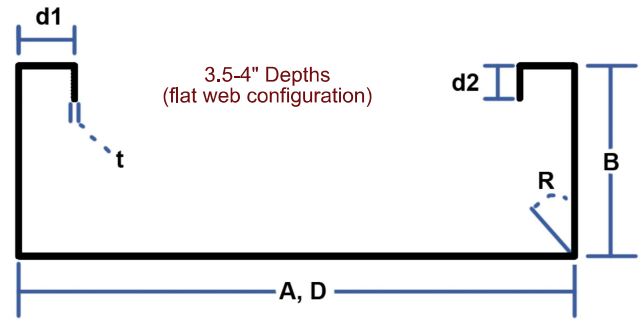


Load Bearing Wall Members

SigmaStud® Product Profile

Important Notes

1. Section properties and capacities are calculated in accordance with AISI S100-07 with 2010 supplement.
2. Tabulated gross properties are based on the full-unreduced cross section of the studs, away from punchouts.
3. Effective section properties incorporate the strength increase from the cold-work of forming as applicable per AISI S100-07 Sec. A7.2.
4. Net effective section properties are calculated at a cross section through the punchout.
5. Allowable moment is the lesser of M_{al} and M_{ad} . Stud distortional buckling is based on an assumed $k_y = 0$.
6. For deflection calculations, use the effective moment of inertia.
7. The effective moment of inertia for deflection is calculated at a stress which results in a section modulus such that the stress times the section modulus at that stress is equal to the allowable moment. AISI S100-07 Procedure I for serviceability determination has been used.



SigmaStud® Product Profile: 3-1/2" - 4" Stud Depths

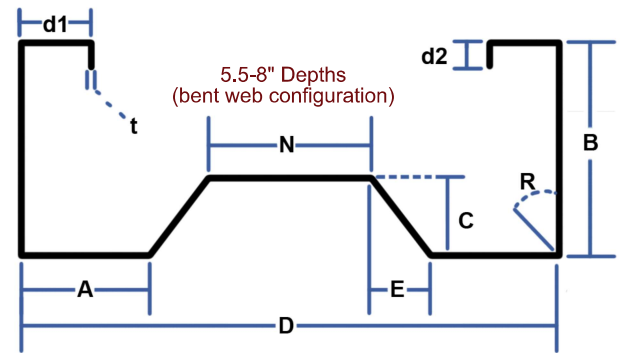
Section (All 50 ksi)	Overall Depth	Flange Width	Web Flat	Web Return	Web Return	Web Inside	Return Lip 1	Return Lip 2	Inside Bend Radius	Design Thickness	Unit Weight
	D	B	A	C	E	N	d1	d2	R	t	
	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(lb/ft)
350SG200-33	3.5	2	3.5	0	0	0	0.5892	0.5	0.105	0.0346	1.078
350SG200-43	3.5	2	3.5	0	0	0	0.6102	0.5	0.105	0.0451	1.400
350SG200-54	3.5	2	3.5	0	0	0	0.6332	0.5	0.105	0.0566	1.749
350SG200-68	3.5	2	3.5	0	0	0	0.6626	0.5	0.105	0.0713	2.192
350SG200-97	3.5	2	3.5	0	0	0	0.7234	0.5	0.105	0.1017	3.092
350SG250-43	3.5	2.5	3.5	0	0	0	0.6102	0.5	0.105	0.0451	1.553
350SG250-54	3.5	2.5	3.5	0	0	0	0.6332	0.5	0.105	0.0566	1.942
350SG250-68	3.5	2.5	3.5	0	0	0	0.6626	0.5	0.105	0.0713	2.435
350SG250-97	3.5	2.5	3.5	0	0	0	0.7234	0.5	0.105	0.1017	3.438
350SG300-54	3.5	3	3.5	0	0	0	0.6332	0.5	0.105	0.0566	2.135
350SG300-68	3.5	3	3.5	0	0	0	0.6626	0.5	0.105	0.0713	2.678
350SG300-97	3.5	3	3.5	0	0	0	0.7234	0.5	0.105	0.1017	3.785
350SG350-68	3.5	3.5	3.5	0	0	0	0.6626	0.5	0.105	0.0713	2.920
362SG200-33	3.625	2	3.625	0	0	0	0.5892	0.5	0.105	0.0346	1.093
362SG200-43	3.625	2	3.625	0	0	0	0.6102	0.5	0.105	0.0451	1.419
362SG200-54	3.625	2	3.625	0	0	0	0.6332	0.5	0.105	0.0566	1.773
362SG200-68	3.625	2	3.625	0	0	0	0.6626	0.5	0.105	0.0713	2.222
362SG200-97	3.625	2	3.625	0	0	0	0.7234	0.5	0.105	0.1017	3.135
362SG250-43	3.625	2.5	3.625	0	0	0	0.6102	0.5	0.105	0.0451	1.572
362SG250-54	3.625	2.5	3.625	0	0	0	0.6332	0.5	0.105	0.0566	1.966
362SG250-68	3.625	2.5	3.625	0	0	0	0.6626	0.5	0.105	0.0713	2.465
362SG250-97	3.625	2.5	3.625	0	0	0	0.7234	0.5	0.105	0.1017	3.481
362SG300-54	3.625	3	3.625	0	0	0	0.6332	0.5	0.105	0.0566	2.159
362SG300-68	3.625	3	3.625	0	0	0	0.6626	0.5	0.105	0.0713	2.708
362SG300-97	3.625	3	3.625	0	0	0	0.7234	0.5	0.105	0.1017	3.828
362SG350-68	3.625	3.5	3.625	0	0	0	0.6626	0.5	0.105	0.0713	2.950
400SG200-33	4	2	4	0	0	0	0.5892	0.5	0.105	0.0346	1.137
400SG200-43	4	2	4	0	0	0	0.6102	0.5	0.105	0.0451	1.477
400SG200-54	4	2	4	0	0	0	0.6332	0.5	0.105	0.0566	1.846
400SG200-68	4	2	4	0	0	0	0.6626	0.5	0.105	0.0713	2.313
400SG200-97	4	2	4	0	0	0	0.7234	0.5	0.105	0.1017	3.265
400SG250-43	4	2.5	4	0	0	0	0.6102	0.5	0.105	0.0451	1.630
400SG250-54	4	2.5	4	0	0	0	0.6332	0.5	0.105	0.0566	2.038
400SG250-68	4	2.5	4	0	0	0	0.6626	0.5	0.105	0.0713	2.556
400SG250-97	4	2.5	4	0	0	0	0.7234	0.5	0.105	0.1017	3.611
400SG300-54	4	3	4	0	0	0	0.6332	0.5	0.105	0.0566	2.231
400SG300-68	4	3	4	0	0	0	0.6626	0.5	0.105	0.0713	2.799
400SG300-97	4	3	4	0	0	0	0.7234	0.5	0.105	0.1017	3.958
400SG350-68	4	3.5	4	0	0	0	0.6626	0.5	0.105	0.0713	3.041
400SG350-97	4	3.5	4	0	0	0	0.7234	0.5	0.105	0.1017	4.303
400SG350-118	4	3.5	4	0	0	0	0.7684	0.5	0.105	0.1242	5.216

Load Bearing Wall Members

SigmaStud® Product Profile

Important Notes

1. Section properties and capacities are calculated in accordance with AISI S100-07 with 2010 supplement.
2. Tabulated gross properties are based on the full-unreduced cross section of the studs, away from punchouts.
3. Effective section properties incorporate the strength increase from the cold-work of forming as applicable per AISI S100-07 Sec. A7.2.
4. Net effective section properties are calculated at a cross section through the punchout.
5. Allowable moment is the lesser of M_{al} and M_{ad} . Stud distortional buckling is based on an assumed $k_{\phi} = 0$.
6. For deflection calculations, use the effective moment of inertia.
7. The effective moment of inertia for deflection is calculated at a stress which results in a section modulus such that the stress times the section modulus at that stress is equal to the allowable moment. AISI S100-07 Procedure I for serviceability determination has been used.



SigmaStud® Product Profile: 5-1/2" - 8" Stud Depths											
Section (All 50 ksi)	Overall Depth	Flange Width	Web Flat	Web Return	Web Return	Web Inside	Return Lip 1	Return Lip 2	Inside Bend Radius	Design Thickness	Unit Weight
	D (in)	B (in)	A (in)	C (in)	E (in)	N (in)	d1 (in)	d2 (in)	R (in)	t (in)	(lb/ft)
550SG162-33	5.5	1.625	1	1	0.625	2.25	0.5	0	0.105	0.0346	1.232
550SG162-43	5.5	1.625	1	1	0.625	2.25	0.5	0	0.105	0.0451	1.598
550SG162-54	5.5	1.625	1	1	0.625	2.25	0.5	0	0.105	0.0566	1.994
550SG162-68	5.5	1.625	1	1	0.625	2.25	0.5	0	0.105	0.0713	2.494
550SG200-33	5.5	2	1	1	0.625	2.25	0.5892	0.5	0.105	0.0346	1.438
550SG200-43	5.5	2	1	1	0.625	2.25	0.6102	0.5	0.105	0.0451	1.869
550SG200-54	5.5	2	1	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.338
550SG200-68	5.5	2	1	1	0.625	2.25	0.6626	0.5	0.105	0.0713	2.933
550SG200-97	5.5	2	1	1	0.625	2.25	0.7234	0.5	0.105	0.1017	4.147
550SG250-43	5.5	2.5	1	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.023
550SG250-54	5.5	2.5	1	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.531
550SG250-68	5.5	2.5	1	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.176
550SG250-97	5.5	2.5	1	1	0.625	2.25	0.7234	0.5	0.105	0.1017	4.493
550SG300-43	5.5	3	1	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.176
550SG300-54	5.5	3	1	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.723
550SG300-68	5.5	3	1	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.418
550SG300-97	5.5	3	1	1	0.625	2.25	0.7234	0.5	0.105	0.1017	4.839
550SG300-118	5.5	3	1	1	0.625	2.25	0.7684	0.5	0.105	0.1242	5.867
600SG162-33	6	1.625	1.25	1	0.625	2.25	0.5	0	0.105	0.0346	1.291
600SG162-43	6	1.625	1.25	1	0.625	2.25	0.5	0	0.105	0.0451	1.674
600SG162-54	6	1.625	1.25	1	0.625	2.25	0.5	0	0.105	0.0566	2.090
600SG162-68	6	1.625	1.25	1	0.625	2.25	0.5	0	0.105	0.0713	2.615
600SG200-33	6	2	1.25	1	0.625	2.25	0.5892	0.5	0.105	0.0346	1.497
600SG200-43	6	2	1.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	1.946
600SG200-54	6	2	1.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.435
600SG200-68	6	2	1.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.054
600SG200-97	6	2	1.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	4.320
600SG250-43	6	2.5	1.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.100
600SG250-54	6	2.5	1.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.627
600SG250-68	6	2.5	1.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.297
600SG250-97	6	2.5	1.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	4.666
600SG300-43	6	3	1.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.253
600SG300-54	6	3	1.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.820
600SG300-68	6	3	1.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.540
600SG300-97	6	3	1.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	5.012
600SG300-118	6	3	1.25	1	0.625	2.25	0.7684	0.5	0.105	0.1242	6.078
800SG162-33	8	1.625	2.25	1	0.625	2.25	0.5	0	0.105	0.0346	1.526
800SG162-43	8	1.625	2.25	1	0.625	2.25	0.5	0	0.105	0.0451	1.981
800SG162-54	8	1.625	2.25	1	0.625	2.25	0.5	0	0.105	0.0566	2.475
800SG162-68	8	1.625	2.25	1	0.625	2.25	0.5	0	0.105	0.0713	3.100
800SG200-33	8	2	2.25	1	0.625	2.25	0.5892	0.5	0.105	0.0346	1.733
800SG200-43	8	2	2.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.253
800SG200-54	8	2	2.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	2.820
800SG200-68	8	2	2.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.540
800SG200-97	8	2	2.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	5.012
800SG250-43	8	2.5	2.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.406
800SG250-54	8	2.5	2.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	3.012
800SG250-68	8	2.5	2.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	3.782
800SG250-97	8	2.5	2.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	5.358
800SG300-43	8	3	2.25	1	0.625	2.25	0.6102	0.5	0.105	0.0451	2.560
800SG300-54	8	3	2.25	1	0.625	2.25	0.6332	0.5	0.105	0.0566	3.205
800SG300-68	8	3	2.25	1	0.625	2.25	0.6626	0.5	0.105	0.0713	4.025
800SG300-97	8	3	2.25	1	0.625	2.25	0.7234	0.5	0.105	0.1017	5.704
800SG300-118	8	3	2.25	1	0.625	2.25	0.7684	0.5	0.105	0.1242	6.922

Important Notes

1. Section properties and capacities are calculated in accordance with AISI S100-16/S2-20, "North American Specification for the Design of Cold-Formed Steel Structural Members".
2. Effective section properties incorporate the strength increase from the cold-work of forming as applicable per AISI S100-16/S2-20, Sec. A3.3.2 (3).
3. Tabulated gross properties are based on the full-unreduced cross section of the studs, away from punchouts.
4. Allowable moment is the lesser of (M_{al}, M_{ad}) for solid sections or the lesser of (M_{al(net)}, M_{ad(net)}) for punched sections. Stud distortional buckling is based on an assumed k_f = 0.
5. For deflection calculations, use the effective moment of inertia.
6. The effective moment of inertia for deflection is calculated at a stress which results in a section modulus such that the stress times the section modulus at that stress is equal to the allowable moment. AISI S100-16/S2-20 Procedure I for serviceability determination has been used.

SigmaStud® Section Properties - Straight Web

Section (All 50 ksi)	Gross Properties						Torsional Properties						Effective Properties 50 ksi									
	Area	I _x	S _x	R _x	I _y	R _y	Jx10 ⁶	C _w	X _o	m	R _o	β	A _{c(net)}	I _{xc}	S _{xc}	S _{xc(net)}	M _{al}	M _{al(net)}	M _{ad}	M _{ad(net)}	V _a	V _{a(net)}
	(in ²)	(in ⁴)	(in ³)	(in)	(in ⁴)	(in)	(in ⁶)	(in ⁶)	(in)	(in)	(in)		(in ²)	(in ⁴)	(in ³)	(in ³)	(in-k)	(in-k)	(in-k)	(in-k)	(lbs)	(lbs)
350SG200-33	0.317	0.630	0.360	1.410	0.194	0.782	0.126	0.718	-1.975	1.178	2.549	0.400	0.201	0.615	0.310	0.283	9.295	8.479	8.570	8.332	1144	527
350SG200-43	0.411	0.810	0.463	1.404	0.249	0.779	0.279	0.929	-1.969	1.176	2.541	0.399	0.293	0.810	0.430	0.406	12.878	12.161	12.176	11.825	2141	747
350SG200-54	0.514	1.003	0.573	1.397	0.309	0.775	0.549	1.158	-1.963	1.173	2.531	0.398	0.384	1.003	0.550	0.530	16.470	15.871	16.295	15.825	3371	925
350SG200-68	0.644	1.241	0.709	1.388	0.382	0.770	1.091	1.444	-1.955	1.169	2.519	0.397	0.529	1.241	0.709	0.696	23.531	20.831	23.373	20.636	4208	900
350SG200-97	0.909	1.705	0.974	1.370	0.525	0.760	3.132	2.017	-1.938	1.160	2.492	0.395	0.756	1.705	0.974	0.958	33.387	32.831	33.387	32.827	5886	850
350SG250-43	0.456	0.945	0.540	1.439	0.424	0.964	0.309	1.565	-2.471	1.445	3.017	0.329	0.292	0.933	0.447	0.418	13.371	12.505	13.045	12.687	2141	747
350SG250-54	0.571	1.171	0.669	1.432	0.526	0.960	0.609	1.953	-2.465	1.442	3.008	0.329	0.383	1.171	0.571	0.545	17.099	16.324	17.616	17.120	3371	925
350SG250-68	0.715	1.450	0.829	1.424	0.653	0.955	1.212	2.443	-2.457	1.439	2.996	0.328	0.519	1.450	0.748	0.728	22.400	21.809	23.675	23.014	4208	900
350SG250-97	1.010	1.999	1.142	1.406	0.904	0.946	3.483	3.431	-2.441	1.430	2.972	0.325	0.835	1.999	1.125	1.107	37.597	37.005	38.177	37.438	5886	850
350SG300-54	0.627	1.338	0.765	1.461	0.814	1.139	0.670	2.996	-2.964	1.707	3.496	0.281	0.387	1.296	0.592	0.562	17.731	16.815	18.670	18.163	3371	925
350SG300-68	0.787	1.660	0.949	1.453	1.013	1.135	1.333	3.753	-2.957	1.704	3.485	0.280	0.530	1.648	0.782	0.757	23.418	22.673	25.307	24.608	4208	900
350SG300-97	1.112	2.292	1.310	1.436	1.408	1.125	3.834	5.289	-2.942	1.696	3.461	0.278	0.877	2.292	1.241	1.219	37.150	36.512	39.215	38.196	5886	850
350SG350-68	0.858	1.870	1.068	1.476	1.471	1.309	1.454	5.401	-3.456	1.965	3.980	0.246	0.535	1.812	0.804	0.774	24.073	23.179	26.651	25.932	4208	900
362SG200-33	0.321	0.683	0.377	1.459	0.196	0.782	0.128	0.759	-1.954	1.168	2.561	0.418	0.202	0.668	0.326	0.295	9.754	8.842	8.919	8.673	1102	544
362SG200-43	0.417	0.879	0.485	1.452	0.253	0.779	0.283	0.983	-1.948	1.166	2.552	0.417	0.293	0.879	0.451	0.424	13.504	12.690	12.685	12.320	2141	802
362SG200-54	0.521	1.089	0.601	1.445	0.313	0.775	0.556	1.224	-1.942	1.163	2.542	0.416	0.385	1.089	0.577	0.553	17.261	16.571	16.994	16.504	3372	994
362SG200-68	0.653	1.348	0.744	1.437	0.388	0.770	1.107	1.526	-1.934	1.159	2.530	0.415	0.532	1.348	0.744	0.728	24.678	21.799	24.401	21.653	4375	1007
362SG200-97	0.921	1.854	1.023	1.419	0.533	0.761	3.176	2.130	-1.918	1.150	2.504	0.413	0.769	1.854	1.023	1.007	35.050	34.514	35.050	34.509	6124	954
362SG250-43	0.462	1.024	0.565	1.489	0.430	0.964	0.313	1.656	-2.447	1.435	3.023	0.344	0.293	1.011	0.468	0.435	14.012	13.038	13.565	13.194	2141	802
362SG250-54	0.578	1.269	0.700	1.482	0.533	0.961	0.617	2.066	-2.442	1.432	3.014	0.344	0.385	1.269	0.598	0.569	17.908	17.031	18.335	17.821	3372	994
362SG250-68	0.724	1.573	0.868	1.474	0.662	0.956	1.227	2.583	-2.434	1.428	3.002	0.342	0.522	1.573	0.783	0.761	23.449	22.775	24.670	23.982	4375	1007
362SG250-97	1.023	2.169	1.197	1.456	0.916	0.946	3.527	3.625	-2.418	1.420	2.977	0.340	0.848	2.169	1.178	1.161	39.389	38.814	40.011	39.252	6124	954
362SG300-54	0.634	1.449	0.800	1.511	0.825	1.141	0.677	3.170	-2.940	1.696	3.497	0.293	0.389	1.403	0.620	0.586	18.563	17.535	19.402	18.878	3372	994
362SG300-68	0.796	1.798	0.992	1.503	1.027	1.136	1.348	3.970	-2.932	1.693	3.486	0.292	0.533	1.785	0.818	0.791	24.504	23.668	26.327	25.602	4375	1007
362SG300-97	1.125	2.485	1.371	1.486	1.427	1.126	3.877	5.590	-2.917	1.685	3.462	0.290	0.889	2.485	1.298	1.277	38.863	38.235	41.048	39.985	6124	954
362SG350-68	0.867	2.023	1.116	1.528	1.491	1.311	1.469	5.715	-3.430	1.954	3.977	0.256	0.538	1.961	0.841	0.808	25.186	24.190	27.689	26.946	4375	1007
400SG200-33	0.334	0.859	0.429	1.603	0.204	0.782	0.133	0.895	-1.894	1.139	2.602	0.470	0.202	0.842	0.373	0.332	11.168	9.928	9.971	9.701	991	589
400SG200-43	0.434	1.107	0.553	1.597	0.263	0.778	0.294	1.157	-1.889	1.136	2.593	0.469	0.295	1.107	0.515	0.477	15.429	14.276	14.220	13.817	2141	967
400SG200-54	0.542	1.371	0.686	1.590	0.325	0.775	0.579	1.440	-1.883	1.133	2.583	0.469	0.389	1.371	0.658	0.624	19.693	18.673	19.109	18.562	3372	1201
400SG200-68	0.680	1.700	0.850	1.581	0.403	0.770	1.152	1.794	-1.875	1.129	2.571	0.468	0.540	1.700	0.850	0.825	28.202	24.708	27.517	24.756	4876	1360
400SG200-97	0.959	2.344	1.172	1.563	0.555	0.760	3.308	2.498	-1.858	1.121	2.544	0.467	0.806	2.344	1.172	1.158	40.162	34.664	40.162	34.659	6839	1299
400SG250-43	0.479	1.283	0.641	1.637	0.446	0.965	0.325	1.951	-2.381	1.404	3.046	0.389	0.294	1.268	0.534	0.489	15.981	14.635	15.133	14.726	2141	967
400SG250-54	0.599	1.591	0.796	1.630	0.554	0.962	0.640	2.432	-2.375	1.401	3.037	0.388	0.388	1.591	0.681	0.640	20.397	19.150	20.506	19.938	3372	1201
400SG250-68	0.751	1.975	0.987	1.622	0.688	0.957	1.273	3.038	-2.368	1.398	3.025	0.387	0.530	1.975	0.891	0.858	26.669	25.675	27.679	26.913	4876	1360
400SG250-97	1.061	2.730	1.365	1.604	0.953	0.948	3.658	4.255	-2.352	1.390	3.000	0.386	0.908	2.730	1.343	1.351	44.884	40.448	45.635	40.443	6839	1299
400SG300-54	0.656	1.811	0.906	1.662	0.857	1.143	0.700	3.736	-2.868	1.665	3.506	0.331	0.392	1.755	0.705	0.658	21.123	19.694	21.611	21.036	3372	1201
400SG300-68	0.822	2.250	1.125	1.654	1.067	1.139	1.394	4.674	-2.861	1.661	3.495	0.330	0.541	2.235	0.930	0.890	27.841	26.652	29.405	28.605	4876	1360
400SG300-97	1.163	3.117	1.558	1.637	1.483	1.129	4.009	6.569	-2.845	1.654	3.471	0.328	0.927	3.117	1.473	1.453	44.109	43.508	46.248	45.045	6839	1299
400SG350-68	0.894	2.525	1.263	1.681	1.547	1.316	1.514	6.736	-3.354	1.922	3.976	0.288	0.545	2.447	0.955	0.909	28.602	27.223	30.817	30.002	4876	1360
400SG350-97	1.265	3.503	1.751	1.664	2.158	1.306	4.360	9.488	-3.339	1.915	3.953	0.286	0.917	3.483	1.502	1.473	44.961	44.092	49.104	47.809	6839	1299
400SG350-118	1.533	4.184	2.092	1.652	2.587	1.299	7.855	11.458	-3.328	1.909	3.936	0.285	1.235	4.184	1.980	1.955	59.268	58.533	62.640	61.275	8235	1256

Load Bearing Wall Members

SigmaStud® Section Properties

Refer to Important Table Notes on Page 5

SigmaStud® Section Properties																						
Section (All 50 ksi)	Gross Properties						Torsional Properties						Effective Properties 50 ksi									
	Area	I _x	S _x	R _x	I _y	R _y	Jx10 ³	C _w	X _o	m	R _o	β	A _{e (net)}	I _{ce}	S _{xe}	S _{xe (net)}	M _{al}	M _{al (net)}	M _{ad}	M _{ad (net)}	V _a	V _{a (net)}
	(in ²)	(in ⁴)	(in ³)	(in)	(in ⁴)	(in)	(in ³)	(in ⁴)	(in)	(in)	(in)	(in)		(in ²)	(in ⁴)	(in ³)	(in ³)	(in-k)	(in-k)	(in-k)	(in-k)	(lb)
550SG162-33	0.362	1.522	0.554	2.051	0.096	0.514	0.144	0.864	-0.203	0.495	2.124	0.991	0.262	1.522	0.499	0.492	14.933	14.728	11.731	11.263	996	586
550SG162-43	0.469	1.963	0.714	2.045	0.122	0.510	0.318	1.097	-0.191	0.504	2.116	0.992	0.366	1.963	0.663	0.656	19.864	19.632	16.926	16.198	2141	953
550SG162-54	0.586	2.434	0.885	2.038	0.150	0.506	0.626	1.338	-0.178	0.514	2.108	0.993	0.484	2.434	0.855	0.847	28.406	28.147	24.685	23.538	3372	1176
550SG162-68	0.733	3.020	1.098	2.030	0.184	0.501	1.242	1.624	-0.162	0.526	2.097	0.994	0.626	3.020	1.093	1.085	37.052	36.790	34.068	32.424	4793	1298
550SG200-33	0.423	1.882	0.684	2.110	0.175	0.643	0.169	1.783	-0.716	0.160	2.319	0.905	0.316	1.859	0.609	0.602	18.245	18.026	14.840	14.464	996	586
550SG200-43	0.549	2.432	0.884	2.104	0.225	0.640	0.372	2.294	-0.708	0.165	2.310	0.906	0.449	2.432	0.833	0.826	24.953	24.737	21.359	20.787	2141	953
550SG200-54	0.687	3.023	1.099	2.097	0.278	0.636	0.734	2.838	-0.700	0.172	2.301	0.907	0.577	3.023	1.059	1.051	31.695	31.454	28.982	28.186	3372	1176
550SG200-68	0.862	3.761	1.368	2.089	0.344	0.631	1.460	3.510	-0.689	0.180	2.289	0.909	0.755	3.761	1.368	1.362	45.387	45.201	42.130	40.928	4793	1298
550SG200-97	1.219	5.229	1.901	2.072	0.471	0.622	4.201	4.816	-0.667	0.197	2.263	0.913	1.066	5.229	1.901	1.894	65.164	64.924	65.164	64.762	6657	1207
550SG250-43	0.594	2.767	1.006	2.158	0.389	0.809	0.403	3.788	-1.149	0.104	2.575	0.801	0.448	2.752	0.860	0.848	25.753	25.402	22.319	21.755	2141	953
550SG250-54	0.744	3.442	1.252	2.151	0.483	0.806	0.794	4.701	-1.141	0.098	2.565	0.802	0.576	3.442	1.093	1.079	32.714	32.302	30.488	29.686	3372	1176
550SG250-68	0.933	4.286	1.559	2.143	0.599	0.801	1.581	5.835	-1.131	0.090	2.552	0.804	0.745	4.286	1.419	1.405	42.488	42.052	41.569	40.458	4793	1298
550SG250-97	1.320	5.970	2.171	2.126	0.826	0.791	4.552	8.069	-1.108	0.073	2.525	0.807	1.143	5.970	2.137	2.124	71.427	71.012	71.151	69.241	6657	1207
550SG300-43	0.639	3.103	1.128	2.203	0.622	0.987	0.434	5.742	-1.597	0.369	2.894	0.695	0.445	2.995	0.876	0.860	26.232	25.746	23.034	22.484	2141	953
550SG300-54	0.800	3.861	1.404	2.197	0.773	0.983	0.855	7.139	-1.589	0.363	2.884	0.696	0.580	3.739	1.129	1.111	33.808	33.249	31.625	30.830	3372	1176
550SG300-68	1.004	4.812	1.750	2.189	0.960	0.978	1.702	8.883	-1.579	0.355	2.870	0.697	0.756	4.770	1.477	1.457	44.224	43.615	43.406	42.278	4793	1298
550SG300-97	1.422	6.711	2.440	2.172	1.332	0.968	4.902	12.348	-1.557	0.340	2.843	0.700	1.187	6.711	2.313	2.296	69.252	68.742	69.483	67.704	6657	1207
550SG300-118	1.724	8.048	2.927	2.161	1.590	0.960	8.837	14.766	-1.541	0.328	2.822	0.702	1.462	8.048	2.816	2.798	94.018	93.399	96.698	94.218	7956	1142
600SG162-33	0.379	1.854	0.618	2.211	0.104	0.523	0.151	1.090	-0.234	0.432	2.284	0.990	0.279	1.854	0.558	0.552	16.714	16.516	12.720	12.230	878	634
600SG162-43	0.492	2.392	0.797	2.205	0.133	0.519	0.334	1.386	-0.222	0.441	2.276	0.990	0.388	2.392	0.742	0.734	22.211	21.988	18.413	17.644	1959	1073
600SG162-54	0.614	2.968	0.989	2.198	0.163	0.515	0.656	1.692	-0.210	0.450	2.268	0.991	0.512	2.968	0.956	0.948	31.744	31.499	26.924	25.704	3372	1452
600SG162-68	0.768	3.684	1.228	2.190	0.200	0.510	1.302	2.058	-0.193	0.463	2.257	0.993	0.661	3.684	1.222	1.215	41.410	41.167	37.300	35.533	5352	1797
600SG200-33	0.440	2.291	0.764	2.282	0.187	0.653	0.176	2.203	-0.744	0.097	2.487	0.910	0.333	2.267	0.682	0.675	20.426	20.213	16.201	15.800	878	634
600SG200-43	0.572	2.962	0.987	2.276	0.241	0.650	0.388	2.837	-0.737	0.102	2.479	0.912	0.472	2.962	0.932	0.925	27.897	27.690	23.374	22.760	1959	1073
600SG200-54	0.715	3.683	1.228	2.269	0.299	0.646	0.764	3.513	-0.729	0.108	2.469	0.913	0.605	3.683	1.183	1.175	35.406	35.176	31.797	30.937	3372	1452
600SG200-68	0.898	4.586	1.529	2.261	0.370	0.642	1.521	4.350	-0.719	0.116	2.457	0.914	0.791	4.586	1.529	1.524	50.735	50.565	46.332	45.025	5352	1797
600SG200-97	1.269	6.386	2.129	2.243	0.508	0.633	4.376	5.980	-0.697	0.133	2.432	0.918	1.117	6.386	2.129	2.122	72.948	72.729	72.948	72.305	7610	1726
600SG250-43	0.617	3.362	1.121	2.334	0.413	0.818	0.418	4.633	-1.173	0.165	2.737	0.816	0.471	3.347	0.961	0.950	28.776	28.429	24.389	23.785	1959	1073
600SG250-54	0.772	4.183	1.394	2.328	0.513	0.815	0.824	5.752	-1.165	0.160	2.728	0.818	0.604	4.183	1.220	1.206	36.527	36.119	33.384	32.520	3372	1452
600SG250-68	0.969	5.213	1.738	2.320	0.636	0.810	1.642	7.145	-1.155	0.152	2.715	0.819	0.780	5.213	1.583	1.569	47.392	46.964	45.633	44.428	5352	1797
600SG250-97	1.371	7.270	2.423	2.303	0.879	0.800	4.727	9.893	-1.133	0.137	2.688	0.822	1.195	7.270	2.384	2.372	79.689	79.298	78.437	76.343	7610	1726
600SG300-43	0.662	3.761	1.254	2.384	0.655	0.995	0.449	6.972	-1.616	0.429	3.047	0.719	0.468	3.641	0.979	0.963	29.313	28.824	25.131	24.543	1959	1073
600SG300-54	0.829	4.683	1.561	2.377	0.814	0.991	0.885	8.670	-1.608	0.424	3.036	0.720	0.608	4.542	1.260	1.242	37.738	37.177	34.564	33.711	3372	1452
600SG300-68	1.040	5.840	1.947	2.369	1.012	0.986	1.763	10.793	-1.598	0.417	3.023	0.721	0.791	5.795	1.647	1.627	49.312	48.703	47.543	46.327	5352	1797
600SG300-97	1.473	8.155	2.718	2.353	1.404	0.976	5.078	15.015	-1.577	0.402	2.996	0.723	1.238	8.155	2.575	2.559	77.106	76.610	76.434	74.491	7610	1726
600SG300-118	1.786	9.789	3.263	2.341	1.678	0.969	9.154	17.967	-1.562	0.391	2.976	0.725	1.525	9.789	3.138	3.120	104.762	104.165	106.616	103.892	9118	1649
800SG162-33	0.448	3.631	0.908	2.845	0.130	0.538	0.179	2.193	-0.302	0.261	2.912	0.989	0.299	3.631	0.755	0.745	22.609	22.305	16.445	15.895	595	595
800SG162-43	0.582	4.691	1.173	2.839	0.166	0.534	0.395	2.796	-0.292	0.269	2.903	0.990	0.442	4.691	1.057	1.048	31.655	31.388	24.107	23.217	1324	1268
800SG162-54	0.727	5.829	1.457	2.831	0.205	0.531	0.777	3.424	-0.280	0.278	2.894	0.991	0.613	5.829	1.425	1.420	42.670	42.505	33.345	32.019	2632	1994
800SG162-68	0.911	7.250	1.812	2.821	0.252	0.526	1.544	4.180	-0.265	0.289	2.882	0.992	0.804	7.250	1.802	1.796	61.069	60.881	50.061	47.878	5300	3156
800SG200-33	0.509	4.453	1.113	2.957	0.230	0.672	0.203	4.278	-0.791	0.064	3.134	0.936	0.353	4.432	0.931	0.920	27.875	27.559	21.591	21.107	595	595
800SG200-43	0.662	5.765	1.441	2.951	0.296	0.669	0.449	5.516	-0.784	0.059	3.126	0.937	0.525	5.765	1.327	1.319	39.722	39.476	31.423	30.667	1324	1268
800SG200-54	0.829	7.181	1.795	2.944	0.367	0.666	0.885	6.840	-0.777	0.054	3.117	0.938	0.703	7.181	1.731	1.725	51.839	51.640	43.141	42.055	2632	1994
800SG200-68	1.040	8.960	2.240	2.935	0.455	0.662	1.763	8.484	-0.767	0.047	3.105	0.939	0.933	8.960	2.240	2.236	74.340	74.215	63.400	61.713	5300	3156
800SG200-97	1.473	12.530	3.133	2.917	0.629	0.653	5.078	11.713	-0.748	0.033	3.081	0.941	1.320	12.530	3.133	3.128	107.352	107.192	104.064	101.327	10888	4452
800SG250-43	0.707	6.478	1.620	3.027	0.493	0.835	0.479	8.833	-1.196	0.317	3.360	0.873	0.524	6.478	1.365	1.351	40.856	40.447	32.761	32.012	1324	1268
800SG250-54	0.885	8.074	2.019	3.020	0.612	0.832	0.945	10.975	-1.189	0.312	3.350	0.874	0.702	8.074	1.783	1.770	53.382	52.985	45.165	44.076	2632	1994
800SG250-68	1.111	10.081	2.520	3.012	0.761	0.827	1.883	13.649	-1.179	0.305	3.339	0.875	0.923	10.081	2.306	2.292	69.027	68.617	62.282	60.729	5300	3156

Table Background And Example

1. Basis For Tables:

The SigmaStud Combined Axial and Lateral Load tables in this catalog cover the following basic load combinations for the Allowable Stress Design (ASD) Method (IBC 2024 and ASCE 7-22). Listed wind pressures represent calculated design wind pressure ($0.6W$ based on 2024 IBC).

- IBC 2024 / ASCE 7-22
 - i. $D + L$ (Strength Determination)
 - ii. $D + 0.75L + 0.75(0.6W_{MWFRS}^*)$ (Strength Determination)
 - iii. $D + 0.70(0.6W_{C\&C}^{**})$ (Deflection Determination)

* MWFRS: Main Wind Force Resisting System

** C&C: Component and Cladding

- For deflection determination IBC 2024 Sec. 1604.3 and AISI S240-20 North American Standard for Cold-Formed Steel Structural Framing Sec. B1.1.2. allow for a reduction factor of 0.7 on the component and cladding wind load ($0.7W_{C\&C}$).



2. Design Example:

Given:

Service (Un-factored) Loads:

Axial Dead Load = 1.6 kips

Stud Spacing = 16 in. o.c.

Specified Deflection Limit = $L/360$

Bridging (Lateral Bracing) at maximum vertical spacing of 48" o.c.

Calculations:

- a) Use the $D + L$ load combination to get the first estimate of the stud.
 Combination total axial load = $1.6 \text{ kips} + 3.2 \text{ kips} = 4.8 \text{ kips}$
 From the "No Lateral Load" table with a 12 ft wall height, choose 600SG200-43 (50 ksi) with an axial resistance of 9.35 kips > 4.8 kips. **OK**
- b) Check the $D + 0.75L + 0.75(0.6W_{MWFRS})$ (IBC 2024 / ASCE 7-22) load combination for strength.
 Combination total axial load = $1.6 \text{ kips} + 0.75(3.2 \text{ kips}) = 4.0 \text{ kips}$
 $0.75(0.6W_{MWFRS}) = 0.75 \times 28 \text{ psf} = 21 \text{ psf}$ (approximately 20 psf)
 Go to the "Lateral Load = 20 psf" table with a 12 ft. wall height and 16 in. stud spacing. The axial resistance for 600SG200-43 (50 ksi) is 6.20 kips > 4.0 kips. **OK**
- c) Check the $0.70(0.6W_{C\&C})$ (IBC 2024 / ASCE 7-22) load combination for deflection.
 The specified limit is $L/360$.
 Go to the "Lateral Load = 40 psf" table with a 12 ft. wall height and 16 in. stud spacing. The deflection parameter for 600SG200-43 (50 ksi) is blank, which indicates that deflection is less than $L/720 < L/360$. **OK**

Conclusion:

Use 600SG200-43 (50 ksi) (with design thickness = 0.0451" and $F_y = 50 \text{ ksi}$) spaced at 16 in. o.c. with 2 lines of bridging arranged so that the maximum spacing does not exceed 48 in. (4 ft.)

3. Extra Design Considerations:

- a) Check lateral end reaction of the stud for web crippling if applicable.
- b) If the specified axial dead load acting on the stud is significantly larger than the specified axial live load, the following basic load combination needs to be checked as well:
 - IBC 2024 / ASCE 7-22
 - i. $D + (0.6W_{C\&C})$ (Strength Determination)