" f	10'-11"	9'-11"	8'-7"	10'-1" f	9'-11"	9'-0"	7'-11"
			24	11'-7" f	10'-11"	9'-11"	8'-7"	9'-6" f	9'-6" f	8'-7"	7'-7"	8'-2" f	8'-2" f	7'-11"	6'-11"
	362VS125-27	29.8	12	19'-10" f	18'-4"	16'-7"	14'-6"	16'-1" f	16'-0"	14'-6"	12'-8"	14'-0" f	14'-0" f	13'-2"	11'-6"
			16	17'-1" f	16'-7"	15'-1"	13'-2"	14'-0" f	14'-0" f	13'-2"	11'-6"	12'-1" f	12'-1" f	12'-0"	10'-6"
			24	14'-0" f	14'-0" f	13'-2"	11'-6"	11'-5" f	11'-5" f	11'-5" f	10'-1"	9'-11" f	9'-11" f	9'-11" f	9'-1"
	400VS125-27	29.6	12	20'-11" f	19'-8"	17'-11"	15'-8"	17'-0" f	17'-0" f	15'-8"	13'-8"	14'-8" f	14'-8" f	14'-2"	12'-5"
			16	18'-1" f	17'-11"	16'-4"	14'-2"	14'-8" f	14'-8" f	14'-2"	12'-5"	12'-10" f	12'-10" f	12'-10" f	11'-4"
			24	14'-8" f	14'-8" f	14'-2"	12'-5"	12'-0" f	12'-0" f	12'-0" f	10'-11"	10'-5" f	10'-5" f	10'-5" f	9'-11"
	600VS125-27	28.8	12	26'-2" f	26'-2" f	24'-5"	21'-4"	21'-5" f	21'-5" f	21'-4"	18'-7"	18'-6" f	18'-6" f	18'-6" f	16'-11"
			16	22'-8" f	22'-8" f	22'-1"	19'-4"	18'-6" f	18'-6" f	18'-6" f	16'-11"	15'-4" w	15'-4" w	15'-4" w	15'-4" w
			24	18'-6" f	18'-6" f	18'-6" f	16'-11"	13'-7" w	13'-7" w	13'-7" w	13'-7" w	10'-2" w	10'-2" w	10'-2" w	10'-2" w

"f" - flexure controls; "s" – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 5 (continued) – ViperStud® Limiting Heights Established from Fully Braced[3] Non-Composite Wall Analysis

Member (name)	Section ID XXXVS125-XX	L_u (in.)	Spacing (in. o.c.)	5 psf				7.5 psf				10 psf			
				L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER 30mil	162VS125-30	31.3	12	11'-8"	10'-2"	9'-4"	8'-1"	10'-2"	8'-11"	8'-1"	7'-1"	9'-4"	8'-1"	7'-5"	6'-6"
			16	10'-8"	9'-4"	8'-6"	7'-5"	9'-4"	8'-1"	7'-5"	6'-6"	8'-1" f	7'-5"	6'-8"	--
			24	9'-4"	8'-1"	7'-5"	6'-6"	7'-8" f	7'-1"	6'-6"	--	6'-7" f	6'-6"	--	--
	250VS125-30	30.1	12	16'-2"	14'-2"	12'-11"	11'-4"	14'-2"	12'-5"	11'-4"	9'-10"	12'-5" f	11'-4"	10'-2"	8'-11"
			16	14'-8"	12'-11"	11'-8"	10'-2"	12'-5" f	11'-4"	10'-2"	8'-11"	10'-8" f	10'-2"	9'-4"	8'-1"
			24	12'-5" f	11'-4"	10'-2"	8'-11"	10'-1" f	9'-10"	8'-11"	7'-10"	8'-10" f	8'-10" f	8'-1"	7'-1"
	362VS125-30	29.7	12	21'-4" f	18'-11"	17'-2"	15'-0"	17'-5" f	16'-6"	15'-0"	13'-1"	15'-0" f	15'-0"	13'-7"	11'-11"
			16	18'-5" f	17'-2"	15'-7"	13'-7"	15'-0" f	15'-0"	13'-7"	11'-11"	13'-0" f	13'-0" f	12'-5"	10'-10"
			24	15'-0" f	15'-0"	13'-7"	11'-11"	12'-4" f	12'-4" f	11'-11"	10'-5"	10'-7" f	10'-7" f	10'-7" f	9'-5"
	400VS125-30	29.6	12	22'-6" f	20'-5"	18'-6"	16'-2"	18'-4" f	17'-10"	16'-2"	14'-1"	15'-11" f	15'-11" f	14'-8"	12'-11"
			16	19'-5" f	18'-6"	16'-10"	14'-8"	15'-11" f	15'-11" f	14'-8"	12'-11"	13'-8" f	13'-8" f	13'-5"	11'-8"
			24	15'-11" f	15'-11" f	14'-8"	12'-11"	13'-0" f	13'-0" f	12'-11"	11'-2"	11'-2" f	11'-2" f	11'-2" f	10'-2"
	600VS125-30	28.7	12	28'-2" f	27'-10"	25'-4"	22'-1"	23'-0" f	23'-0" f	22'-1"	19'-4"	19'-11" f	19'-11" f	19'-11" f	17'-6"
			16	24'-5" f	24'-5" f	23'-0"	20'-1"	19'-11" f	19'-11" f	19'-11" f	17'-6"	17'-2" f	17'-2" f	17'-2" f	15'-11"
			24	19'-11" f	19'-11" f	19'-11" f	17'-6"	16'-4" f	16'-4" f	16'-4" f	15'-4"	12'-5" w	12'-5" w	12'-5" w	12'-5" w

"f" - flexure controls; "s" – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 5 (continued) – ViperStud® Limiting Heights Established from Fully Braced[3] Non-Composite Wall Analysis

Member (name)	Section ID XXXVS125-XX	L_u (in.)	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
				L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER 33mil	162VS125-33	31.3	*12*	12'-1"	10'-7"	9'-7"	8'-5"	10'-7"	9'-4"	8'-5"	7'-4"	9'-7"	8'-5"	7'-7"	6'-8"
			16	11'-0"	9'-7"	8'-8"	7'-7"	9'-7"	8'-5"	7'-7"	6'-8"	8'-8" f	7'-7"	6'-11"	6'-1"
			24	9'-7"	8'-5"	7'-7"	6'-8"	8'-2" f	7'-4"	6'-8"	--	7'-1" f	6'-8"	6'-1"	--
	250VS125-33	30.1	*12*	16'-10"	14'-8"	13'-4"	11'-7"	14'-8"	12'-10"	11'-7"	10'-2"	13'-4" f	11'-7"	10'-7"	9'-2"
			16	15'-4"	13'-4"	12'-1"	10'-7"	13'-4" f	11'-7"	10'-7"	9'-2"	11'-6" f	10'-7"	9'-7"	8'-5"
			24	13'-4" f	11'-7"	10'-7"	9'-2"	10'-10" f	10'-2"	9'-2"	8'-1"	9'-5" f	9'-2"	8'-5"	7'-4"
	362VS125-33	29.7	*12*	22'-5"	19'-7"	17'-10"	15'-6"	18'-10" f	17'-1"	15'-6"	13'-7"	16'-4" f	15'-6"	14'-1"	12'-4"
			16	19'-11" f	17'-10"	16'-1"	14'-1"	16'-4" f	15'-6"	14'-1"	12'-4"	14'-1" f	14'-1" f	12'-10"	11'-2"
			24	16'-4" f	15'-6"	14'-1"	12'-4"	13'-4" f	13'-4" f	12'-4"	10'-10"	11'-6" f	11'-6" f	11'-2"	9'-10"
	400VS125-33	29.5	*12*	24'-2"	21'-1"	19'-2"	16'-10"	19'-10" f	18'-6"	16'-10"	14'-7"	17'-2" f	16'-10"	15'-2"	13'-4"
			16	21'-0" f	19'-2"	17'-5"	15'-2"	17'-2" f	16'-10"	15'-2"	13'-4"	14'-11" f	14'-11" f	13'-10"	12'-1"
			24	17'-2" f	16'-10"	15'-2"	13'-4"	14'-0" f	14'-0" f	13'-4"	11'-7"	12'-1" f	12'-1" f	12'-1"	10'-7"
	600VS125-33	28.6	*12*	30'-5" f	28'-11"	26'-4"	23'-0"	24'-10" f	24'-10" f	23'-0"	20'-1"	21'-6" f	21'-6" f	20'-11"	18'-2"
			16	26'-4" f	26'-4"	23'-11"	20'-11"	21'-6" f	21'-6" f	20'-11"	18'-2"	18'-7" f	18'-7" f	18'-7" f	16'-7"
			24	21'-6" f	21'-6" f	20'-11"	18'-2"	17'-6" f	17'-6" f	17'-6" f	15'-11"	15'-2" f	15'-2" f	15'-2" f	14'-6"

"f" - flexure controls; "s" – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Notes for Table 5:

1. Limiting heights are in accordance with AISI S100 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 than Lu. See section properties table for Lu values.
4. For web crippling, when h/t ≤ 200, the web crippling values are computed in accordance with AISI S100. When h/t > 200, the web crippling values are based on tested with a bearing length of 1".
5. No web stiffeners are required for limiting heights reported in the table.
6. For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the wall height is limited to the height at the L/180 deflection level (L/120 is not permitted).

Table 6 – *ViperStud*® Limiting Heights Established from an Analysis of Non-Composite Walls Braced 4 ft o.c.

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER25	162VS125-15	*12*	8'-8" f	8'-4"	7'-6"	6'-7"	7'-1" f	7'-1" f	6'-7"	--	6'-1" f	6'-1" f	6'-0"	--
		16	7'-6" f	7'-6" f	6'-10"	6'-0"	6'-1" f	6'-1" f	6'-0"	--	--	--	--	--
		24	6'-1" f	6'-1" f	6'-0"	--	--	--	--	--	--	--	--	--
	250VS125-15	*12*	11'-10" f	11'-7"	10'-7"	9'-2"	9'-7" f	9'-7" f	9'-2"	8'-1"	8'-5" f	8'-5" f	8'-5" f	7'-4"
		16	10'-2" f	10'-2" f	9'-7"	8'-5"	8'-5" f	8'-5" f	8'-5" f	7'-4"	7'-2" f	7'-2" f	7'-2" f	6'-8"
		24	8'-5" f	8'-5" f	8'-5" f	7'-4"	6'-8" w	6'-8" w	6'-8" w	6'-5"	--	--	--	--
	362VS125-15	*12*	13'-2" f	13'-2" f	13'-2" f	12'-1"	10'-10" f	10'-10" f	10'-10" f	10'-7"	9'-4" f	9'-4" f	9'-4" f	9'-4" f
		16	11'-5" f	11'-5" f	11'-5" f	11'-0"	9'-4" f	9'-4" f	9'-4" f	9'-4" f	7'-10" w	7'-10" w	7'-10" w	7'-10" w
		24	9'-4" f	9'-4" f	9'-4" f	9'-4" f	6'-11" w	6'-11" w	6'-11" w	6'-11" w	--	--	--	--
	400VS125-15	*12*	13'-10" f	13'-10" f	13'-10" f	13'-1"	11'-4" f	11'-4" f	11'-4" f	11'-4" f	9'-10" f	9'-10" f	9'-10" f	9'-10" f
		16	12'-0" f	12'-0" f	12'-0" f	11'-11"	9'-10" f	9'-10" f	9'-10" f	9'-10" f	7'-5" w	7'-5" w	7'-5" w	7'-5" w
		24	9'-10" f	9'-10" f	9'-10" f	9'-10" f	6'-6" w	6'-6" w	6'-6" w	6'-6" w	--	--	--	--
	600VS125-15	*12*	14'-1" w	14'-1" w	14'-1" w	14'-1" w	9'-5" w	9'-5" w	9'-5" w	9'-5" w	7'-1" w	7'-1" w	7'-1" w	7'-1" w
		16	10'-7" w	10'-7" w	10'-7" w	10'-7" w	7'-1" w	7'-1" w	7'-1" w	7'-1" w	--	--	--	--
		24	7'-1" w	7'-1" w	7'-1" w	7'-1" w	--	--	--	--	--	--	--	--

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 6 (continued) – ViperStud® Limiting Heights Established from an Analysis of Non-Composite Walls Braced 4 ft o.c.

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	5 psf			7.5 psf			10 psf		
			L/120 [6]	L/240	L/360	L/120 [6]	L/240	L/360	L/120 [6]	L/240	L/360
VIPER20	162VS125-18	12	9'-6 "	7'-7 "	6'-7 "	8'-4 "	6'-7 "	5'-10 "	7'-5 " f	6'-"	5'-2 "
		16	8'-7 "	6'-11 "	6'-0"	7'-5 " f	6'-0"	5'-2 "	6'-5 " f	5'-5 "	4'-10 "
		24	7'-5 " f	6'-0"	5'-2 "	6'-" f	5'-2 "	4'-7 "	5'-2 " f	4'-10 "	4'-2 "
	250VS125-18	12	13'-6 "	10'-8 "	9'-5 "	11'-10 "	9'-5 "	8'-2 "	10'-8 "	8'-6 "	7'-5 "
		16	12'-4 "	9'-8 "	8'-6 "	10'-8 "	8'-6 "	7'-5 "	9'-4 " f	7'-8 "	6'-10 "
		24	10'-8 "	8'-6 "	7'-5 "	8'-10 " f	7'-5 "	6'-6 "	7'-7 " f	6'-10 "	5'-11 "
	362VS125-18	12	17'-1 " f	14'-1 "	12'-4 "	14'-" f	12'-4 "	10'-8 "	12'-1 " f	11'-2 "	9'-10 "
		16	14'-10 " f	12'-10 "	11'-2 "	12'-1 " f	11'-2 "	9'-10 "	10'-6 " f	10'-1 "	8'-11 "
		24	12'-1 " f	11'-2 "	9'-10 "	9'-11 " f	9'-10 "	8'-6 " f	8'-7 " f	8'-7 " f	7'-8 "
	400VS125-18	12	18'-1 " f	15'-1 "	13'-2 "	14'-10 " f	13'-2 "	11'-7 "	12'-10 " f	12'-"	10'-6 "
		16	15'-8 " f	13'-10 "	12'-0"	12'-10 " f	12'-0"	10'-6 "	11'-1 " f	10'-11 "	9'-6 "
		24	12'-10 " f	12'-"	10'-6 "	10'-6 " f	10'-6 " f	9'-2 "	9'-1 " f	9'-1 " f	8'-4 "
	600VS125-18	12	23'-10 " f	20'-5 "	17'-10 "	19'-6 " f	17'-0"	15'-7 "	16'-10 " f	16'-2 "	14'-1 "
		16	20'-7 " f	18'-6 "	16'-2 "	16'-10 " f	16'-2 "	14'-1 "	14'-7 " f	14'-7 " f	12'-10 "
		24	16'-10 " f	16'-2 "	14'-1 "	13'-10 " f	13'-10 " f	12'-5 "	10'-6 " s	10'-6 " s	10'-6 " s

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 6 (continued) – ViperStud® Limiting Heights Established from an Analysis of Non-Composite Walls Braced 4 ft o.c.

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER 27mil	162VS125-27	*12*	11'-5"	9'-11"	9'-0"	7'-11"	9'-7" f	8'-8"	7'-11"	6'-11"	8'-4" f	7'-11"	7'-2"	6'-4"
		16	10'-2" f	9'-0"	8'-2"	7'-2"	8'-4" f	7'-11"	7'-2"	6'-4"	7'-2" f	7'-2"	6'-6"	--
		24	8'-4" f	7'-11"	7'-2"	6'-4"	6'-10" f	6'-10" f	6'-4"	5'-6"	--	--	--	--
	250VS125-27	*12*	15'-7" f	13'-10"	12'-6"	10'-11"	12'-10" f	12'-0"	10'-11"	9'-6"	11'-0" f	10'-11"	9'-11"	8'-8"
		16	13'-6" f	12'-6"	11'-5"	9'-11"	11'-0" f	10'-11"	9'-11"	8'-8"	9'-7" f	9'-7" f	9'-0"	7'-11"
		24	11'-0" f	10'-11"	9'-11"	8'-8"	9'-0" f	9'-0" f	8'-8"	7'-7"	7'-10" f	7'-10" f	7'-10" f	6'-11"
	362VS125-27	*12*	18'-7" f	18'-4"	16'-8"	14'-7"	15'-2" f	15'-2" f	14'-7"	12'-8"	13'-2" f	13'-2" f	13'-2" f	11'-6"
		16	16'-1" f	16'-1" f	15'-1"	13'-2"	13'-2" f	13'-2" f	13'-2" f	11'-6"	11'-5" f	11'-5" f	11'-5" f	10'-6"
		24	13'-2" f	13'-2" f	13'-2" f	11'-6"	10'-8" f	10'-8" f	10'-8" f	10'-1"	9'-4" f	9'-4" f	9'-4" f	9'-2"
	400VS125-27	*12*	19'-7" f	19'-7" f	18'-0"	15'-8"	16'-0" f	16'-0" f	15'-8"	13'-8"	13'-11" f	13'-11" f	13'-11" f	12'-6"
		16	17'-0" f	17'-0" f	16'-4"	14'-4"	13'-11" f	13'-11" f	13'-11" f	12'-6"	12'-0" f	12'-0" f	12'-0" f	11'-4"
		24	13'-11" f	13'-11" f	13'-11" f	12'-6"	11'-4" f	11'-4" f	11'-4" f	10'-11"	9'-10" f	9'-10" f	9'-10" f	9'-10" f
	600VS125-27	*12*	25'-11" f	25'-11" f	24'-7"	21'-6"	21'-2" f	21'-2" f	21'-2" f	18'-8"	18'-4" f	18'-4" f	18'-4" f	17'-0"
		16	22'-6" f	22'-6" f	22'-4"	19'-6"	18'-4" f	18'-4" f	18'-4" f	17'-0"	14'-5" w	14'-5" w	14'-5" w	14'-5" w
		24	18'-4" f	18'-4" f	18'-4" f	17'-0"	12'-10" w	12'-10" w	12'-10" w	12'-10" w	9'-7" w	9'-7" w	9'-7" w	9'-7" w

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 6 (continued) – ViperStud® Limiting Heights Established from an Analysis of Non-Composite Walls Braced 4 ft o.c.

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER 30mil	162VS125-30	*12*	11'-10"	10'-4"	9'-4"	8'-2"	10'-4"	9'-0"	8'-2"	7'-1"	8'-11" f	8'-2"	7'-5"	6'-6"
		16	10'-8"	9'-4"	8'-6"	7'-5"	8'-11" f	8'-2"	7'-5"	6'-6"	7'-8" f	7'-5"	6'-8"	--
		24	8'-11" f	8'-2"	7'-5"	6'-6"	7'-4" f	7'-1"	6'-6"	--	6'-4" f	6'-4" f	--	--
	250VS125-30	*12*	16'-4"	14'-2"	12'-11"	11'-4"	13'-7" f	12'-5"	11'-4"	9'-11"	11'-10" f	11'-4"	10'-4"	9'-0"
		16	14'-5" f	12'-11"	11'-8"	10'-4"	11'-10" f	11'-4"	10'-4"	9'-0"	10'-2" f	10'-2" f	9'-4"	8'-1"
		24	11'-10" f	11'-4"	10'-4"	9'-0"	9'-7" f	9'-7" f	9'-0"	7'-10"	8'-4" f	8'-4" f	8'-1"	7'-1"
	362VS125-30	*12*	20'-0" f	19'-0"	17'-2"	15'-0"	16'-4" f	16'-4" f	15'-0"	13'-1"	14'-2" f	14'-2" f	13'-8"	11'-11"
		16	17'-4" f	17'-2"	15'-7"	13'-8"	14'-2" f	14'-2" f	13'-8"	11'-11"	12'-4" f	12'-4" f	12'-4" f	10'-10"
		24	14'-2" f	14'-2" f	13'-8"	11'-11"	11'-7" f	11'-7" f	11'-7" f	10'-5"	10'-0" f	10'-0" f	10'-0" f	9'-6"
	400VS125-30	*12*	21'-1" f	20'-6"	18'-7"	16'-4"	17'-2" f	17'-2" f	16'-4"	14'-2"	14'-11" f	14'-11" f	14'-10"	12'-11"
		16	18'-4" f	18'-4" f	16'-11"	14'-10"	14'-11" f	14'-11" f	14'-10"	12'-11"	12'-11" f	12'-11" f	12'-11" f	11'-8"
		24	14'-11" f	14'-11" f	14'-10"	12'-11"	12'-2" f	12'-2" f	12'-2" f	11'-4"	10'-7" f	10'-7" f	10'-7" f	10'-2"
	600VS125-30	*12*	28'-0" f	28'-0" f	25'-6"	22'-4"	22'-10" f	22'-10" f	22'-4"	19'-6"	19'-10" f	19'-10" f	19'-10" f	17'-8"
		16	24'-2" f	24'-2" f	23'-2"	20'-2"	19'-10" f	19'-10" f	19'-10" f	17'-8"	17'-1" f	17'-1" f	17'-1" f	16'-1"
		24	19'-10" f	19'-10" f	19'-10" f	17'-8"	15'-7" w	15'-7" w	15'-7" w	15'-6"	11'-8" w	11'-8" w	11'-8" w	11'-8" w

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Table 6 (continued) – ViperStud® Limiting Heights Established from an Analysis of Non-Composite Walls Braced 4 ft o.c.

Member (name)	Section ID XXXVS125-XX	Spacing (in. o.c.)	*5 psf*				*7.5 psf*				*10 psf*			
			L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360	L/120 [6]	L/180	L/240	L/360
VIPER 33mil	162VS125-33	*12*	12'-2"	10'-7"	9'-8"	8'-5"	10'-7"	9'-4"	8'-5"	7'-5"	9'-6" f	8'-5"	7'-8"	6'-8"
		16	11'-1"	9'-8"	8'-10"	7'-8"	9'-6" f	8'-5"	7'-8"	6'-8"	8'-2" f	7'-8"	7'-0"	6'-1"
		24	9'-6" f	8'-5"	7'-8"	6'-8"	7'-8" f	7'-5"	6'-8"	--	6'-8" f	6'-8"	6'-1"	--
	250VS125-33	*12*	16'-11"	14'-8"	13'-5"	11'-8"	14'-5" f	12'-11"	11'-8"	10'-2"	12'-6" f	11'-8"	10'-7"	9'-4"
		16	15'-4" f	13'-5"	12'-2"	10'-7"	12'-6" f	11'-8"	10'-7"	9'-4"	10'-10" f	10'-7"	9'-7"	8'-5"
		24	12'-6" f	11'-8"	10'-7"	9'-4"	10'-2" f	10'-2" f	9'-4"	8'-1"	8'-10" f	8'-10" f	8'-5"	7'-5"
	362VS125-33	*12*	21'-4" f	19'-7"	17'-10"	15'-7"	17'-5" f	17'-1"	15'-7"	13'-7"	15'-1" f	15'-1" f	14'-1"	12'-5"
		16	18'-5" f	17'-10"	16'-2"	14'-1"	15'-1" f	15'-1" f	14'-1"	12'-5"	13'-0" f	13'-0" f	12'-11"	11'-2"
		24	15'-1" f	15'-1" f	14'-1"	12'-5"	12'-4" f	12'-4" f	12'-4" f	10'-10"	10'-8" f	10'-8" f	10'-8" f	9'-10"
	400VS125-33	*12*	22'-6" f	21'-2"	19'-4"	16'-10"	18'-4" f	18'-4" f	16'-10"	14'-8"	15'-11" f	15'-11" f	15'-4"	13'-4"
		16	19'-5" f	19'-4"	17'-6"	15'-4"	15'-11" f	15'-11" f	15'-4"	13'-4"	13'-10" f	13'-10" f	13'-10" f	12'-1"
		24	15'-11" f	15'-11" f	15'-4"	13'-4"	13'-0" f	13'-0" f	13'-0" f	11'-8"	11'-2" f	11'-2" f	11'-2" f	10'-7"
	600VS125-33	*12*	29'-10" f	29'-2"	26'-6"	23'-1"	24'-4" f	24'-4" f	23'-1"	20'-2"	21'-1" f	21'-1" f	21'-0"	18'-5"
		16	25'-10" f	25'-10" f	24'-1"	21'-0"	21'-1" f	21'-1" f	21'-0"	18'-5"	18'-4" f	18'-4" f	18'-4" f	16'-8"
		24	21'-1" f	21'-1" f	21'-0"	18'-5"	17'-2" f	17'-2" f	17'-2" f	16'-0"	14'-6" w	14'-6" w	14'-6" w	14'-6" w

"f" - flexure controls; “s” – shear controls, "w" - web crippling controls; no letter next to number means deflection controls

Notes for Table 6:

1. Limiting heights are in accordance with AISI S100 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 AISI S100-16, with max discrete bracing of 48" o.c.
4. For web crippling, when h/t ≤ 200, the web crippling values are computed in accordance with AISI S100. When h/t > 200, the web crippling values are based on tests with a bearing length of 1".
5. No web stiffeners are required for limiting heights reported in the table.
6. For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the wall height is limited to the height at L/180 (or less) deflection (L/120 is not permitted).

Table 7 – *ViperStud*® Allowable Ceiling Spans

L/240			4 psf Lateral Support of Compression Flange						6 psf Lateral Support of Compression Flange					
			Unsupported [5] Joist Spacing (in) o.c.			Midspan [5] Joist Spacing (in) o.c.			Unsupported [5] Joist Spacing (in) o.c.			Midspan [5] Joist Spacing (in) o.c.		
Member Name	Designation XXXVS125-XX	F_y (ksi)	12	16	24	12	16	24	12	16	24	12	16	24
VIPER25	162VS125-15	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"
	250VS125-15	50	8'-2" f	7'-7" f	6'-10" f	11'-3" f	10'-4"	9'-0" f	7'-4" f	6'-10" f	6'-2" f	10'-0"	9'-0" f	7'-8" f
	362VS125-15	50	9'-1" f	8'-6" f	7'-8" f	12'-0" f	11'-0" f	9'-9" f	8'-3" f	7'-8" f	6'-11" f	10'-8" f	9'-9" f	8'-5" f
	400VS125-15	50	9'-5" f	8'-9" f	7'-10" f	12'-5" f	11'-4" f	10'-0" f	8'-6" f	7'-10" f	7'-1" f	11'-0" f	10'-0" f	8'-9" f
	600VS125-15	50	10'-8" f	9'-11" f	8'-11" f	14'-4" f	13'-2" f	11'-8" f	9'-7" f	8'-11" f	8'-1" f	12'-9" f	11'-8" f	8'-10" w
VIPER20	162VS125-18	70	7' 9" f	7' 3" f	6' 6" f	8' 5"	7' 7"	6' 7"	7' 0" f	6' 6" f	5' 10" f	7' 3"	6' 7"	5' 8"
	250VS125-18	70	8' 9" f	8' 1" f	7' 4" f	12' 0"	10' 10"	9' 5"	7' 11" f	7' 4" f	6' 7" f	10' 5"	9' 5"	8' 2"
	362VS125-18	70	9' 7" f	8' 11" f	8' 0" f	13' 6" f	12' 6" f	11' 1" f	8' 8" f	8' 0" f	7' 3" f	12' 1" f	11' 1" f	9' 10" f
	400VS125-18	70	9' 10" f	9' 2" f	8' 3" f	13' 10" f	12' 9" f	11' 5" f	9' 10" f	9' 2" f	8' 3" f	12' 4" f	11' 5" f	10' 2" f
	600VS125-18	70	11' 2" f	10' 4" f	9' 4" f	15' 10" f	14' 8" f	13' 1" f	10' 1" f	9' 4" f	8' 5" f	14' 2" f	13' 1" f	11' 8" f
VIPER 27mil	162VS125-27	33	8'-11" f	8'-3" f	7'-4" f	9'-9"	8'-10"	7'-9"	8'-0" f	7'-4" f	6'-7" f	8'-6"	7'-9"	6'-9"
	250VS125-27	33	10'-0" f	9'-2" f	8'-3" f	13'-6"	12'-3"	10'-9"	8'-11" f	8'-3" f	7'-5" f	11'-10"	10'-9"	9'-4"
	362VS125-27	33	11'-0" f	10'-2" f	9'-2" f	15'-6" f	14'-4" f	12'-9" f	9'-10" f	9'-2" f	8'-3" f	13'-10" f	12'-9" f	11'-4" f
	400VS125-27	33	11'-4" f	10'-6" f	9'-5" f	15'-11" f	14'-9" f	13'-1" f	10'-2" f	9'-5" f	8'-6" f	14'-3" f	13'-1" f	11'-8" f
	600VS125-27	33	12'-9" f	11'-10" f	10'-8" f	18'-4" f	16'-11" f	15'-2" f	11'-6" f	10'-8" f	9'-7" f	16'-5" f	15'-2" f	13'-7" f
VIPER 30mil	162VS125-30	33	9'-4" f	8'-7" f	7'-8" f	10'-1"	9'-2"	8'-0"	8'-4" f	7'-8" f	6'-10" f	8'-10"	8'-0"	7'-0"
	250VS125-30	33	10'-4" f	9'-6" f	8'-6" f	13'-11"	12'-8"	11'-1"	9'-2" f	8'-6" f	7'-7" f	12'-2"	11'-1"	9'-8"
	362VS125-30	33	11'-4" f	10'-6" f	9'-5" f	16'-0" f	14'-10" f	13'-3" f	10'-2" f	9'-5" f	8'-6" f	14'-4" f	13'-3" f	11'-9" f
	400VS125-30	33	11'-8" f	10'-10" f	9'-8" f	16'-5" f	15'-2" f	13'-7" f	10'-6" f	9'-8" f	8'-9" f	14'-9" f	13'-7" f	12'-1" f
	600VS125-30	33	13'-1" f	12'-2" f	10'-11" f	18'-10" f	17'-6" f	15'-8" f	11'-9" f	10'-11" f	9'-10" f	16'-11" f	15'-8" f	14'-1" f
VIPER 33mil	162VS125-33	33	9'-9" f	8'-11" f	7'-11" f	10'-5"	9'-5"	8'-3"	8'-8" f	7'-11" f	7'-1" f	9'-1"	8'-3"	7'-3"
	250VS125-33	33	10'-9" f	9'-10" f	8'-10" f	14'-5"	13'-1"	11'-5"	9'-7" f	8'-10" f	7'-11" f	12'-7"	11'-5"	10'-0"
	362VS125-33	33	11'-9" f	10'-11" f	9'-9" f	16'-7" f	15'-4" f	13'-9" f	10'-7" f	9'-9" f	8'-9" f	14'-10" f	13'-9" f	12'-2" f
	400VS125-33	33	12'-1" f	11'-2" f	10'-0" f	17'-0" f	15'-8" f	14'-1" f	10'-10" f	10'-0" f	9'-0" f	15'-3" f	14'-1" f	12'-7" f
	600VS125-33	33	13'-6" f	12'-6" f	11'-3" f	19'-5" f	18'-0" f	16'-3" f	12'-2" f	11'-3" f	10'-1" f	17'-6" f	16'-3" f	14'-6" f

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Table 7 (continued) – ViperStud® Allowable Ceiling Spans

L/360			4 psf Lateral Support (Bracing) of Compression Flange						6 psf Lateral Support (Bracing) of Compression Flange					
			Unsupported [5] Joist Spacing (in) o.c.			Midspan [5] Joist Spacing (in) o.c.			Unsupported [5] Joist Spacing (in) o.c.			Midspan [5] Joist Spacing (in) o.c.		
Member Name	Designation XXXVS125-XX	F_y (ksi)	12	16	24	12	16	24	12	16	24	12	16	24
VIPER25	162VS125-15	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"
	250VS125-15	50	8'-2" f	7'-7" f	6'-10" f	10'-0"	9'-0"	7'-11"	7'-4" f	6'-10" f	6'-2" f	8'-8"	7'-11"	6'-11"
	362VS125-15	50	9'-1" f	8'-6" f	7'-8" f	12'-0" f	11'-0" f	9'-9" f	8'-3" f	7'-8" f	6'-11" f	10'-7" f	9'-9" f	8'-5" f
	400VS125-15	50	9'-5" f	8'-9" f	7'-10" f	12'-5" f	11'-4" f	10'-0" f	8'-6" f	7'-10" f	7'-1" f	11'-0" f	10'-0" f	8'-9" f
	600VS125-15	50	10'-8" f	9'-11" f	8'-11" f	14'-4" f	13'-2" f	11'-8" f	9'-7" f	8'-11" f	8'-1" f	12'-9" f	11'-8" f	8'-10" w
VIPER20	162VS125-18	70	7' 6"	6' 10"	5' 11"	7' 4"	6' 8"	5' 9"	6' 6" f	5' 11"	5' 2"	6' 4"	5' 9"	5' 0"
	250VS125-18	70	8' 9" f	8' 1" f	7' 4" f	10' 5"	9' 6"	8' 3"	7' 11" F	7' 4" f	6' 7" f	9' 1"	8' 3"	7' 2"
	362VS125-18	70	9' 7" f	8' 11" f	8' 0" f	13' 6" f	12' 6" f	11' 0"	8' 8" f	8' 0" f	7' 3" f	12' 1" f	11' 0"	9' 7"
	400VS125-18	70	9' 10" f	9' 2" f	8' 3" f	13' 10" f	12' 9" f	11' 5" f	8' 11" f	8' 3" f	7' 5" f	12' 4" f	11' 5" f	10' 2" f
	600VS125-18	70	11' 2" f	10' 4" f	9' 4" f	15' 10" f	14' 8" f	13' 1" f	10' 1" f	9' 4" f	8' 5" f	14' 2" f	13' 1" f	11' 8" f
VIPER 27mil	162VS125-27	33	8'-6"	7'-9"	6'-9"	8'-6"	7'-9"	6'-9"	7'-6"	6'-9"	5'-11"	7'-5"	6'-9"	5'-11"
	250VS125-27	33	10'-0" f	9'-2" f	8'-3" f	11'-10"	10'-9"	9'-4"	8'-11" f	8'-3" f	7'-5" f	10'-4"	9'-4"	8'-2"
	362VS125-27	33	11'-0" f	10'-2" f	9'-2" f	15'-6" f	14'-4"	12'-6"	9'-10" f	9'-2" f	8'-3" f	13'-9"	12'-6"	10'-11"
	400VS125-27	33	11'-4" f	10'-6" f	9'-5" f	15'-11" f	14'-9" f	13'-1" f	10'-2" f	9'-5" f	8'-6" f	14'-3" f	13'-1" f	11'-8" f
	600VS125-27	33	12'-9" f	11'-10" f	10'-8" f	18'-4" f	16'-11" f	15'-2" f	11'-6" f	10'-8" f	9'-7" f	16'-5" f	15'-2" f	13'-7" f
VIPER 30mil	162VS125-30	33	8'-10"	8'-0"	7'-0"	8'-10"	8'-0"	7'-0"	7'-8"	7'-0"	6'-1"	7'-8"	7'-0"	6'-1"
	250VS125-30	33	10'-4" f	9'-6" f	8'-6" f	12'-2"	11'-1"	9'-8"	9'-2" f	8'-6" f	7'-7" f	10'-8"	9'-8"	8'-5"
	362VS125-30	33	11'-4" f	10'-6" f	9'-5" f	16'-0" f	14'-9"	12'-11"	10'-2" f	9'-5" f	8'-6" f	14'-2"	12'-11"	11'-3"
	400VS125-30	33	11'-8" f	10'-10" f	9'-8" f	16'-5" f	15'-2" f	13'-7" f	10'-6" f	9'-8" f	8'-9" f	14'-9" f	13'-7" f	12'-1" f
	600VS125-30	33	13'-1" f	12'-2" f	10'-11" f	18'-10" f	17'-6" f	15'-8" f	11'-9" f	10'-11" f	9'-10" f	16'-11" f	15'-8" f	14'-1" f
VIPER 33mil	162VS125-33	33	9'-1"	8'-3"	7'-3"	9'-1"	8'-3"	7'-3"	7'-11"	7'-3"	6'-4"	7'-11"	7'-3"	6'-4"
	250VS125-33	33	10'-9" f	9'-10" f	8'-10" f	12'-7"	11'-5"	10'-0"	9'-7" f	8'-10" f	7'-11" f	11'-0"	10'-0"	8'-9"
	362VS125-33	33	11'-9" f	10'-11" f	9'-9" f	16'-7" f	15'-3"	13'-4"	10'-7" f	9'-9" f	8'-9" f	14'-8"	13'-4"	11'-8"
	400VS125-33	33	12'-1" f	11'-2" f	10'-0" f	17'-0" f	15'-8" f	14'-1" f	10'-10" f	10'-0" f	9'-0" f	15'-3" f	14'-1" f	12'-7" f
	600VS125-33	33	13'-6" f	12'-6" f	11'-3" f	19'-5" f	18'-0" f	16'-3" f	12'-2" f	11'-3" f	10'-1" f	17'-6" f	16'-3" f	14'-6" f

"f" - flexure controls; "w" - web crippling controls; no letter next to number means deflection controls

Notes for Table 7:

1. Ceiling Spans are in accordance with AISI S100 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 in accordance with AISI S100. 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 Ceiling Spans reported in the table.
5. All values are for simple spans, with compression flange either unbraced or braced at midspan. All framing members are laterally braced at ends.
6. Ceiling Spans are based on total dead load of assembly only, and do not include storage or live load for accessible ceilings.

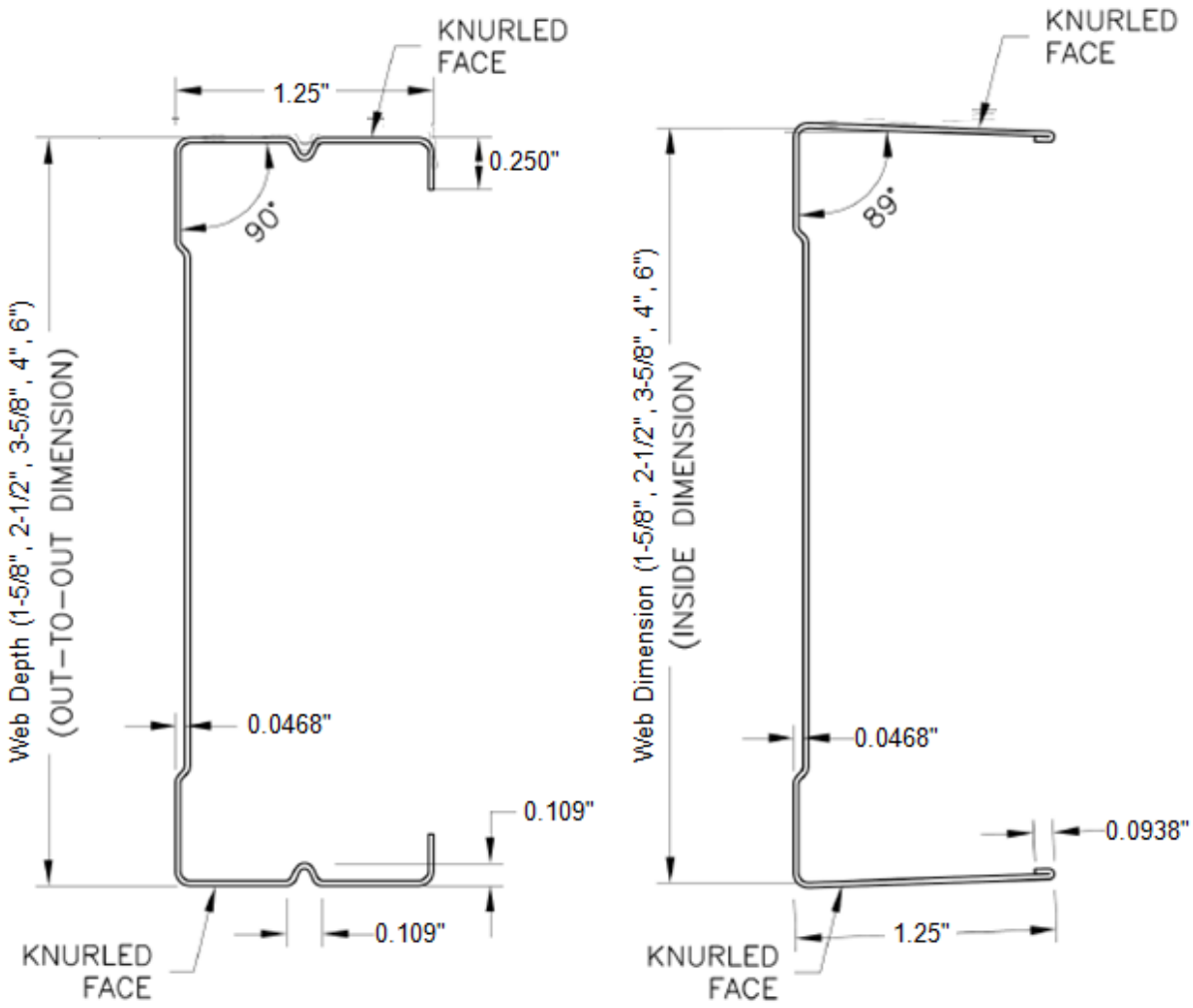

Figure 1 – *ViperStud*® Stud and Track Profiles
(Note: The 0.0938" hem shown for the track profile is only available in the VT25 product.)

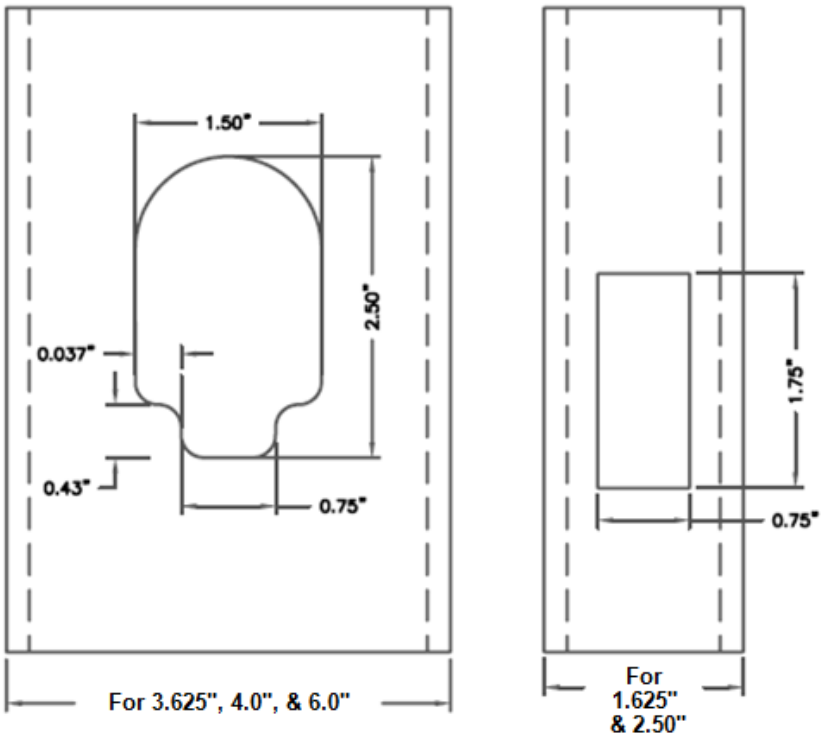

Figure 2 – ViperStud Knockouts