SigmaTrak® Runner Track Improvement

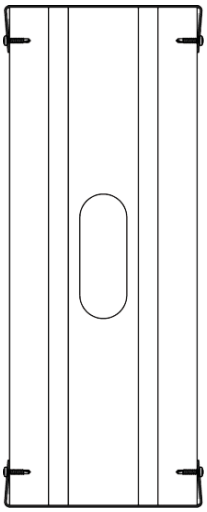
Product Description

SigmaTrak® is the ideal runner track for load bearing and curtain wall metal stud wall assemblies. Manufactured from mill-certified steel, SigmaTrak's unique shape is designed to allow a stud to seat fully within the track, providing full bearing at the top and bottom structural tracks. Load bearing studs must be fully seated within the top and bottom tracks according to design standards.

SigmaTrak eliminates field issues typically seen with (T) section tracks where the studs bear directly on the corner radius of the track, creating gaps between the stud and track.

Benefits That Add Value:

- Track web is oversized to allow the stud to seat fully in the track
- Eliminates the gap between the stud and the track as a result of bearing on corner radii
- Faster assembly than with standard track (no forcing/squeezing stud into bearing on track radii)
- Manufactured from traceable mill-certified steel
- Manufacturing tolerances based on ASTM C955-11c

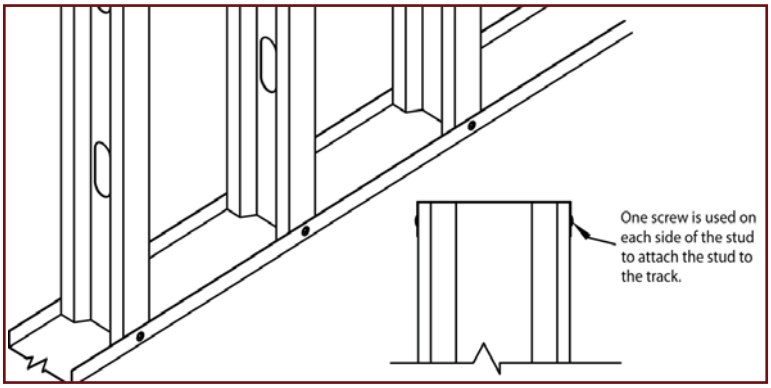


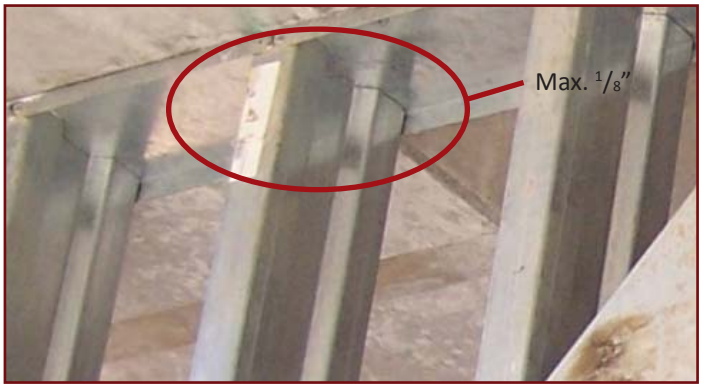
Track Recommendations

- The top and bottom track should match the stud thickness
- Minimum track thickness = 54mils
- When welding is required to the top track, it is recommended to use a 14ga (68mils) thickness. Welding may be used as a means of attaching light gauge components, and should be performed by an AWS certified welder.

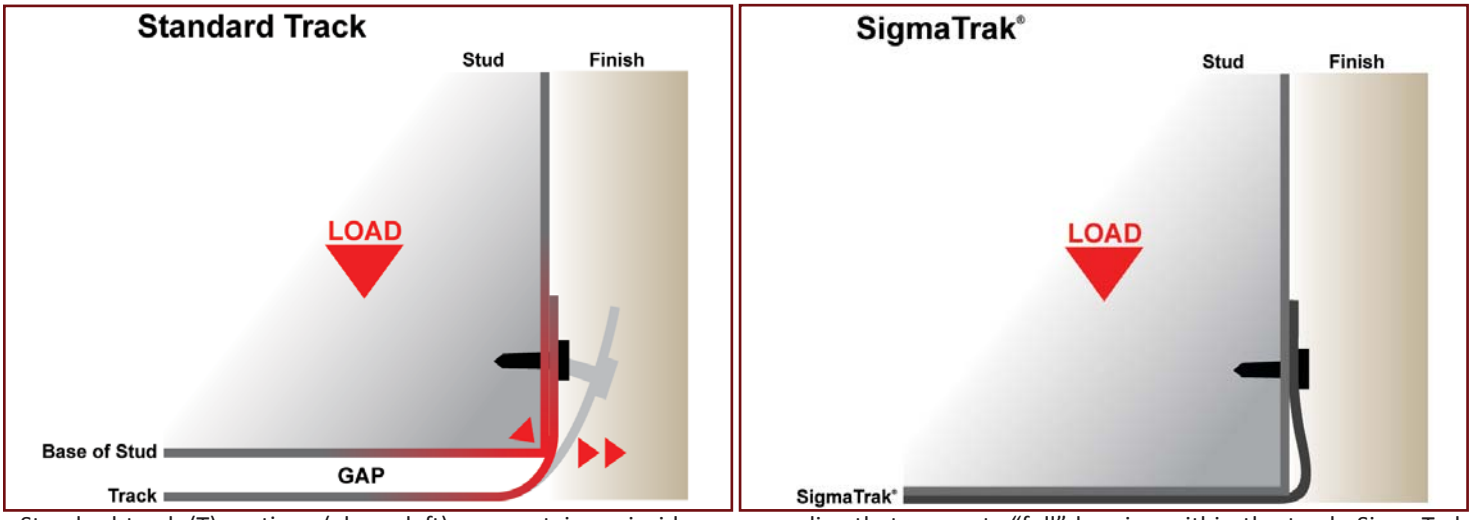
Material Properties:

ASTM A1003/A1003M or ASTM A653/A653M, G-60 (Z180) minimum hot-dipped galvanized coating; or equivalent. Grade 50 (340), 50ksi (340 MPa) minimum yield strength, 65ksi (450 MPa) minimum tensile strength or 33ksi (230MPa) minimum yield strength, 45ksi (310 MPa) minimum tensile strength.





Load bearing walls are designed to fully seat within the top and bottom tracks. Design standards recommend a maximum gap of 1/8" in order to obtain an effective bearing condition.



Standard track (T) sections (above left) can contain an inside corner radius that prevents "full" bearing within the track. SigmaTrak (above right) allows full bearing of the stud within the track

Important Notes:

1. Web depth for track sections is equal to the nominal height plus 2 times the design thickness plus 2 times the bend radius.
2. Effective properties incorporate the strength increase from the cold-work of forming as applicable per AISI A7.2.
3. For deflection calculations, use the effective moment of inertia.
4. 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.

SigmaTrak® Section Properties

Section (All 50 ksi)	Design Thickness	Gross Properties							Effective Properties								Torsional					
		Area	Weight	I_x	S_x	R_x	I_y	R_y	I_{xe}	S_{xe}	M_a	V_{ag}	I_{ye} [1]	M_{ya} [1]	I_{ye} [2]	M_{ya} [2]	Jx1000	C_w	X_o	m	R_o	ß
	(in)	(in^2)	(lb/ft)	(in^4)	(in^3)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in^4)	(in-k)	(in^4)	(in-k)	(in^4)	(in^6)	(in)	(in)	(in)	
350SGT150-33	0.0346	0.229	0.778	0.498	0.264	1.476	0.050	0.467	0.409	0.172	5.158	1,053	0.050	0.116	0.047	1.218	0.091	0.120	-0.867	0.533	1.774	0.761
350SGT150-43	0.0451	0.298	1.013	0.651	0.343	1.479	0.064	0.465	0.566	0.243	7.263	2,141	0.064	0.275	0.064	1.634	0.202	0.156	-0.862	0.531	1.774	0.764
350SGT150-54	0.0566	0.373	1.270	0.819	0.429	1.482	0.080	0.463	0.747	0.327	9.804	3,372	0.080	0.610	0.080	2.084	0.399	0.194	-0.857	0.528	1.773	0.766
350SGT150-68	0.0713	0.470	1.599	1.036	0.538	1.485	0.099	0.460	0.988	0.446	13.355	4,679	0.099	1.381	0.099	2.613	0.796	0.243	-0.851	0.525	1.772	0.770
350SGT150-97	0.1017	0.669	2.276	1.489	0.761	1.492	0.138	0.454	1.489	0.717	21.457	6,674	0.138	3.657	0.138	3.657	2.306	0.342	-0.838	0.518	1.771	0.776
350SGT150-118	0.1242	0.814	2.771	1.825	0.922	1.497	0.165	0.450	1.825	0.922	27.617	8,138	0.165	4.395	0.165	4.395	4.173	0.412	-0.828	0.513	1.769	0.781
350SGT200-33	0.0346	0.263	0.895	0.619	0.328	1.534	0.109	0.645	0.470	0.172	5.144	1,053	0.109	0.092	0.100	2.054	0.105	0.262	-1.285	0.768	2.102	0.627
350SGT200-43	0.0451	0.343	1.166	0.810	0.426	1.537	0.142	0.643	0.649	0.256	7.674	2,141	0.142	0.223	0.138	2.775	0.232	0.341	-1.280	0.765	2.101	0.629
350SGT200-54	0.0566	0.430	1.463	1.020	0.534	1.540	0.176	0.641	0.862	0.348	10.412	3,372	0.176	0.504	0.176	3.564	0.459	0.427	-1.275	0.762	2.100	0.631
350SGT200-68	0.0713	0.541	1.841	1.291	0.670	1.545	0.220	0.638	1.151	0.478	14.297	4,679	0.220	1.182	0.220	4.530	0.917	0.536	-1.268	0.759	2.098	0.635
350SGT200-97	0.1017	0.770	2.622	1.858	0.950	1.553	0.308	0.632	1.788	0.784	23.474	6,674	0.308	4.456	0.308	6.371	2.656	0.758	-1.254	0.752	2.094	0.642
350SGT200-118	0.1242	0.938	3.193	2.281	1.153	1.559	0.370	0.628	2.277	1.033	30.936	8,138	0.370	7.688	0.370	7.688	4.809	0.920	-1.243	0.746	2.091	0.646
362SGT150-33	0.0346	0.233	0.792	0.537	0.275	1.519	0.050	0.465	0.442	0.181	5.424	1,017	0.050	0.117	0.047	1.219	0.093	0.130	-0.855	0.528	1.804	0.775
362SGT150-43	0.0451	0.303	1.032	0.702	0.358	1.521	0.065	0.463	0.611	0.255	7.625	2,141	0.065	0.276	0.064	1.637	0.206	0.168	-0.851	0.526	1.803	0.778
362SGT150-54	0.0566	0.380	1.294	0.884	0.448	1.524	0.081	0.461	0.806	0.343	10.279	3,372	0.081	0.608	0.081	2.088	0.406	0.210	-0.846	0.523	1.803	0.780
362SGT150-68	0.0713	0.479	1.629	1.117	0.562	1.528	0.100	0.458	1.066	0.467	13.983	4,846	0.100	1.372	0.100	2.624	0.811	0.263	-0.840	0.520	1.802	0.783
362SGT150-97	0.1017	0.681	2.319	1.605	0.795	1.535	0.139	0.452	1.605	0.749	22.424	6,912	0.139	3.671	0.139	3.671	2.349	0.369	-0.827	0.513	1.801	0.789
362SGT150-118	0.1242	0.830	2.824	1.967	0.963	1.540	0.166	0.448	1.967	0.963	28.844	8,428	0.166	4.412	0.166	4.412	4.252	0.444	-0.817	0.508	1.800	0.794
362SGT200-33	0.0346	0.267	0.910	0.667	0.342	1.579	0.111	0.643	0.508	0.178	5.321	1,017	0.111	0.092	0.100	2.057	0.107	0.283	-1.270	0.761	2.126	0.643
362SGT200-43	0.0451	0.348	1.186	0.872	0.444	1.582	0.143	0.641	0.699	0.269	8.057	2,141	0.143	0.223	0.139	2.779	0.236	0.368	-1.266	0.759	2.125	0.645
362SGT200-54	0.0566	0.437	1.487	1.098	0.556	1.585	0.178	0.639	0.929	0.365	10.915	3,372	0.178	0.503	0.178	3.572	0.467	0.461	-1.260	0.756	2.123	0.648
362SGT200-68	0.0713	0.550	1.872	1.389	0.698	1.589	0.222	0.636	1.239	0.500	14.966	4,846	0.222	1.177	0.222	4.551	0.932	0.578	-1.253	0.753	2.122	0.651
362SGT200-97	0.1017	0.783	2.665	1.999	0.990	1.598	0.311	0.630	1.923	0.819	24.519	6,912	0.311	4.412	0.311	6.400	2.700	0.818	-1.239	0.746	2.118	0.658
362SGT200-118	0.1242	0.954	3.246	2.453	1.201	1.604	0.374	0.626	2.448	1.078	32.279	8,428	0.374	7.723	0.374	7.723	4.888	0.992	-1.229	0.740	2.115	0.662
400SGT150-33	0.0346	0.246	0.837	0.666	0.311	1.646	0.052	0.458	0.554	0.198	5.932	922	0.052	0.118	0.047	1.223	0.098	0.161	-0.823	0.513	1.896	0.812
400SGT150-43	0.0451	0.320	1.090	0.870	0.405	1.648	0.067	0.456	0.759	0.292	8.756	2,041	0.067	0.279	0.065	1.644	0.217	0.209	-0.818	0.511	1.896	0.814
400SGT150-54	0.0566	0.402	1.367	1.094	0.506	1.651	0.083	0.454	0.999	0.393	11.759	3,372	0.083	0.602	0.083	2.100	0.429	0.261	-0.814	0.508	1.896	0.816
400SGT150-68	0.0713	0.505	1.720	1.383	0.635	1.654	0.103	0.451	1.320	0.532	15.936	5,348	0.103	1.347	0.103	2.652	0.856	0.326	-0.807	0.505	1.895	0.818
400SGT150-97	0.1017	0.720	2.449	1.984	0.899	1.661	0.143	0.445	1.984	0.849	25.422	7,628	0.143	3.710	0.143	3.710	2.481	0.458	-0.795	0.498	1.894	0.824
400SGT150-118	0.1242	0.876	2.982	2.430	1.090	1.665	0.171	0.441	2.430	1.090	32.639	9,300	0.171	4.459	0.171	4.459	4.491	0.551	-0.786	0.493	1.894	0.828
400SGT200-33	0.0346	0.280	0.954	0.822	0.384	1.712	0.114	0.637	0.634	0.195	5.849	922	0.114	0.093	0.101	2.063	0.112	0.352	-1.229	0.744	2.201	0.688
400SGT200-43	0.0451	0.365	1.243	1.074	0.500	1.715	0.147	0.635	0.866	0.309	9.251	2,041	0.147	0.225	0.141	2.791	0.248	0.457	-1.224	0.741	2.200	0.690
400SGT200-54	0.0566	0.458	1.559	1.352	0.625	1.718	0.183	0.633	1.147	0.417	12.483	3,372	0.183	0.501	0.183	3.592	0.489	0.572	-1.219	0.739	2.199	0.693
400SGT200-68	0.0713	0.577	1.963	1.709	0.785	1.722	0.229	0.630	1.527	0.569	17.044	5,348	0.229	1.165	0.229	4.600	0.977	0.717	-1.212	0.735	2.198	0.696
400SGT200-97	0.1017	0.821	2.795	2.457	1.113	1.730	0.320	0.624	2.364	0.927	27.754	7,628	0.320	4.295	0.320	6.481	2.832	1.014	-1.199	0.728	2.195	0.702
400SGT200-118	0.1242	1.000	3.404	3.012	1.351	1.735	0.384	0.620	3.005	1.217	36.426	9,300	0.384	7.820	0.384	7.820	5.126	1.228	-1.189	0.723	2.193	0.706

[1] I_y and M_{ya} are based on the web element in tension.
[2] I_y and M_{ya} are based on the web element in compression.
[3] Web height to thickness ratio exceeds 200. Web stiffeners are required at all support points and concentrated loads.

Refer to Important Table Notes on Page 19

SigmaTrak® Section Properties																							
Section (All 50 ksi)	Design Thickness	Gross Properties							Effective Properties								Torsional					
		Area	Weight	I_x	S_x	R_x	I_y	R_y	I_{xe}	S_{xe}	M_a	V_{ag}	I_{ye} [1]	M_{ya} [1]	I_{ye} [2]	M_{ya} [2]	Jx1000	C_w	X_o	m	R_o	ß
	(in)	(in^2)	(lb/ft)	(in^4)	(in^3)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in^4)	(in-k)	(in^4)	(in-k)	(in^4)	(in^6)	(in)	(in)	(in)	
550SGT150-33	0.0346	0.298	1.013	1.363	0.472	2.139	0.056	0.433	1.175	0.265	7.940	670	0.056	0.121	0.049	1.233	0.119	0.330	-0.715	0.460	2.297	0.903
550SGT150-43	0.0451	0.388	1.320	1.778	0.613	2.141	0.072	0.431	1.576	0.451	13.491	1,484	0.072	0.287	0.068	1.662	0.263	0.427	-0.711	0.457	2.297	0.904
550SGT150-54	0.0566	0.486	1.656	2.235	0.767	2.143	0.089	0.428	2.055	0.618	18.491	2,934	0.089	0.597	0.088	2.130	0.519	0.532	-0.707	0.455	2.297	0.905
550SGT150-68	0.0713	0.612	2.084	2.820	0.964	2.146	0.111	0.426	2.699	0.827	24.765	5,350	0.111	1.281	0.111	2.715	1.038	0.664	-0.702	0.452	2.297	0.907
550SGT150-97	0.1017	0.872	2.968	4.035	1.365	2.151	0.154	0.420	4.035	1.298	38.851	10,488	0.154	3.827	0.154	3.827	3.007	0.929	-0.691	0.445	2.298	0.910
550SGT150-118	0.1242	1.062	3.615	4.932	1.655	2.155	0.184	0.416	4.932	1.655	49.564	12,788	0.184	4.598	0.184	4.598	5.444	1.116	-0.683	0.441	2.298	0.912
550SGT200-33	0.0346	0.332	1.131	1.648	0.570	2.227	0.124	0.611	1.323	0.266	7.955	670	0.124	0.097	0.104	2.079	0.133	0.717	-1.089	0.680	2.553	0.818
550SGT200-43	0.0451	0.433	1.473	2.152	0.742	2.229	0.161	0.609	1.783	0.445	13.324	1,484	0.161	0.233	0.146	2.821	0.294	0.931	-1.085	0.677	2.553	0.819
550SGT200-54	0.0566	0.543	1.848	2.705	0.929	2.232	0.200	0.607	2.321	0.654	19.589	2,934	0.200	0.498	0.193	3.644	0.580	1.163	-1.080	0.675	2.553	0.821
550SGT200-68	0.0713	0.684	2.327	3.415	1.167	2.235	0.249	0.604	3.071	0.882	26.403	5,350	0.249	1.130	0.249	4.688	1.159	1.457	-1.074	0.672	2.552	0.823
550SGT200-97	0.1017	0.974	3.314	4.894	1.655	2.242	0.349	0.598	4.713	1.408	42.161	10,488	0.349	3.983	0.349	6.723	3.357	2.053	-1.062	0.665	2.552	0.827
550SGT200-118	0.1242	1.186	4.037	5.987	2.010	2.247	0.418	0.594	5.963	1.830	54.787	12,788	0.418	7.608	0.418	8.110	6.080	2.481	-1.053	0.660	2.551	0.830
600SGT150-33	0.0346	0.315	1.072	1.666	0.531	2.300	0.057	0.425	1.391	0.273	8.187	614	0.057	0.122	0.049	1.235	0.126	0.401	-0.686	0.444	2.437	0.921
600SGT150-43	0.0451	0.410	1.397	2.174	0.690	2.302	0.073	0.423	1.936	0.431	12.915	1,361	0.073	0.289	0.068	1.666	0.278	0.519	-0.682	0.442	2.438	0.922
600SGT150-54	0.0566	0.515	1.752	2.732	0.864	2.304	0.091	0.420	2.543	0.630	18.872	2,690	0.091	0.601	0.089	2.137	0.550	0.647	-0.678	0.440	2.438	0.923
600SGT150-68	0.0713	0.648	2.205	3.446	1.085	2.306	0.113	0.418	3.310	0.911	27.263	5,350	0.113	1.266	0.113	2.726	1.098	0.807	-0.673	0.437	2.438	0.924
600SGT150-97	0.1017	0.923	3.141	4.928	1.537	2.311	0.157	0.412	4.928	1.464	43.837	10,885	0.157	3.802	0.157	3.856	3.182	1.128	-0.662	0.430	2.439	0.926
600SGT150-118	0.1242	1.124	3.826	6.021	1.865	2.314	0.187	0.408	6.021	1.865	55.825	13,950	0.187	4.632	0.187	4.632	5.762	1.355	-0.654	0.426	2.439	0.928
600SGT200-33	0.0346	0.350	1.190	2.004	0.638	2.394	0.127	0.602	1.626	0.289	8.659	614	0.127	0.097	0.104	2.082	0.140	0.872	-1.050	0.661	2.683	0.847
600SGT200-43	0.0451	0.456	1.550	2.615	0.830	2.396	0.164	0.600	2.190	0.482	14.434	1,361	0.164	0.235	0.147	2.828	0.309	1.132	-1.046	0.658	2.682	0.848
600SGT200-54	0.0566	0.571	1.944	3.287	1.040	2.399	0.204	0.598	2.831	0.743	22.252	2,690	0.204	0.502	0.195	3.655	0.610	1.415	-1.041	0.656	2.682	0.849
600SGT200-68	0.0713	0.719	2.448	4.149	1.306	2.402	0.255	0.595	3.739	0.998	29.890	5,350	0.255	1.122	0.254	4.707	1.219	1.771	-1.035	0.653	2.682	0.851
600SGT200-97	0.1017	1.025	3.487	5.941	1.853	2.408	0.356	0.590	5.724	1.586	47.481	10,885	0.356	3.913	0.356	6.784	3.533	2.495	-1.023	0.646	2.682	0.854
600SGT200-118	0.1242	1.248	4.248	7.264	2.250	2.412	0.428	0.585	7.234	2.055	61.535	13,950	0.428	7.453	0.428	8.183	6.397	3.013	-1.015	0.641	2.682	0.857
800SGT150-33 [3]	0.0346	0.384	1.308	3.297	0.796	2.929	0.060	0.396	2.690	0.369	11.050	461	0.060	0.125	0.050	1.241	0.153	0.768	-0.590	0.392	3.014	0.962
800SGT150-43	0.0451	0.501	1.704	4.299	1.036	2.931	0.078	0.394	3.762	0.587	17.589	1,021	0.078	0.295	0.070	1.678	0.339	0.994	-0.586	0.390	3.014	0.962
800SGT150-54	0.0566	0.628	2.137	5.398	1.297	2.932	0.096	0.392	4.985	0.868	25.994	2,017	0.096	0.613	0.092	2.155	0.671	1.237	-0.583	0.387	3.015	0.963
800SGT150-68	0.0713	0.791	2.691	6.805	1.629	2.934	0.120	0.389	6.596	1.275	38.163	4,033	0.120	1.264	0.118	2.755	1.340	1.542	-0.578	0.385	3.015	0.963
800SGT150-97	0.1017	1.126	3.833	9.718	2.310	2.937	0.166	0.384	9.718	2.205	66.007	10,885	0.166	3.626	0.166	3.940	3.883	2.150	-0.569	0.379	3.016	0.964
800SGT150-118	0.1242	1.372	4.670	11.860	2.804	2.940	0.198	0.380	11.860	2.804	83.964	16,182	0.198	4.733	0.198	4.733	7.033	2.578	-0.562	0.375	3.017	0.965
800SGT200-33 [3]	0.0346	0.419	1.425	3.885	0.938	3.046	0.136	0.569	2.987	0.376	11.269	461	0.136	0.100	0.106	2.092	0.167	1.676	-0.919	0.594	3.232	0.919
800SGT200-43	0.0451	0.546	1.857	5.068	1.221	3.047	0.175	0.567	4.188	0.603	18.044	1,021	0.175	0.241	0.150	2.847	0.370	2.173	-0.916	0.592	3.232	0.920
800SGT200-54	0.0566	0.685	2.330	6.365	1.530	3.049	0.218	0.565	5.566	0.897	26.856	2,017	0.218	0.515	0.200	3.687	0.731	2.713	-0.911	0.590	3.232	0.920
800SGT200-68	0.0713	0.862	2.933	8.027	1.922	3.052	0.272	0.562	7.388	1.330	39.816	4,033	0.272	1.107	0.263	4.759	1.461	3.394	-0.906	0.587	3.233	0.921
800SGT200-97	0.1017	1.228	4.179	11.475	2.728	3.057	0.380	0.556	11.090	2.352	70.425	10,885	0.380	3.722	0.380	6.922	4.234	4.770	-0.895	0.581	3.233	0.923
800SGT200-118	0.1242	1.496	5.092	14.013	3.314	3.060	0.456	0.552	13.944	3.061	91.645	16,182	0.456	7.013	0.456	8.403	7.669	5.753	-0.888	0.576	3.234	0.925

[1] I_y and M_{ya} are based on the web element in tension.
[2] I_y and M_{ya} are based on the web element in compression.
[3] Web height to thickness ratio exceeds 200. Web stiffeners are required at all support points and concentrated loads.