

ViperStud & Track COMPOSITE Submittal Data



ViperStud™ is an improved steel drywall framing stud and track system. Formed for extra strength, better screw retention, and greater limiting heights, the ViperStud Drywall Framing System is proven for better performance over traditional or dimpled alternatives.

Fully Tested Product

ViperStud™ has been tested extensively with Intertek-Warnock Hersey and Underwriters Laboratories. ViperStud™ is the only drywall stud listed with both Warnock Hersey and UL®.



Fire Rated Assemblies

Fully Tested, ASTM Compliant: ViperStud™ conforms to the following ASTM standards:

- ASTM E119 "Standard Test Methods for Fire Tests of Building Construction and Materials" Fire Tested for 1, 2, 3 and 4 hour rated walls.

1 HOUR FIRE RATED WALLS

- UL® Design U419
- Warnock-Hersey Design No. MW/WA 60-02
- Warnock-Hersey Design No. MW/WA 60-04
- Warnock-Hersey Design No. MW/WA 60-03
- Warnock-Hersey Design No. MW/WA 60-05

2 HOUR FIRE RATED WALLS

- Warnock-Hersey Design No. MW/WA 120-04
- Warnock-Hersey Design No. MW/WA 120-05
- Warnock-Hersey Design No. MW/WA 120-06
- Warnock-Hersey Design No. MW/WA 120-07

SEE THESE UL DESIGN ASSEMBLIES FOR EXPANDED UL CLASSIFICATIONS FOR VIPER20S & VIPER20D:

U403	U451	U491	V418	V448
U408	U454	U494	V419	V449
U412	U463	U495	V425	V452
U419	U465	U496	V435	V476
U431	U466	V410	V437	V477
U435	U471	V412	V438	
U436	U475	V416	V443	
U450	U478	V417	V444	

- ASTM C645 "Standard Specification for Nonstructural Steel Framing Members"
- ASTM C754 "Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products"
- ASTM E72 "Standard Test Methods of Conducting Strength Tests of Panels for Building Construction"
- NYC Department of Buildings MEA 56-08-M, MEA 56-08-M Vol 2, MEA 234-08-M, MEA 235-08-M

Physical Properties

VIPERSTUD

Model No.	Design Thickness (in.)	Minimum Thickness (in.)	Yield Strength	Coating
Viper25	0.0155	0.0147	50ksi	G40 ¹
Viper20S	0.0200	0.0190	50ksi	G40 ¹
Viper20D	0.0245	0.0233	45ksi	G40 ^{1,2}

- Stud web sizes:
1-5/8", 2-1/2", 3-5/8", 4", 6"
- Knockout sizes:
1-5/8" stud = 3/4" x 1-3/4"
2-1/2", 3-5/8", 4", & 6" = 1-1/2" x 2-1/2"

- Flange:
1-1/4"
- Return Lip:
3/16"

Notes:

¹ Or equivalent per ASTM C645

² G60 and G90 available upon request.

³ ViperTrack works with Viper25, Viper20S and Viper20D studs, but should not be used with Viper20D if hi impact, abuse or cement boards are used.

TRACK

Model No.	Design Thickness (in.)	Minimum Thickness (in.)	Yield Strength	Coating
ViperTrack ³	0.0155	0.0147	50ksi	G40 ¹
Viper20S Track	0.0200	0.0190	50ksi	G40 ¹
Viper20D Track	0.0245	0.0233	45ksi	G40 ^{1,2}

- Track web sizes:
1-5/8", 2-1/2", 3-5/8", 4", 6"
- Flange:
1-1/4"

VIPER20D™ DEEP LEG TRACK

Model No.	Design Thickness (in.)	Minimum Thickness (in.)	Yield Strength	Coating	LEG SIZE (in.)	GAP (in.)	ALLOWABLE LOAD (lb.)	MAX HEIGHT 5 psf, 16" o.c.
Viper20D track	0.0245	0.0233	45ksi	G40 ^{1,2}	2"	1/2"	77	23'-2"
					2-1/2"	3/4"	51	15'-4"
					3"	1"	39	11'-9"

Notes:

1. Studs at 16" O.C.

2. AISI Wall Stud Design 2007 Edition

3. 1-5/8" deep leg track available with maximum 2" leg

Notes:

¹ Or equivalent per ASTM C645

² G60 and G90 available upon request.



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For more information, please contact Marino|WARE® Technical Services at 866-545-1545.

This technical information reflects the most current information available and supersedes any and all previous publications effective April 24, 2009 #VSCSD-4/2009.

ViperStud & Track COMPOSITE Submittal Data



SECTION PROPERTIES – VIPERTRACK

Section	Design Thickness (in.)	Leg Size (in.)	Weight (lb/ft)	GROSS SECTION PROPERTIES					EFFECTIVE SECTION PROPERTIES			TORSIONAL PROPERTIES				
				Area (in. ²)	I _x (in. ⁴)	r _x (in.)	I _y (in. ⁴)	r _y (in.)	I _{xd} (in. ⁴)	S _{xe} (in. ³)	m _a (lb-in.)	x _o (in.)	J x 10 ⁻⁵ (in. ⁴)	c _w (in. ⁶)	r _o (in.)	Beta
VIPERTRACK																
162 VT125	0.0155	1.25	0.218	0.064	0.034	0.733	0.011	0.412	0.021	0.018	526	-0.892	0.0051	0.006	1.23	0.470
250 VT125	0.0155	1.25	0.264	0.078	0.086	1.050	0.012	0.400	0.053	0.027	794	-0.781	0.0062	0.015	1.37	0.675
362 VT125*	0.0155	1.25	0.323	0.095	0.196	1.440	0.014	0.381	0.114	0.038	1151	-0.675	0.0076	0.034	1.63	0.829
400 VT125*	0.0155	1.25	0.343	0.101	0.246	1.560	0.014	0.374	0.140	0.042	1270	-0.647	0.0081	0.043	1.73	0.860
600 VT125*	0.0155	1.25	0.449	0.132	0.640	2.200	0.016	0.342	0.324	0.063	1893	-0.529	0.0106	0.108	2.29	0.947

VIPER20S TRACK																
162 VT125	0.020	1.25	0.281	0.083	0.044	0.734	0.014	0.411	0.029	0.026	762	-0.890	0.0110	0.007	1.22	0.472
162 VT200	0.020	2.00	0.383	0.113	0.067	0.771	0.049	0.662	0.035	0.027	798	-1.590	0.0150	0.027	1.89	0.290
250 VT125	0.020	1.25	0.341	0.100	0.111	1.050	0.016	0.399	0.077	0.042	1270	-0.778	0.0133	0.019	1.37	0.676
250 VT200	0.020	2.00	0.443	0.130	0.162	1.110	0.057	0.661	0.090	0.042	1241	-1.440	0.0173	0.068	1.94	0.447
250 VT250	0.020	2.50	0.511	0.150	0.195	1.140	0.103	0.830	0.093	0.041	1228	-1.900	0.0200	0.126	2.37	0.355
250 VT300	0.020	3.00	0.579	0.170	0.229	1.160	0.168	0.995	0.097	0.041	1220	-2.370	0.0227	0.208	2.82	0.293
362 VT125	0.020	1.25	0.417	0.123	0.253	1.440	0.018	0.380	0.171	0.061	1828	-0.673	0.0163	0.044	1.63	0.830
362 VT200	0.020	2.00	0.519	0.153	0.357	1.530	0.064	0.647	0.191	0.061	1819	-1.290	0.0203	0.156	2.10	0.624
362 VT250	0.020	2.50	0.587	0.173	0.427	1.570	0.117	0.822	0.199	0.061	1812	-1.730	0.0230	0.286	2.48	0.513
362 VT300	0.020	3.00	0.655	0.193	0.496	1.610	0.190	0.994	0.206	0.060	1806	-2.180	0.0257	0.470	2.88	0.429
400 VT125	0.020	1.25	0.443	0.130	0.317	1.560	0.018	0.373	0.210	0.067	2012	-0.645	0.0173	0.055	1.73	0.861
400 VT200	0.020	2.00	0.545	0.160	0.443	1.660	0.066	0.641	0.232	0.067	2010	-1.250	0.0213	0.195	2.18	0.672
400 VT250	0.020	2.50	0.613	0.180	0.528	1.171	0.120	0.818	0.243	0.067	2006	-1.680	0.0240	0.357	2.53	0.561
400 VT300	0.020	3.00	0.681	0.200	0.612	1.750	0.197	0.991	0.252	0.067	2002	-2.120	0.0267	0.585	2.92	0.472
600 VT125*	0.020	1.25	0.579	0.170	0.826	2.200	0.020	0.342	0.480	0.099	2950	-0.528	0.0227	0.139	2.29	0.947
600 VT200*	0.020	2.00	0.681	0.200	1.110	2.350	0.074	0.607	0.536	0.101	3037	-1.060	0.0267	0.493	2.65	0.839
600 VT250*	0.020	2.50	0.749	0.220	1.290	2.420	0.136	0.786	0.560	0.102	3045	-1.460	0.0293	0.896	2.93	0.753
600 VT300*	0.020	3.00	0.817	0.240	1.480	2.480	0.223	0.964	0.580	0.102	3048	-1.870	0.0320	1.460	3.25	0.669

VIPER20D TRACK																
162 VT125	0.0245	1.25	0.344	0.101	0.055	0.734	0.017	0.410	0.039	0.034	914	-0.888	0.0202	0.009	1.22	0.473
162 VT200	0.0245	2.00	0.469	0.138	0.082	0.771	0.060	0.661	0.047	0.037	983	-1.590	0.0276	0.033	1.88	0.291
250 VT125	0.0245	1.25	0.417	0.123	0.136	1.050	0.020	0.398	0.100	0.062	1667	-0.776	0.0245	0.023	1.37	0.678
250 VT200	0.0245	2.00	0.542	0.159	0.198	1.120	0.069	0.660	0.121	0.063	1695	-1.440	0.0319	0.084	1.94	0.448
250 VT250	0.0245	2.50	0.625	0.184	0.240	1.140	0.126	0.829	0.132	0.062	1671	-1.900	0.0368	0.154	2.37	0.356
250 VT300	0.0245	3.00	0.709	0.208	0.281	1.160	0.206	0.994	0.139	0.061	1653	-2.370	0.0417	0.255	2.82	0.294
362 VT125	0.0245	1.25	0.511	0.150	0.310	1.440	0.022	0.379	0.238	0.094	2538	-0.672	0.0300	0.054	1.63	0.831
362 VT200	0.0245	2.00	0.636	0.187	0.438	1.530	0.078	0.647	0.275	0.093	2494	-1.290	0.0375	0.191	2.10	0.625
362 VT250	0.0245	2.50	0.719	0.211	0.523	1.570	0.143	0.822	0.286	0.092	2467	-1.730	0.0423	0.350	2.48	0.514
362 VT300	0.0245	3.00	0.803	0.236	0.609	1.610	0.233	0.993	0.297	0.091	2451	-2.180	0.0472	0.575	2.88	0.429
400 VT125	0.0245	1.25	0.542	0.159	0.389	1.560	0.022	0.373	0.300	0.102	2745	-0.643	0.0319	0.068	1.73	0.862
400 VT200	0.0245	2.00	0.667	0.196	0.543	1.670	0.080	0.641	0.333	0.102	2750	-1.240	0.0392	0.239	2.18	0.673
400 VT250	0.0245	2.50	0.750	0.221	0.647	1.710	0.147	0.817	0.350	0.101	2731	-1.680	0.0441	0.436	2.53	0.562
400 VT300	0.0245	3.00	0.834	0.245	0.750	1.750	0.240	0.990	0.364	0.101	2717	-2.120	0.0490	0.716	2.92	0.473
600 VT125*	0.0245	1.25	0.709	0.208	1.010	2.200	0.024	0.341	0.670	0.146	3940	-0.526	0.0417	0.170	2.29	0.947
600 VT200*	0.0245	2.00	0.834	0.245	1.350	2.350	0.090	0.606	0.766	0.152	4102	-1.060	0.0490	0.603	2.65	0.839
600 VT250*	0.0245	2.50	0.917	0.270	1.580	2.420	0.166	0.785	0.804	0.154	4135	-1.460	0.0539	1.100	2.93	0.754
600 VT300*	0.0245	3.00	1.000	0.294	1.810	2.480	0.273	0.963	0.835	0.154	4135	-1.870	0.0588	1.790	3.25	0.670

Notes:

- *h/t is greater than 200.
- I_{xd} was calculated at an assumed stress of 0.6 F_y.
- Yield strength 50 kis for 0.0155" and 0.0200" and 45 ksi for 0.0245"
- All calculations were based on AISI 2007.



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SECTION PROPERTIES – VIPERSTUD

Section	Design Thickness (in.)	Weight (lb/ft)	GROSS SECTION PROPERTIES					EFFECTIVE SECTION PROPERTIES			TORSIONAL PROPERTIES				
			Area (in. ²)	I _x (in. ⁴)	r _x (in.)	I _y (in. ⁴)	r _y (in.)	I _{xd} (in. ⁴)	S _{xe} (in. ³)	m _a (lb-in.)	X _o (in.)	J x 10 ⁻⁵ (in. ⁴)	C _w (in. ⁶)	r _o (in.)	Beta
VIPER25															
162 VS015	0.0155	0.235	0.0663	0.0314	0.688	0.0133	0.448	0.0288	0.0223	666	-1.01	0.531	0.0077	1.28	0.382
250 VS015	0.0155	0.282	0.0799	0.0823	1.020	0.0155	0.440	0.0769	0.0357	1067	-0.892	0.639	0.0195	1.38	0.584
362 VS015*	0.0155	0.341	0.0973	0.1940	1.410	0.0174	0.422	0.1690	0.0529	1583	-0.781	0.779	0.0450	1.64	0.775
400 VS015*	0.0155	0.361	0.1030	0.2440	1.540	0.0178	0.416	0.2090	0.0586	1753	-0.750	0.826	0.0563	1.74	0.815
600 VS015*	0.0155	0.466	0.1340	0.6440	2.190	0.0197	0.384	0.4940	0.0998	2989	-0.622	1.070	0.1430	2.30	0.927
VIPER20S															
162 VS020	0.0200	0.301	0.0852	0.0401	0.686	0.0170	0.446	0.0385	0.0317	948	-1.00	1.14	0.0097	1.27	0.383
250 VS020	0.0200	0.358	0.1030	0.1050	1.010	0.0197	0.438	0.1030	0.0512	1532	-0.887	1.37	0.0247	1.38	0.585
362 VS020	0.0200	0.437	0.1250	0.2480	1.410	0.0221	0.420	0.2410	0.0766	2292	-0.776	1.67	0.0571	1.64	0.776
400 VS020	0.0200	0.463	0.1330	0.3130	1.540	0.0227	0.414	0.2970	0.0849	2542	-0.746	1.77	0.0716	1.74	0.816
600 VS020*	0.0200	0.599	0.1730	0.8270	2.190	0.0251	0.381	0.6970	0.1470	4413	-0.618	2.30	0.1820	2.30	0.928
VIPER20D															
162 VS025	0.0245	0.366	0.1040	0.0486	0.684	0.0205	0.444	0.0491	0.0431	1162	-0.995	2.08	0.0117	1.27	0.384
250 VS025	0.0245	0.438	0.1250	0.1280	1.010	0.0238	0.436	0.1310	0.0704	1896	-0.882	2.51	0.0297	1.37	0.586
362 VS025	0.0245	0.532	0.1530	0.3020	1.410	0.0267	0.418	0.3130	0.1070	2869	-0.772	3.06	0.0689	1.64	0.777
400 VS025	0.0245	0.564	0.1620	0.3810	1.530	0.0275	0.412	0.3960	0.1180	3187	-0.741	3.24	0.0863	1.73	0.817
600 VS025*	0.0245	0.730	0.2110	1.0100	2.190	0.0304	0.379	0.9340	0.2090	5631	-0.614	4.22	0.2200	2.29	0.928

- Notes:
 1. * h/t is greater than 200.
 2. I_{xd} was calculated at an assumed stress of 0.6F_y.
 3. Yield strength 50 ksi for 0.0155" and 0.0200" and 45 ksi for 0.0245"
 4. All calculations were based on AISI 2007.

VIPERSTUD - COMPOSITE LIMITING HEIGHTS - 1/2" GYPSUM WALL BOARD (FT.-IN.)

DEPTH	EQ. GAUGE	DESIGN THICKNESS (IN.)	SPACING (O.C.)	5 PSF			7.5 PSF			10 PSF			15 PSF		
				L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
1-5/8"	25	0.0155	12	13'-9"f	10'-11"	9'-7"	12'-1"	9'-7"	8'-4"	10'-11"	8'-8"	-	9'-7"	-	-
			16	12'-6"	9'-11"	8'-8"	10'-11"	8'-8"	7'-7"	9'-11"	7'-11"	-	8'-8"	-	-
			24	10'-11"	8'-8"	7'-7"	9'-7"	7'-7"	-	8'-8"	-	-	7'-7"	-	-
	20S	0.0200	12	14'-3"	11'-4"	9'-11"	12'-5"	9'-11"	8'-8"	11'-4"	9'-0"	7'-10"	9'-11"	7'-10"	-
			16	12'-11"	10'-3"	9'-0"	11'-4"	9'-0"	7'-10"	10'-3"	8'-2"	-	9'-0"	-	-
			24	11'-4"	9'-0"	7'-10"	9'-11"	7'-10"	6'-10"	9'-0"	-	-	7'-10"	-	-
	20D	0.0245	12	14'-8"	11'-7"	10'-2"	12'-9"	10'-2"	8'-10"	11'-7"	9'-3"	8'-1"	10'-2"	8'-1"	-
			16	13'-4"	10'-7"	9'-3"	11'-7"	9'-3"	8'-1"	10'-7"	8'-5"	-	9'-3"	-	-
			24	11'-7"	9'-3"	8'-1"	10'-2"	8'-1"	-	9'-3"	-	-	8'-1"	-	-
3-5/8"	25	0.0155	12	23'-1"	18'-4"	16'-0"	20'-2"	16'-0"	14'-0"	18'-4"	14'-6"	12'-8"	15'-6"f	12'-8"	11'-1"
			16	21'-0"	16'-8"	14'-6"	18'-4"	14'-6"	12'-8"	16'-5"f	13'-3"	11'-6"	13'-5"f	11'-6"	10'-1"
			24	18'-4"	14'-6"	12'-8"	15'-6"f	12'-8"	11'-1"	13'-5"f	11'-6"	10'-1"	11'-0"f	10'-1"	8'-10"
	20S	0.0200	12	23'-6"	18'-8"	16'-3"	20'-6"	16'-3"	14'-3"	18'-8"	14'-9"	12'-11"	16'-3"	12'-11"	11'-3"
			16	21'-4"	16'-11"	14'-9"	18'-8"	14'-9"	12'-11"	16'-11"	13'-5"	11'-9"	14'-9"	11'-9"	10'-3"
			24	18'-8"	14'-9"	12'-11"	16'-3"	12'-11"	11'-3"	14'-9"	11'-9"	10'-3"	12'-6"f	10'-3"	9'-0"
	20D	0.0245	12	23'-10"	18'-11"	16'-6"	20'-9"	16'-6"	14'-5"	18'-11"	15'-0"	13'-1"	16'-6"	13'-1"	11'-5"
			16	21'-7"	17'-2"	15'-0"	18'-11"	15'-0"	13'-1"	17'-2"	13'-7"	11'-11"	15'-0"	11'-11"	10'-5"
			24	18'-11"	15'-0"	13'-1"	16'-6"	13'-1"	11'-5"	15'-0"	11'-11"	10'-5"	13'-1"	10'-5"	9'-1"
6"	25	0.0155	12	27'-3"	21'-8"	18'-11"	23'-10"	18'-11"	16'-6"	21'-8"	17'-2"	15'-0"	18'-0"f	15'-0"	13'-1"
			16	24'-9"	19'-8"	17'-2"	21'-8"	17'-2"	15'-0"	19'-1"f	15'-7"	13'-8"	15'-7"f	13'-8"	11'-11"
			24	21'-8"	17'-2"	15'-0"	18'-0"f	15'-0"	13'-1"	15'-7"f	13'-8"	11'-11"	12'-9"f	11'-11"	10'-5"
	20S	0.0200	12	29'-6"	23'-5"	20'-5"	25'-9"	20'-5"	17'-10"	23'-5"	18'-7"	16'-3"	20'-5"	16'-3"	14'-2"
			16	26'-9"	21'-3"	18'-7"	23'-5"	18'-7"	16'-3"	21'-3"	16'-10"	14'-9"	18'-0"f	14'-9"	12'-10"
			24	23'-5"	18'-7"	16'-3"	20'-5"	16'-3"	14'-2"	18'-0"f	14'-9"	12'-10"	14'-9"f	12'-10"	11'-3"
	20D	0.0245	12	31'-2"	24'-9"	21'-7"	27'-3"	21'-7"	18'-10"	24'-9"	19'-8"	17'-2"	21'-7"	17'-2"	15'-0"
			16	28'-4"	22'-6"	19'-8"	24'-9"	19'-8"	17'-2"	22'-6"	17'-10"	15'-7"	19'-2"f	15'-7"	13'-7"
			24	24'-9"	19'-8"	17'-2"	21'-7"	17'-2"	15'-0"	19'-2"f	15'-7"	13'-7"	15'-8"f	13'-7"	11'-11"

- Notes:
 1. Viper Stud 20 Deluxe gauge based on minimum yield strength = 45 ksi (steel thickness = 0.0245", minimum steel thickness = 0.0233")
 2. Viper Stud 20 Select gauge based on minimum yield strength = 50 ksi (steel thickness = 0.020", minimum steel thickness = 0.019")
 3. Viper Stud 25 gauge based on minimum yield strength = 50 ksi (steel thickness = 0.0155", minimum steel thickness = 0.0147")
 4. f = Flexural stress controls allowable wall height
 5. Viper composite limiting heights based on single layer of 1/2" thick type C gypsum board full height on each side with screws spaced 12" o.c. to framing members as per ASTM C754-04.
 6. ICC-ES -AC86-95 Utilized a 0.75 load reduction factor (for strength determination only) to determine the heights as shown in the table.

ViperStud & Track COMPOSITE Submittal Data



VIPERSTUD - COMPOSITE LIMITING HEIGHTS - 5/8" GYPSUM WALL BOARD (FT.-IN.)

DEPTH	EO. GAUGE	DESIGN THICKNESS (IN.)	SPACING (O.C.)	5 PSF			7.5 PSF			10 PSF			15 PSF		
				L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
1-5/8"	25	0.0155	12	17'-6"	13'-10"	12'-1"	14'-8"	12'-1"	10'-7"	12'-9"	11'-0"	9'-7"	10'-5"	9'-7"	8'-5"
			16	15'-7"	12'-7"	11'-0"	12'-9"	11'-0"	9'-7"	11'-0"	10'-0"	8'-9"	9'-0"	8'-9"	7'-7"
			24	12'-9"	11'-0"	9'-7"	10'-5"	9'-7"	8'-5"	9'-0"	8'-9"	7'-7"	-	-	-
	20S	0.0200	12	18'-3"	14'-6"	12'-8"	15'-3"	12'-8"	11'-0"	13'-3"	11'-6"	10'-0"	10'-10"	10'-0"	8'-9"
			16	16'-3"	13'-2"	11'-6"	13'-3"	11'-6"	10'-0"	11'-6"	10'-5"	9'-1"	9'-4"	9'-1"	8'-0"
			24	13'-3"	11'-6"	10'-0"	10'-10"	10'-0"	8'-9"	9'-4"	9'-1"	8'-0"	7'-8"	7'-8"	-
	20D	0.0245	12	18'-11"	15'-0"	13'-1"	16'-4"	13'-1"	11'-6"	14'-2"	11'-11"	10'-5"	11'-6"	10'-5"	9'-1"
			16	17'-2"	13'-8"	11'-11"	14'-2"	11'-11"	10'-5"	12'-3"	10'-10"	9'-6"	10'-0"	9'-6"	8'-3"
			24	14'-2"	11'-11"	10'-5"	11'-6"	10'-5"	9'-1"	10'-0"	9'-6"	8'-3"	8'-2"	8'-2"	-
2-1/2"	25	0.0155	12	19'-8"	16'-11"	14'-9"	16'-0"	14'-9"	12'-11"	13'-11"	13'-5"	11'-9"	11'-4"	11'-4"	10'-3"
			16	17'-0"	15'-5"	13'-5"	13'-11"	13'-5"	11'-9"	12'-0"	12'-0"	10'-8"	9'-10"	9'-10"	9'-4"
			24	13'-11"	13'-5"	11'-9"	11'-4"	11'-4"	10'-3"	9'-10"	9'-10"	9'-4"	8'-0"	8'-0"	8'-0"
	20S	0.0200	12	21'-4"	17'-0"	14'-10"	17'-9"	14'-10"	12'-11"	15'-4"	13'-6"	11'-9"	12'-7"	11'-9"	10'-3"
			16	18'-10"	15'-5"	13'-6"	15'-4"	13'-6"	11'-9"	13'-4"	12'-3"	10'-8"	10'-10"	10'-8"	9'-4"
			24	15'-4"	13'-6"	11'-9"	12'-7"	11'-9"	10'-3"	10'-10"	10'-8"	9'-4"	8'-10"	8'-10"	8'-2"
	20D	0.0245	12	21'-4"	17'-0"	14'-10"	18'-8"	14'-10"	12'-11"	17'-0"	13'-6"	11'-9"	14'-10"	11'-9"	10'-3"
			16	19'-5"	15'-5"	13'-6"	17'-0"	13'-6"	11'-9"	15'-5"	12'-3"	10'-8"	12'-10"	10'-8"	9'-4"
			24	17'-0"	13'-6"	11'-9"	14'-10"	11'-9"	10'-3"	12'-10"	10'-8"	9'-4"	10'-6"	9'-4"	8'-2"
3-5/8"	25	0.0155	12	21'-11"	17'-5"	15'-3"	19'-0"	15'-3"	13'-3"	16'-6"	13'-10"	12'-1"	13'-6"	12'-1"	10'-7"
			16	19'-11"	15'-10"	13'-10"	16'-6"	13'-10"	12'-1"	14'-3"	12'-7"	11'-0"	11'-8"	11'-0"	9'-7"
			24	16'-6"	13'-10"	12'-1"	13'-6"	12'-1"	10'-7"	11'-8"	11'-0"	9'-7"	9'-6"	9'-6"	8'-5"
	20S	0.0200	12	22'-8"	18'-0"	15'-9"	19'-10"	15'-9"	13'-9"	18'-0"	14'-4"	12'-6"	15'-1"	12'-6"	10'-11"
			16	20'-8"	16'-4"	14'-4"	18'-0"	14'-4"	12'-6"	16'-0"	13'-0"	11'-4"	13'-0"	11'-4"	9'-11"
			24	18'-0"	14'-4"	12'-6"	15'-1"	12'-6"	10'-11"	13'-0"	11'-4"	9'-11"	10'-8"	9'-11"	8'-8"
	20D	0.0245	12	23'-5"	18'-7"	16'-3"	20'-5"	16'-3"	14'-2"	18'-7"	14'-9"	12'-11"	16'-3"	12'-11"	11'-3"
			16	21'-3"	16'-10"	14'-9"	18'-7"	14'-9"	12'-11"	16'-10"	13'-5"	11'-8"	14'-9"	11'-8"	10'-3"
			24	18'-7"	14'-9"	12'-11"	16'-3"	12'-11"	11'-3"	14'-9"	11'-8"	10'-3"	12'-7"	10'-3"	8'-11"
4"	25	0.0155	12	25'-0"	20'-7"	17'-11"	20'-5"	17'-11"	15'-8"	17'-8"	16'-4"	14'-3"	14'-5"	14'-3"	12'-5"
			16	21'-7"	18'-8"	16'-4"	17'-8"	16'-4"	14'-3"	15'-3"	14'-10"	12'-11"	12'-6"	12'-6"	11'-4"
			24	17'-8"	16'-4"	14'-3"	14'-5"	14'-3"	12'-5"	12'-6"	12'-6"	11'-4"	10'-2"	10'-2"	9'-11"
	20S	0.0200	12	27'-3"	21'-7"	18'-11"	22'-7"	18'-11"	16'-6"	19'-6"	17'-2"	15'-0"	15'-11"	15'-0"	13'-1"
			16	23'-11"	19'-8"	17'-2"	19'-6"	17'-2"	15'-0"	16'-11"	15'-7"	13'-7"	13'-10"	13'-7"	11'-11"
			24	19'-6"	17'-2"	15'-0"	15'-11"	15'-0"	13'-1"	13'-10"	13'-7"	11'-11"	11'-3"	11'-3"	10'-5"
	20D	0.0245	12	28'-5"	22'-7"	19'-9"	24'-10"	19'-9"	17'-3"	22'-7"	17'-11"	15'-8"	18'-6"	15'-8"	13'-8"
			16	25'-10"	20'-6"	17'-11"	22'-7"	17'-11"	15'-8"	19'-8"	16'-3"	14'-3"	16'-1"	14'-3"	12'-5"
			24	22'-7"	17'-11"	15'-8"	18'-6"	15'-8"	13'-8"	16'-1"	14'-3"	12'-5"	13'-1"	12'-5"	10'-10"
6"	25	0.0155	12	30'-6"	25'-5"	22'-2"	24'-11"	22'-2"	19'-5"	21'-7"	20'-2"	17'-7"	17'-7"	17'-7"	15'-5"
			16	26'-5"	23'-1"	20'-2"	21'-7"	20'-2"	17'-7"	18'-8"	18'-4"	16'-0"	15'-3"	15'-3"	14'-0"
			24	21'-7"	20'-2"	17'-7"	17'-7"	17'-7"	15'-5"	15'-3"	15'-3"	14'-0"	12'-5"	12'-5"	12'-3"
	20S	0.0200	12	32'-7"	25'-11"	22'-7"	27'-9"	22'-7"	19'-9"	24'-0"	20'-6"	17'-11"	19'-7"	17'-11"	15'-8"
			16	29'-5"	23'-6"	20'-6"	24'-0"	20'-6"	17'-11"	20'-9"	18'-8"	16'-4"	17'-0"	16'-4"	14'-3"
			24	24'-0"	20'-6"	17'-11"	19'-7"	17'-11"	15'-8"	17'-0"	16'-4"	14'-3"	13'-10"	13'-10"	12'-5"
	20D	0.0245	12	33'-2"	26'-4"	23'-0"	29'-0"	23'-0"	20'-1"	26'-4"	20'-11"	18'-3"	22'-8"	18'-3"	16'-0"
			16	30'-2"	23'-11"	20'-11"	26'-4"	20'-11"	18'-3"	23'-11"	19'-0"	16'-7"	19'-8"	16'-7"	14'-6"
			24	26'-4"	20'-11"	18'-3"	22'-8"	18'-3"	16'-0"	19'-8"	16'-7"	14'-6"	16'-1"	14'-6"	12'-8"

Notes:

- Viper Stud 20 Deluxe gauge based on minimum yield strength = 45 ksi (steel thickness = 0.0245", minimum steel thickness = 0.0233")
- Viper Stud 20 Select gauge based on minimum yield strength = 50 ksi (steel thickness = 0.0200", minimum steel thickness = 0.019")
- Viper Stud 25 gauge based on minimum yield strength = 50 ksi (steel thickness = 0.0155", minimum steel thickness = 0.0147")
- f = Flexural stress controls allowable wall height
- Viper composite limiting heights based on single layer of 5/8" thick type X gypsum board full height on each side with screws spaced 12" o.c. to framing members as per ASTM C754-04.
- ICC-ES -AC86-95 Utilized a 0.75 load reduction factor (for strength determination only) to determine the heights as shown in the table.



For more information, please contact MarinoWARE® Technical Services at 866-545-1545.

This technical information reflects the most current information available and supersedes any and all previous publications effective April 24, 2009 #VSCSD-4/2009.