ICC-ES Evaluation Report

ESR-2281*

Issued October 1, 2008

This report is subject to re-examination in one year.

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DIVISION: 05—METALS
Section: 05400—Cold-Formed Metal Framing
Section: 05410—Load-Bearing Metal Studs

DIVISION: 09—FINISHES
Section: 09110—Non-Load-Bearing Wall Framing

REPORT HOLDER:

TELLING INDUSTRIES
2105 LARRICK ROAD
CAMBRIDGE, OHIO 43725
(740) 435-8900
www.tellingindustries.com

EVALUATION SUBJECT:

METAL FRAMING

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Property evaluated:

Structural

2.0 USES

Telling Industries metal framing is used for nonload-bearing interior walls, curtain walls, load-bearing walls, floor joists, ceiling joists and furring.

3.0 DESCRIPTION

3.1 General:

The metal framing members described in this report are factory-formed from coils of steel at the Telling Industries facilities in Kingman, Arizona, Cambridge, Ohio and Osceola, Arkansas. The C-sections (studs) are manufactured with and without web punch-outs. When provided, punch-outs have a width between $^3/_4$ inch (19 mm) and $1^1/_2$ inches (38 mm) but in no case greater than one-half the member web height (d/2); and a length of 4 inches (102 mm). The punch-outs are located along the centerline of the webs of the studs with a minimum center-to-center spacing of 24 inches (610 mm). The minimum distance between the end of the stud and the near edge of the web punch-out is 10 inches (254 mm). The values for studs in each of the tables of this report are for studs with punch-outs unless otherwise noted. See Tables 1 through 4 and Figure 1 for recognized profiles and section names.

C-sections with 1.25-inch (32 mm) flanges may have indentations on the flanges. All other surfaces are flat, smooth surfaces. All surfaces of all other members are flat and smooth.

3.2 Materials:

Telling Industries metal framing members are cold-formed from steel coils conforming to ASTM A 1003 ST33H or ASTM A 1003 ST50H for members with a thickness of 33 mils or more, and ASTM A 1003 NS33 for members with a thickness of less than 33 mils [only for interior nonload-bearing studs with a 5 psf (240 Pa) maximum transverse load]. The steel is hot-dipped galvanized with a minimum galvanization coating designation of G60 for all studs, except that the galvanization coating designation may be G40 for interior nonload-bearing studs with a 5 psf (240 Pa) maximum transverse load. The base-metal thickness is specified in Tables 1 through 5.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The section properties indicated in Tables 1 through 4 have been determined in accordance with the North American Specification for Design of Cold-formed Steel Structural Members, including 2004 Supplement (AISI-NAS). The allowable moments, M_a, as indicated in Tables 1 through 4, are for use with Allowable Stress Design (ASD), and are for flexural members installed with the compression flange continuously braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with AISI-NAS. Allowable concentrated loads and reactions based on web crippling are in Tables 7 and 8. The design of flexural members must address combined bending and web crippling, and combined bending and shear, as applicable, in accordance with the AISI-NAS.

C-sections (studs) listed in Table 9 and channels (tracks) qualify for use with the prescriptive requirements of the IRC. For use of all other sections under the IRC, the cold-formed steel framing members must be limited to engineered structures, in accordance with IRC Section R301.1.3.

4.2 Installation:

The framing members must be installed in accordance with the code, the approved plans and this report. If there is a conflict between the submitted plans and this report, this report governs. The approved plans must be made available at the jobsite at all times.

***Revised March 2009**

5.0 CONDITIONS OF USE

The Telling Industries metal framing described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The cold-formed steel members are installed in accordance with the code, the approved plans and this report.

5.2 Minimum uncoated base-metal thickness of the cold-formed steel members as delivered to the jobsite are at least 95 percent of the design base-metal thickness noted in Tables 1 through 4.

5.3 Complete plans and calculations verifying compliance with this report must be submitted to the code official for each project at the time of permit application. The calculations and drawings must be prepared and sealed by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.4 Studs and tracks having a galvanized coating weight of less than G60 must be limited to use as nonload-bearing interior wall framing subject to a maximum transverse load of 5 psf (239 Pa).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members (AC46), dated February 2007 (editorially revised April 2008).

7.0 IDENTIFICATION

At a spacing not exceeding 48 inches (1219 mm) on center, each cold-formed steel member is stamped with the Telling Industries name or initials (TI); lot number; the section name as described in Tables 1 through 4; the evaluation report number (ICC-ES ESR-2281); the minimum uncoated base-metal thickness in mils or decimal inches; the minimum specified yield strength [if greater than 33 ksi (228 MPa)]; and the galvanization coating designation (if G60 or greater).

TABLE 1—C-SECTION (STUD) SECTION PROPERTIES[1,2,3,4,5,6,7,8]

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
162S125-18	0.080	0.27	0.038	0.686	0.016	0.447	0.034	0.031	0.61	302	0.962	---	---	---	---	---	0.009	0.009	-1.061	1.340	0.373
162S125-27	0.120	0.41	0.056	0.682	0.023	0.443	0.055	0.053	1.05	494	0.903	---	---	---	---	---	0.032	0.013	-1.049	1.327	0.375
162S125-30	0.131	0.45	0.061	0.681	0.026	0.441	0.060	0.060	1.19	543	0.889	---	---	---	---	---	0.043	0.014	-1.046	1.323	0.376
162S125-33	0.145	0.49	0.067	0.679	0.028	0.440	0.066	0.069	1.37	601	0.873	---	---	---	---	---	0.058	0.015	-1.042	1.319	0.376
250S125-18	0.097	0.33	0.099	1.014	0.019	0.439	0.089	0.059	1.17	258	1.391	---	---	---	---	---	0.011	0.023	-0.930	1.444	0.585
250S125-27	0.144	0.49	0.147	1.009	0.027	0.434	0.144	0.097	1.92	685	1.343	---	---	---	---	---	0.039	0.033	-0.919	1.432	0.589
250S125-30	0.159	0.54	0.161	1.008	0.030	0.433	0.159	0.110	2.17	832	1.329	---	---	---	---	---	0.052	0.036	-0.915	1.429	0.590
250S125-33	0.176	0.60	0.178	1.006	0.033	0.431	0.175	0.125	2.48	975	1.313	---	---	---	---	---	0.070	0.039	-0.911	1.425	0.591
250S125-43	0.227	0.77	0.228	1.001	0.041	0.426	0.225	0.177	3.49	1265	1.266	---	---	---	---	---	0.154	0.049	-0.899	1.412	0.594
250S125-54	0.280	0.95	0.277	0.994	0.049	0.419	0.277	0.218	4.98	1553	1.260	0.274	0.209	6.25	2353	1.280	0.299	0.059	-0.890	1.398	0.595
250S125-68	0.345	1.18	0.334	0.984	0.057	0.408	0.334	0.266	6.30	1891	1.252	0.334	0.262	7.84	2866	1.261	0.585	0.069	-0.880	1.381	0.594
250S137-33	0.197	0.67	0.203	1.015	0.052	0.515	0.203	0.158	3.11	975	1.268	---	---	---	---	---	0.079	0.075	-1.170	1.633	0.486
250S137-43	0.255	0.87	0.261	1.010	0.067	0.511	0.261	0.205	4.53	1265	1.260	---	---	---	---	---	0.173	0.094	-1.158	1.620	0.489
250S137-54	0.316	1.07	0.318	1.004	0.080	0.504	0.318	0.255	5.76	1553	1.250	0.318	0.244	8.22	2353	1.274	0.337	0.113	-1.150	1.608	0.488
250S137-68	0.390	1.33	0.386	0.994	0.095	0.495	0.386	0.309	7.19	1891	1.250	0.386	0.308	10.65	2866	1.251	0.661	0.134	-1.142	1.593	0.486
250S162-33	0.223	0.76	0.235	1.027	0.087	0.624	0.235	0.180	3.55	975	1.274	---	---	---	---	---	0.089	0.144	-1.501	1.923	0.390
250S162-43	0.289	0.98	0.302	1.022	0.111	0.620	0.302	0.240	5.22	1265	1.253	---	---	---	---	---	0.196	0.182	-1.489	1.909	0.392
250S162-54	0.358	1.22	0.370	1.016	0.135	0.613	0.370	0.296	6.57	1553	1.250	0.370	0.284	9.42	2353	1.275	0.383	0.219	-1.482	1.898	0.391
250S162-68	0.443	1.51	0.45	1.007	0.162	0.605	0.45	0.36	8.21	1891	1.25	0.45	0.357	12.11	2866	1.255	0.752	0.262	-1.474	1.885	0.389
350S125-18	0.115	0.39	0.215	1.366	0.021	0.423	0.203	0.072	1.42	180	2.175	---	---	---	---	---	0.014	0.049	-0.819	1.648	0.753
350S125-27	0.173	0.59	0.320	1.361	0.030	0.418	0.315	0.130	2.57	614	2.020	---	---	---	---	---	0.046	0.071	-0.809	1.637	0.756
350S125-30	0.190	0.65	0.351	1.359	0.033	0.417	0.346	0.150	2.96	824	1.979	---	---	---	---	---	0.062	0.077	-0.805	1.634	0.757
350S125-33	0.210	0.72	0.387	1.358	0.036	0.415	0.382	0.175	3.45	1024	1.935	---	---	---	---	---	0.084	0.085	-0.802	1.630	0.758
350S125-43	0.272	0.93	0.498	1.352	0.046	0.410	0.495	0.258	5.10	1739	1.818	---	---	---	---	---	0.184	0.106	-0.790	1.619	0.762
350S125-54	0.337	1.15	0.608	1.344	0.055	0.402	0.608	0.328	6.49	2253	1.778	0.604	0.308	9.22	3372	1.834	0.360	0.127	-0.781	1.605	0.763
350S125-68	0.417	1.42	0.739	1.332	0.064	0.391	0.737	0.409	8.08	2774	1.753	0.737	0.400	11.97	4202	1.772	0.706	0.151	-0.770	1.587	0.765
350S137-33	0.232	0.79	0.441	1.380	0.059	0.503	0.441	0.223	4.41	1024	1.848	---	---	---	---	---	0.093	0.150	-1.040	1.800	0.666
350S137-43	0.300	1.02	0.568	1.375	0.075	0.498	0.568	0.307	6.07	1739	1.785	---	---	---	---	---	0.204	0.189	-1.029	1.788	0.669
350S137-54	0.372	1.27	0.696	1.367	0.090	0.492	0.696	0.385	7.61	2253	1.761	0.696	0.366	10.95	3372	1.808	0.398	0.228	-1.020	1.775	0.670
350S137-68	0.461	1.57	0.849	1.357	0.107	0.482	0.849	0.474	9.36	2774	1.750	0.849	0.472	14.12	4202	1.755	0.782	0.272	-1.010	1.759	0.670
350S162-33	0.258	0.88	0.508	1.404	0.098	0.617	0.508	0.257	5.08	1024	1.845	---	---	---	---	---	0.103	0.273	-1.351	2.044	0.563
350S162-43	0.334	1.14	0.654	1.400	0.125	0.612	0.654	0.357	7.05	1739	1.780	---	---	---	---	---	0.227	0.345	-1.339	2.031	0.565
350S162-54	0.415	1.41	0.804	1.392	0.152	0.606	0.804	0.447	8.83	2253	1.759	0.804	0.426	12.74	3372	1.806	0.443	0.418	-1.331	2.019	0.566
350S162-68	0.515	1.75	0.985	1.383	0.184	0.597	0.985	0.551	10.89	2774	1.750	0.985	0.549	16.44	4202	1.754	0.872	0.503	-1.321	2.004	0.565
350S200-33	0.292	0.99	0.598	1.431	0.175	0.773	0.597	0.283	5.59	1024	1.899	---	---	---	---	---	0.117	0.535	-1.789	2.418	0.452
350S200-43	0.379	1.29	0.771	1.426	0.224	0.768	0.771	0.410	8.09	1739	1.802	---	---	---	---	---	0.257	0.679	-1.777	2.405	0.454
350S200-54	0.471	1.60	0.950	1.420	0.274	0.762	0.950	0.530	10.47	2253	1.758	0.950	0.470	14.07	3372	1.864	0.503	0.827	-1.769	2.393	0.453
350S200-68	0.586	1.99	1.167	1.411	0.333	0.754	1.167	0.655	12.95	2774	1.750	1.167	0.638	19.10	4202	1.776	0.993	1.001	-1.761	2.379	0.452
350S250-43	0.424	1.44	0.906	1.461	0.380	0.946	0.906	0.431	8.52	1739	1.893	---	---	---	---	---	0.288	1.141	-2.251	2.846	0.374
350S250-54	0.528	1.80	1.118	1.455	0.467	0.940	1.118	0.559	11.04	2253	1.854	1.113	0.494	14.78	3372	1.956	0.564	1.394	-2.243	2.834	0.374
350S250-68	0.657	2.24	1.376	1.447	0.57	0.931	1.376	0.747	14.77	2774	1.784	1.376	0.661	19.78	4202	1.885	1.114	1.695	-2.235	2.82	0.372
362S125-18	0.118	0.40	0.234	1.409	0.021	0.421	0.221	0.075	1.48	173	2.262	---	---	---	---	---	0.014	0.053	-0.807	1.677	0.768
362S125-27	0.176	0.60	0.347	1.404	0.031	0.416	0.342	0.135	2.67	592	2.102	---	---	---	---	---	0.047	0.077	-0.797	1.667	0.771
362S125-30	0.194	0.66	0.381	1.402	0.033	0.415	0.376	0.156	3.08	794	2.059	---	---	---	---	---	0.063	0.084	-0.794	1.664	0.772
362S125-33	0.215	0.73	0.421	1.400	0.037	0.413	0.415	0.182	3.59	1024	2.013	---	---	---	---	---	0.086	0.092	-0.790	1.660	0.774
362S125-43	0.278	0.95	0.540	1.395	0.046	0.408	0.537	0.269	5.31	1739	1.892	---	---	---	---	---	0.188	0.115	-0.779	1.649	0.777
362S125-54	0.344	1.17	0.661	1.386	0.055	0.400	0.661	0.343	6.78	2341	1.849	0.656	0.321	9.62	3372	1.908	0.367	0.138	-0.769	1.635	0.779
362S125-68	0.426	1.45	0.803	1.374	0.065	0.389	0.802	0.430	8.51	2884	1.816	0.802	0.418	12.52	4370	1.842	0.721	0.164	-0.758	1.617	0.780
362S137-33	0.236	0.80	0.479	1.424	0.059	0.501	0.479	0.232	4.59	1024	1.923	---	---	---	---	---	0.094	0.162	-1.026	1.826	0.684
362S137-43	0.306	1.04	0.616	1.419	0.075	0.497	0.616	0.320	6.32	1739	1.857	---	---	---	---	---	0.207	0.204	-1.015	1.814	0.687
362S137-54	0.379	1.29	0.756	1.411	0.091	0.490	0.756	0.402	7.94	2341	1.830	0.756	0.381	11.42	3372	1.881	0.405	0.246	-1.006	1.801	0.688
362S137-68	0.470	1.60	0.922	1.401	0.109	0.480	0.922	0.498	9.84	2884	1.813	0.922	0.493	14.77	4370	1.823	0.797	0.294	-0.996	1.784	0.689

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

Table 1 continued on next page.

TABLE 1—C-SECTION (STUD) SECTION PROPERTIES[1,2,3,4,5,6,7,8] (Continued)

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
362S162-33	0.262	0.89	0.551	1.450	0.099	0.616	0.551	0.268	5.29	1024	1.919	---	---	---	---	---	0.105	0.293	-1.335	2.065	0.582
362S162-43	0.340	1.16	0.710	1.445	0.127	0.611	0.710	0.372	7.34	1739	1.851	---	---	---	---	---	0.230	0.371	-1.323	2.052	0.585
362S162-54	0.422	1.44	0.873	1.438	0.154	0.604	0.873	0.466	9.22	2341	1.828	0.873	0.444	13.28	3372	1.877	0.451	0.449	-1.314	2.040	0.585
362S162-68	0.524	1.78	1.069	1.429	0.186	0.596	1.069	0.579	11.43	2884	1.813	1.069	0.574	17.18	4370	1.822	0.887	0.540	-1.305	2.024	0.585
362S200-33	0.297	1.01	0.648	1.478	0.177	0.772	0.647	0.294	5.81	1024	1.974	---	---	---	---	---	0.118	0.571	-1.770	2.432	0.470
362S200-43	0.385	1.31	0.836	1.474	0.227	0.767	0.836	0.427	8.43	1739	1.873	---	---	---	---	---	0.261	0.726	-1.758	2.419	0.472
362S200-54	0.479	1.63	1.030	1.467	0.277	0.761	1.030	0.553	10.93	2341	1.826	1.030	0.490	14.66	3372	1.936	0.511	0.884	-1.750	2.407	0.471
362S200-68	0.595	2.02	1.265	1.458	0.337	0.753	1.265	0.687	13.58	2884	1.813	1.265	0.666	19.95	4370	1.844	1.008	1.070	-1.741	2.393	0.470
362S250-43	0.430	1.46	0.980	1.510	0.385	0.946	0.980	0.449	8.88	1739	1.966	---	---	---	---	---	0.292	1.219	-2.230	2.854	0.390
362S250-54	0.535	1.82	1.210	1.504	0.473	0.940	1.210	0.582	11.51	2341	1.924	1.205	0.514	15.40	3372	2.030	0.571	1.489	-2.222	2.843	0.389
362S250-68	0.666	2.27	1.490	1.496	0.578	0.931	1.490	0.782	15.46	2884	1.848	1.490	0.689	20.63	4370	1.956	1.129	1.812	-2.213	2.829	0.388
400S125-18[1]	0.125	0.42	0.294	1.536	0.021	0.414	0.281	0.083	1.64	156	2.524	---	---	---	---	---	0.015	0.066	-0.774	1.769	0.809
400S125-27	0.187	0.64	0.438	1.531	0.031	0.410	0.431	0.151	2.97	533	2.349	---	---	---	---	---	0.050	0.096	-0.764	1.759	0.811
400S125-30	0.206	0.70	0.481	1.529	0.034	0.408	0.474	0.174	3.44	715	2.303	---	---	---	---	---	0.067	0.105	-0.761	1.756	0.812
400S125-33	0.228	0.77	0.531	1.527	0.038	0.407	0.524	0.203	4.01	976	2.252	---	---	---	---	---	0.091	0.115	-0.757	1.752	0.813
400S125-43	0.295	1.00	0.682	1.521	0.048	0.402	0.680	0.301	5.96	1739	2.117	---	---	---	---	---	0.200	0.145	-0.746	1.742	0.816
400S125-54	0.365	1.24	0.835	1.512	0.057	0.394	0.835	0.387	7.65	2603	2.064	0.830	0.361	10.81	3372	2.133	0.390	0.174	-0.737	1.728	0.818
400S125-68	0.452	1.54	1.017	1.499	0.066	0.383	1.015	0.492	9.72	3215	2.016	1.015	0.474	14.18	4871	2.056	0.767	0.206	-0.725	1.709	0.820
400S137-33	0.249	0.85	0.603	1.556	0.061	0.496	0.603	0.259	5.12	976	2.152	---	---	---	---	---	0.099	0.200	-0.987	1.908	0.732
400S137-43	0.323	1.10	0.776	1.551	0.078	0.491	0.776	0.359	7.09	1739	2.076	---	---	---	---	---	0.219	0.253	-0.976	1.897	0.735
400S137-54	0.401	1.36	0.953	1.542	0.094	0.484	0.953	0.453	8.96	2603	2.042	0.953	0.428	12.82	3372	2.101	0.428	0.305	-0.967	1.884	0.737
400S137-68	0.497	1.69	1.165	1.531	0.112	0.475	1.165	0.567	11.21	3215	2.011	1.165	0.558	16.70	4871	2.033	0.842	0.365	-0.956	1.866	0.738
400S162-33	0.275	0.94	0.692	1.586	0.103	0.611	0.692	0.299	5.91	976	2.144	---	---	---	---	---	0.110	0.358	-1.288	2.133	0.635
400S162-43	0.357	1.21	0.892	1.581	0.131	0.606	0.892	0.417	8.23	1739	2.066	---	---	---	---	---	0.242	0.453	-1.276	2.121	0.638
400S162-54	0.443	1.51	1.098	1.574	0.159	0.600	1.098	0.526	10.39	2603	2.036	1.098	0.498	14.90	3372	2.095	0.473	0.550	-1.268	2.108	0.638
400S162-68	0.550	1.87	1.346	1.564	0.192	0.591	1.346	0.658	13.00	3215	2.010	1.346	0.648	19.41	4871	2.029	0.933	0.663	-1.258	2.092	0.639
400S200-33	0.310	1.05	0.812	1.619	0.183	0.769	0.812	0.328	6.49	976	2.200	---	---	---	---	---	0.124	0.689	-1.715	2.481	0.522
400S200-43	0.402	1.37	1.047	1.615	0.235	0.764	1.047	0.478	9.45	1739	2.086	---	---	---	---	---	0.272	0.876	-1.703	2.468	0.524
400S200-54	0.500	1.70	1.292	1.608	0.287	0.758	1.292	0.623	12.30	2603	2.031	1.292	0.549	16.43	3372	2.156	0.534	1.068	-1.695	2.456	0.524
400S200-68	0.622	2.12	1.589	1.599	0.349	0.750	1.589	0.780	15.40	3215	2.009	1.589	0.751	22.48	4871	2.051	1.054	1.295	-1.686	2.441	0.523
400S250-43	0.447	1.52	1.224	1.655	0.399	0.945	1.224	0.503	9.93	1739	2.185	---	---	---	---	---	0.303	1.473	-2.168	2.887	0.436
400S250-54	0.556	1.89	1.512	1.649	0.490	0.938	1.512	0.653	12.90	2603	2.138	1.506	0.576	17.24	3372	2.256	0.594	1.801	-2.160	2.875	0.435
400S250-68	0.693	2.36	1.864	1.640	0.599	0.929	1.864	0.883	17.45	3215	2.046	1.864	0.775	23.19	4871	2.171	1.174	2.193	-2.151	2.860	0.434
550S125-27	0.229	0.78	0.938	2.023	0.034	0.385	0.898	0.246	4.86	382	3.150	---	---	---	---	---	0.061	0.202	-0.657	2.162	0.908
550S125-30	0.252	0.86	1.031	2.021	0.037	0.384	0.996	0.286	5.65	512	3.083	---	---	---	---	---	0.082	0.220	-0.654	2.159	0.908
550S125-33	0.279	0.95	1.139	2.019	0.041	0.382	1.111	0.335	6.62	699	3.012	---	---	---	---	---	0.112	0.242	-0.651	2.156	0.909
550S125-43	0.362	1.23	1.468	2.013	0.052	0.377	1.458	0.500	9.88	1550	2.834	---	---	---	---	---	0.246	0.304	-0.641	2.146	0.911
550S125-54	0.450	1.53	1.805	2.002	0.061	0.369	1.805	0.647	12.79	2739	2.764	1.791	0.606	18.13	3093	2.845	0.481	0.366	-0.631	2.132	0.912
550S125-68	0.559	1.90	2.209	1.987	0.072	0.358	2.205	0.801	18.94	4347	2.753	2.205	0.791	23.68	5350	2.765	0.948	0.437	-0.620	2.112	0.914
550S137-33	0.301	1.02	1.283	2.064	0.067	0.472	1.283	0.453	8.95	699	2.781	---	---	---	---	---	0.12	0.41	-0.86	2.28	0.86
550S137-43	0.391	1.33	1.655	2.059	0.085	0.467	1.655	0.592	13.08	1550	2.767	---	---	---	---	---	0.26	0.51	-0.85	2.28	0.86
550S137-54	0.486	1.65	2.039	2.049	0.103	0.460	2.039	0.741	16.77	2739	2.750	2.039	0.714	24.03	3093	2.790	0.52	0.62	-0.84	2.26	0.86
550S137-68	0.604	2.05	2.503	2.036	0.123	0.451	2.503	0.910	21.22	4347	2.750	2.503	0.909	31.42	5350	2.752	1.02	0.75	-0.83	2.24	0.86
550S162-33	0.327	1.11	1.458	2.112	0.113	0.589	1.458	0.512	10.11	699	2.787	---	---	---	---	---	0.13	0.70	-1.13	2.47	0.79
550S162-43	0.424	1.44	1.883	2.107	0.145	0.584	1.883	0.681	14.79	1550	2.757	---	---	---	---	---	0.29	0.89	-1.12	2.46	0.79
550S162-54	0.528	1.80	2.324	2.098	0.176	0.577	2.324	0.845	18.76	2739	2.750	2.324	0.811	26.86	3093	2.796	0.56	1.09	-1.11	2.44	0.79
550S162-68	0.657	2.24	2.861	2.086	0.212	0.568	2.861	1.040	23.72	4347	2.750	2.861	1.031	34.94	5350	2.761	1.11	1.32	-1.10	2.43	0.79
550S200-33	0.362	1.23	1.694	2.164	0.204	0.751	1.678	0.559	11.05	699	2.851	---	---	---	---	---	0.14	1.31	-1.53	2.76	0.69
550S200-43	0.469	1.60	2.189	2.159	0.261	0.746	2.189	0.776	15.33	1550	2.777	---	---	---	---	---	0.32	1.67	-1.52	2.74	0.69
550S200-54	0.585	1.99	2.706	2.152	0.320	0.739	2.706	0.984	21.41	2739	2.750	2.706	0.901	26.98	3093	2.848	0.62	2.04	-1.51	2.73	0.69
550S200-68	0.729	2.48	3.341	2.141	0.389	0.731	3.341	1.215	27.03	4347	2.750	3.341	1.170	38.83	5350	2.794	1.24	2.49	-1.50	2.72	0.70

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

Table 1 continued on next page.

TABLE 1—C-SECTION (STUD) SECTION PROPERTIES[1,2,3,4,5,6,7,8] (Continued)

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
550S200-33	0.362	1.23	1.694	2.164	0.204	0.751	1.678	0.559	11.05	699	2.851	---	---	---	---	---	0.14	1.31	-1.53	2.76	0.69
550S200-43	0.469	1.60	2.189	2.159	0.261	0.746	2.189	0.776	15.33	1550	2.777	---	---	---	---	---	0.32	1.67	-1.52	2.74	0.69
550S200-54	0.585	1.99	2.706	2.152	0.320	0.739	2.706	0.984	21.41	2739	2.750	2.706	0.901	26.98	3093	2.848	0.62	2.04	-1.51	2.73	0.69
550S200-68	0.729	2.48	3.341	2.141	0.389	0.731	3.341	1.215	27.03	4347	2.750	3.341	1.170	38.83	5350	2.794	1.24	2.49	-1.50	2.72	0.70
550S250-43	0.515	1.75	2.524	2.215	0.445	0.930	2.524	0.817	16.15	1550	2.877						0.35	2.81	-1.96	3.10	0.60
550S250-54	0.641	2.18	3.126	2.208	0.547	0.923	3.126	1.033	20.40	2739	2.859	3.084	0.950	28.44	3093	2.948	0.68	3.45	-1.95	3.09	0.60
550S250-68	0.8	2.72	3.866	2.198	0.669	0.914	3.866	1.345	29.28	4347	2.803	3.864	1.233	36.91	5350	2.897	1.356	4.211	-1.939	3.07	0.601
600S125-27[1]	0.243	0.83	1.160	2.183	0.035	0.377	1.097	0.271	5.35	349	3.479	---	---	---	---	---	0.065	0.247	-0.628	2.303	0.926
600S125-30	0.268	0.91	1.275	2.181	0.038	0.376	1.218	0.315	6.22	468	3.405	---	---	---	---	---	0.087	0.270	-0.625	2.300	0.926
600S125-33	0.297	1.01	1.409	2.179	0.042	0.374	1.361	0.369	7.30	638	3.326	---	---	---	---	---	0.118	0.296	-0.622	2.297	0.927
600S125-43	0.385	1.31	1.817	2.173	0.053	0.369	1.807	0.555	10.96	1416	3.126	---	---	---	---	---	0.261	0.373	-0.612	2.287	0.928
600S125-54	0.479	1.63	2.236	2.161	0.063	0.362	2.236	0.727	14.37	2739	3.031	2.220	0.673	20.15	2823	3.137	0.511	0.449	-0.603	2.273	0.930
600S125-68	0.595	2.02	2.740	2.146	0.073	0.351	2.735	0.911	21.53	4347	3.003	2.735	0.898	26.88	5350	3.019	1.008	0.536	-0.592	2.253	0.931
600S137-33	0.318	1.08	1.582	2.229	0.069	0.464	1.548	0.455	8.98	638	3.224	---	---	---	---	---	0.127	0.493	-0.823	2.421	0.884
600S137-43	0.413	1.41	2.042	2.223	0.087	0.459	2.041	0.645	12.74	1416	3.087	---	---	---	---	---	0.280	0.625	-0.813	2.411	0.886
600S137-54	0.514	1.75	2.518	2.213	0.105	0.452	2.518	0.832	16.44	2739	3.013	2.518	0.777	23.26	2823	3.112	0.549	0.757	-0.804	2.398	0.888
600S137-68	0.640	2.18	3.094	2.200	0.125	0.443	3.094	1.031	24.05	4347	3.000	3.094	1.030	30.84	5350	3.002	1.084	0.911	-0.793	2.380	0.889
600S137-97	0.889	3.03	4.188	2.170	0.159	0.422	4.188	1.396	34.48	6911	3.000	4.188	1.396	50.80	10472	3.000	3.066	1.179	-0.770	2.341	0.892
600S162-33	0.344	1.17	1.793	2.282	0.116	0.581	1.793	0.577	11.41	638	3.039	---	---	---	---	---	0.137	0.851	-1.091	2.595	0.823
600S162-43	0.447	1.52	2.316	2.276	0.148	0.576	2.316	0.767	16.68	1416	3.007	---	---	---	---	---	0.303	1.082	-1.081	2.585	0.825
600S162-54	0.556	1.89	2.860	2.267	0.180	0.570	2.860	0.953	21.17	2739	3.000	2.860	0.916	30.33	2823	3.048	0.594	1.318	-1.072	2.572	0.826
600S162-68	0.693	2.36	3.525	2.255	0.218	0.560	3.525	1.175	26.79	4347	3.000	3.525	1.164	39.47	5350	3.011	1.174	1.596	-1.061	2.554	0.828
600S162-97	0.966	3.29	4.797	2.229	0.283	0.541	4.797	1.599	38.37	6911	3.000	4.797	1.599	56.73	10472	3.000	3.329	2.093	-1.039	2.518	0.830
600S200-33	0.379	1.29	2.075	2.340	0.209	0.743	2.058	0.621	12.28	638	3.126	---	---	---	---	---	0.151	1.577	-1.479	2.866	0.734
600S200-43	0.492	1.67	2.683	2.335	0.268	0.739	2.683	0.873	17.24	1416	3.028	---	---	---	---	---	0.334	2.012	-1.468	2.855	0.736
600S200-54	0.613	2.09	3.319	2.327	0.328	0.732	3.319	1.106	24.07	2739	3.000	3.319	1.015	30.40	2823	3.103	0.655	2.461	-1.459	2.842	0.737
600S200-68	0.764	2.60	4.101	2.316	0.400	0.723	4.101	1.367	30.42	4347	3.000	4.101	1.317	43.71	5350	3.047	1.295	2.997	-1.448	2.826	0.737
600S200-97	1.067	3.63	5.612	2.293	0.530	0.705	5.612	1.871	43.49	6911	3.000	5.612	1.871	64.53	10472	3.000	3.679	3.981	-1.427	2.791	0.739
600S250-43	0.537	1.83	3.082	2.396	0.458	0.923	3.082	0.918	18.14	1416	3.134	---	---	---	---	---	0.364	3.379	-1.898	3.193	0.647
600S250-54	0.670	2.28	3.819	2.388	0.562	0.917	3.819	1.159	22.90	2739	3.115	3.766	1.069	32.00	2823	3.207	0.715	4.146	-1.889	3.180	0.647
600S250-68	0.836	2.84	4.727	2.378	0.688	0.908	4.727	1.508	32.82	4347	3.057	4.723	1.386	41.49	5350	3.155	1.416	5.071	-1.878	3.164	0.647
600S250-97	1.169	3.98	6.496	2.357	0.923	0.889	6.496	2.161	48.81	6911	3.003	6.496	2.063	69.38	10472	3.062	4.030	6.798	-1.857	3.130	0.648
800S125-30[1]	0.330	1.12	2.606	2.808	0.040	0.349	2.366	0.430	8.50	347	4.746	---	---	---	---	---	0.107	0.525	-0.533	2.880	0.966
800S125-33[1]	0.366	1.25	2.881	2.806	0.044	0.347	2.656	0.507	10.02	474	4.639	---	---	---	---	---	0.146	0.576	-0.530	2.877	0.966
800S125-43	0.475	1.62	3.721	2.799	0.056	0.342	3.581	0.773	15.27	1051	4.359	---	---	---	---	---	0.322	0.727	-0.521	2.867	0.967
800S125-54	0.592	2.01	4.593	2.786	0.066	0.335	4.566	1.035	20.46	2091	4.2	4.431	0.942	28.21	2091	4.37	0.632	0.877	-0.512	2.852	0.968
800S125-68	0.738	2.51	5.653	2.768	0.078	0.324	5.644	1.375	27.18	4221	4.053	5.632	1.287	38.54	4221	4.179	1.250	1.050	-0.501	2.832	0.969
800S137-33[1]	0.388	1.32	3.198	2.873	0.073	0.435	2.998	0.622	12.30	474	4.495	---	---	---	---	---	0.155	0.948	-0.709	2.991	0.944
800S137-43	0.503	1.71	4.134	2.866	0.093	0.430	4.001	0.896	17.70	1051	4.294	---	---	---	---	---	0.341	1.202	-0.700	2.981	0.945
800S137-54	0.627	2.13	5.110	2.855	0.112	0.423	5.077	1.179	23.29	2091	4.166	4.974	1.083	32.42	2091	4.324	0.670	1.460	-0.691	2.967	0.946
800S137-68	0.782	2.66	6.303	2.839	0.134	0.414	6.303	1.541	30.45	4221	4.046	6.285	1.468	43.96	4221	4.146	1.325	1.762	-0.680	2.948	0.947
800S137-97	1.093	3.72	8.597	2.805	0.169	0.394	8.597	2.149	53.09	8843	4.000	8.597	2.149	64.35	10885	4.000	3.767	2.295	-0.658	2.908	0.949
800S162-33[1]	0.413	1.41	3.582	2.943	0.125	0.550	3.384	0.710	14.03	474	4.464	---	---	---	---	---	0.165	1.615	-0.951	3.142	0.908
800S162-43	0.537	1.83	4.633	2.937	0.160	0.546	4.500	1.019	20.14	1051	4.270	---	---	---	---	---	0.364	2.056	-0.941	3.132	0.910
800S162-54	0.670	2.28	5.736	2.927	0.194	0.539	5.702	1.334	26.36	2091	4.153	5.600	1.229	36.79	2091	4.309	0.715	2.509	-0.932	3.119	0.911
800S162-68	0.836	2.84	7.089	2.913	0.235	0.530	7.089	1.737	34.32	4221	4.043	7.070	1.663	49.80	4221	4.134	1.416	3.047	-0.921	3.101	0.912
800S162-97	1.169	3.98	9.713	2.883	0.305	0.510	9.713	2.428	58.27	8843	4.000	9.713	2.428	72.70	10885	4.000	4.030	4.023	-0.899	3.062	0.914
800S200-33[1]	0.448	1.52	4.096	3.023	0.227	0.712	4.096	0.816	16.12	474	4.402	---	---	---	---	---	0.179	2.945	-1.306	3.369	0.850
800S200-43	0.582	1.98	5.302	3.018	0.292	0.708	5.302	1.293	25.54	1051	4.038	---	---	---	---	---	0.395	3.763	-1.295	3.359	0.851
800S200-54	0.726	2.47	6.573	3.009	0.357	0.701	6.573	1.643	35.75	2091	4.000	6.573	1.499	44.87	2091	4.144	0.775	4.612	-1.286	3.346	0.852
800S200-68	0.907	3.09	8.140	2.996	0.435	0.692	8.140	2.035	45.29	4221	4.000	8.140	1.964	65.21	4221	4.055	1.537	5.631	-1.275	3.329	0.853
800S200-97	1.271	4.32	11.203	2.969	0.576	0.673	11.203	2.801	65.12	8843	4.000	11.203	2.801	96.63	10885	4.000	4.381	7.524	-1.253	3.292	0.855

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

Table 1 continued on next page.

TABLE 1—C-SECTION (STUD) SECTION PROPERTIES[1,2,3,4,5,6,7,8] (Continued)

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
800S250-43	0.627	2.13	6.015	3.097	0.500	0.893	6.015	1.313	25.95	1051	4.219	---	---	---	---	---	0.425	6.320	-1.695	3.641	0.783
800S250-54	0.783	2.66	7.465	3.088	0.614	0.886	7.465	1.712	33.82	2091	4.134	7.378	1.525	45.66	2091	4.323	0.836	7.769	-1.686	3.628	0.784
800S250-68	0.978	3.33	9.261	3.077	0.752	0.877	9.261	2.220	48.33	4221	4.068	9.240	2.059	61.65	4221	4.179	1.658	9.526	-1.674	3.611	0.785
800S250-97	1.372	4.67	12.789	3.053	1.009	0.857	12.789	3.191	72.07	8843	4.003	12.789	3.054	102.70	10885	4.073	4.731	12.838	-1.652	3.575	0.787
1000S137-43[1]	0.593	2.02	7.232	3.491	0.097	0.405	6.727	1.147	22.66	836	5.577	---	---	---	---	---	0.402	1.999	-0.615	3.568	0.970
1000S137-54	0.740	2.52	8.956	3.478	0.117	0.398	8.636	1.526	30.15	1661	5.401	8.393	1.389	41.58	1661	5.613	0.791	2.431	-0.607	3.553	0.971
1000S137-68	0.925	3.15	11.076	3.461	0.140	0.389	11.010	2.029	40.09	3345	5.220	10.732	1.908	57.13	3345	5.373	1.567	2.940	-0.597	3.533	0.971
1000S137-97	1.296	4.41	15.192	3.424	0.177	0.369	15.192	3.038	60.04	8843	5.000	15.192	2.917	87.32	9864	5.102	4.468	3.845	-0.576	3.491	0.973
1000S162-43[1]	0.627	2.13	8.025	3.577	0.168	0.518	7.523	1.302	25.74	836	5.532	---	---	---	---	---	0.425	3.404	-0.836	3.709	0.949
1000S162-54	0.783	2.66	9.950	3.565	0.204	0.511	9.627	1.722	34.02	1661	5.371	9.391	1.572	47.07	1661	5.580	0.836	4.160	-0.827	3.696	0.950
1000S162-68	0.978	3.33	12.325	3.550	0.246	0.502	12.256	2.276	44.98	3345	5.205	11.978	2.154	64.51	3345	5.345	1.658	5.060	-0.817	3.677	0.951
1000S162-97	1.372	4.67	16.967	3.516	0.320	0.483	16.967	3.393	67.06	8843	5.000	16.967	3.269	97.89	9864	5.095	4.731	6.708	-0.795	3.637	0.952
1000S200-43[1]	0.672	2.29	9.085	3.676	0.309	0.677	8.602	1.470	29.05	836	5.535	---	---	---	---	---	0.456	6.189	-1.162	3.914	0.912
1000S200-54	0.839	2.86	11.278	3.666	0.378	0.671	10.953	1.984	39.20	1661	5.338	10.769	1.705	51.05	1661	5.666	0.896	7.595	-1.153	3.901	0.913
1000S200-68	1.050	3.57	13.994	3.652	0.460	0.662	13.920	2.607	51.51	3345	5.188	13.665	2.420	72.46	3345	5.367	1.779	9.291	-1.142	3.883	0.913
1000S200-97	1.474	5.02	19.336	3.622	0.609	0.643	19.336	3.867	76.42	8843	5.000	19.336	3.741	112.00	9864	5.088	5.082	12.460	-1.120	3.845	0.915
1000S250-43[1]	0.717	2.44	10.203	3.771	0.531	0.860	10.203	1.617	31.95	836	5.508	---	---	---	---	---	0.486	10.404	-1.535	4.161	0.864
1000S250-54	0.896	3.05	12.677	3.762	0.653	0.854	12.677	2.277	44.99	1661	5.213	12.660	1.879	56.26	1661	5.635	0.957	12.806	-1.525	4.148	0.865
1000S250-68	1.121	3.81	15.751	3.749	0.799	0.844	15.751	3.028	65.93	3345	5.076	15.741	2.768	82.89	3345	5.248	1.899	15.726	-1.514	4.130	0.866
1000S250-97	1.576	5.36	21.827	3.722	1.072	0.825	21.827	4.357	98.41	8843	5.004	21.827	4.181	140.63	9864	5.082	5.433	21.268	-1.491	4.093	0.867
1200S137-54[1]	0.853	2.90	14.283	4.091	0.121	0.376	13.296	1.873	37.01	1377	6.698	12.836	1.694	50.71	1377	6.960	0.911	3.683	-0.542	4.144	0.983
1200S137-68	1.067	3.63	17.698	4.072	0.144	0.367	17.142	2.518	49.76	2771	6.463	16.572	2.348	70.30	2771	6.664	1.809	4.458	-0.532	4.123	0.983
1200S137-97	1.499	5.10	24.379	4.032	0.182	0.348	24.379	3.899	77.04	8147	6.121	24.161	3.666	109.75	8147	6.301	5.170	5.847	-0.512	4.079	0.984
1200S162-54[1]	0.896	3.05	15.730	4.190	0.212	0.486	14.743	2.109	41.68	1377	6.650	14.298	1.914	57.31	1377	6.906	0.957	6.293	-0.744	4.283	0.970
1200S162-68	1.121	3.81	19.518	4.173	0.255	0.477	18.955	2.817	55.66	2771	6.433	18.390	2.645	79.19	2771	6.618	1.899	7.666	-0.734	4.264	0.970
1200S162-97	1.576	5.36	26.966	4.137	0.331	0.459	26.966	4.327	85.51	8147	6.114	26.735	4.091	122.49	8147	6.282	5.433	10.187	-0.713	4.223	0.971
1200S200-54[1]	0.953	3.24	17.662	4.306	0.393	0.643	16.678	2.425	47.93	1377	6.595	16.334	2.073	62.07	1377	6.991	1.017	11.462	-1.047	4.478	0.945
1200S200-68	1.192	4.06	21.947	4.291	0.479	0.634	21.376	3.215	63.54	2771	6.398	20.864	2.963	88.71	2771	6.628	2.020	14.038	-1.036	4.459	0.946
1200S200-97	1.677	5.71	30.417	4.258	0.635	0.615	30.417	4.899	96.81	8147	6.106	30.175	4.660	139.51	8147	6.261	5.783	18.876	-1.014	4.420	0.947
1200S250-54[1]	1.009	3.43	19.681	4.416	0.683	0.823	18.832	2.482	49.05	1377	6.794	18.433	2.149	64.34	1377	7.159	1.078	19.354	-1.395	4.704	0.912
1200S250-68	1.263	4.30	24.484	4.402	0.836	0.813	23.963	3.496	69.08	2771	6.460	23.575	3.007	90.04	2771	6.846	2.141	23.796	-1.384	4.686	0.913
1200S250-97	1.779	6.05	34.016	4.373	1.121	0.794	34.016	5.496	108.6	8147	6.098	33.835	5.037	150.82	8147	6.340	6.134	32.260	-1.361	4.648	0.914

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]Tabulated gross properties are based on the full, unreduced section away from punch-outs.
[2]Effective properties are based on punched sections.
[3]For deflection determination, use the effective moment of inertia.
[4]For sections with properties listed for both 33 ksi and 50 ksi yield point, the required yield point must be specified in the design documents.
[5]Where section designations include a superscript "1", web height-to-thickness exceeds 200. Web stiffeners are required at all supports and concentrated loads. No holes or punch-outs are permitted in the web.
[6]The digits to the left of "S" in the section designation specify the depth of the member in hundredths of an inch measured from outside face to outside face of the flanges (Depth in Figure 1).
[7]The three digits immediately to the right of "S" in the section designation specify the width of the flange in hundredths of an inch (Table 6 and Figure 1).
[8]The last two digits in the section designation is the material thickness of the section in mils. See Table 5 for the design thickness, minimum required thickness and inside corner radii in decimals of an inch for the corresponding mil designation.

TABLE 2—CHANNEL (TRACK) SECTION PROPERTIES[1,2,3,4,5,6]

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
162T125-27	0.117	0.4	0.063	0.735	0.020	0.410	0.050	0.044	0.87	541	1.048	---	---	---	---	---	0.031	0.010	-0.886	1.221	0.474
162T125-30	0.129	0.44	0.070	0.735	0.022	0.409	0.057	0.050	1	597	1.038	---	---	---	---	---	0.042	0.012	-0.884	1.22	0.475
162T125-33	0.143	0.49	0.077	0.736	0.024	0.408	0.066	0.058	1.15	663	1.026	---	---	---	---	---	0.057	0.013	-0.882	1.219	0.476
162T150-27	0.131	0.45	0.074	0.750	0.032	0.495	0.055	0.045	0.9	541	1.092	---	---	---	---	---	0.035	0.017	-1.115	1.432	0.394
162T150-30	0.144	0.49	0.081	0.751	0.035	0.494	0.062	0.052	1.03	597	1.082	---	---	---	---	---	0.047	0.019	-1.113	1.431	0.395
162T150-33	0.16	0.54	0.09	0.751	0.039	0.494	0.072	0.06	1.19	663	1.07	---	---	---	---	---	0.064	0.021	-1.111	1.429	0.395
250T125-27	0.141	0.48	0.157	1.053	0.022	0.398	0.129	0.079	1.56	685	1.519	---	---	---	---	---	0.038	0.027	-0.77	1.366	0.679
250T125-30	0.156	0.53	0.173	1.053	0.025	0.397	0.145	0.090	1.77	832	1.507	---	---	---	---	---	0.051	0.030	-0.77	1.365	0.679
250T125-33	0.173	0.59	0.192	1.054	0.027	0.397	0.166	0.103	2.03	1024	1.492	---	---	---	---	---	0.069	0.033	-0.77	1.365	0.68
250T125-43	0.225	0.77	0.250	1.055	0.035	0.395	0.231	0.147	2.91	1356	1.454	---	---	---	---	---	0.153	0.042	-0.766	1.362	0.683
250T125-54	0.282	0.96	0.318	1.062	0.043	0.392	0.310	0.203	4.01	1692	1.426	0.297	0.188	5.64	2563	1.463	0.301	0.054	-0.763	1.365	0.688
250T125-68	0.355	1.21	0.408	1.072	0.054	0.389	0.408	0.281	5.56	2111	1.404	0.402	0.262	7.85	3199	1.440	0.602	0.068	-0.758	1.369	0.694
250T150-27	0.156	0.53	0.181	1.078	0.037	0.486	0.139	0.082	1.61	685	1.576	---	---	---	---	---	0.042	0.044	-0.99	1.542	0.588
250T150-30	0.172	0.58	0.199	1.078	0.040	0.486	0.157	0.093	1.83	832	1.563	---	---	---	---	---	0.056	0.048	-0.99	1.541	0.589
250T150-33	0.190	0.65	0.221	1.079	0.045	0.485	0.179	0.107	2.11	1024	1.548	---	---	---	---	---	0.076	0.054	-0.986	1.540	0.590
250T150-43	0.248	0.84	0.289	1.080	0.058	0.483	0.252	0.154	3.03	1356	1.508	---	---	---	---	---	0.168	0.070	-0.981	1.537	0.593
250T150-54	0.311	1.06	0.368	1.088	0.072	0.481	0.342	0.213	4.22	1692	1.477	0.325	0.197	5.89	2563	1.517	0.332	0.088	-0.977	1.539	0.597
250T150-68	0.391	1.33	0.472	1.099	0.089	0.478	0.465	0.299	5.92	2111	1.449	0.445	0.276	8.27	3199	1.490	0.663	0.113	-0.972	1.543	0.603
250T200-33	0.225	0.76	0.280	1.117	0.097	0.658	0.203	0.112	2.22	1024	1.647	---	---	---	---	---	0.090	0.118	-1.432	1.932	0.450
250T200-43	0.293	1.00	0.366	1.118	0.126	0.657	0.288	0.163	3.21	1356	1.605	---	---	---	---	---	0.198	0.153	-1.427	1.928	0.452
250T200-54	0.367	1.25	0.466	1.127	0.157	0.654	0.396	0.228	4.51	1692	1.572	0.371	0.209	6.25	2563	1.615	0.392	0.195	-1.422	1.929	0.456
250T200-68	0.462	1.57	0.600	1.139	0.196	0.652	0.548	0.324	6.41	2111	1.538	0.517	0.296	8.86	3199	1.586	0.783	0.251	-1.417	1.932	0.462
350T125-27	0.170	0.58	0.331	1.396	0.025	0.381	0.277	0.128	2.53	590	2.044	---	---	---	---	---	0.045	0.057	-0.68	1.599	0.819
350T125-30	0.187	0.64	0.365	1.396	0.027	0.38	0.312	0.145	2.86	790	2.03	---	---	---	---	---	0.061	0.063	-0.679	1.598	0.82
350T125-33	0.207	0.71	0.405	1.397	0.030	0.379	0.354	0.165	3.27	1024	2.014	---	---	---	---	---	0.083	0.070	-0.68	1.598	0.820
350T125-43	0.270	0.92	0.528	1.397	0.038	0.377	0.490	0.233	4.61	1739	1.971	---	---	---	---	---	0.183	0.090	-0.673	1.596	0.822
350T125-54	0.339	1.15	0.668	1.404	0.048	0.375	0.651	0.317	6.26	2392	1.937	0.626	0.297	8.89	3372	1.978	0.362	0.113	-0.669	1.599	0.825
350T125-68	0.427	1.45	0.851	1.412	0.059	0.372	0.851	0.433	8.55	2994	1.908	0.839	0.407	12.18	4536	1.949	0.723	0.143	-0.665	1.605	0.828
350T150-27	0.184	0.63	0.377	1.431	0.041	0.470	0.298	0.132	2.62	590	2.111	---	---	---	---	---	0.049	0.093	-0.88	1.745	0.746
350T150-30	0.203	0.69	0.416	1.432	0.045	0.469	0.336	0.150	2.96	790	2.097	---	---	---	---	---	0.066	0.103	-0.88	1.744	0.747
350T150-33	0.225	0.76	0.461	1.432	0.049	0.469	0.382	0.171	3.39	1024	2.080	---	---	---	---	---	0.090	0.114	-0.876	1.743	0.747
350T150-43	0.293	1.00	0.601	1.433	0.064	0.467	0.531	0.243	4.80	1739	2.034	---	---	---	---	---	0.198	0.148	-0.872	1.741	0.749
350T150-54	0.367	1.25	0.761	1.440	0.079	0.465	0.712	0.332	6.57	2392	1.996	0.679	0.310	9.28	3372	2.042	0.392	0.186	-0.868	1.744	0.752
350T150-68	0.462	1.57	0.972	1.450	0.099	0.462	0.957	0.459	9.07	2994	1.960	0.919	0.428	12.81	4536	2.007	0.783	0.236	-0.863	1.749	0.756
350T200-33	0.259	0.88	0.574	1.487	0.108	0.647	0.428	0.181	3.57	1024	2.199	---	---	---	---	---	0.103	0.248	-1.30	2.077	0.610
350T200-43	0.338	1.15	0.749	1.489	0.140	0.645	0.600	0.257	5.09	1739	2.150	---	---	---	---	---	0.229	0.322	-1.292	2.074	0.612
350T200-54	0.424	1.44	0.949	1.496	0.175	0.642	0.814	0.355	7.01	2392	2.109	0.770	0.329	9.85	3372	2.159	0.453	0.408	-1.288	2.076	0.615
350T200-68	0.534	1.82	1.213	1.508	0.218	0.639	1.112	0.496	9.80	2994	2.066	1.054	0.458	13.71	4536	2.121	0.904	0.520	-1.283	2.080	0.620
362T125-27	0.173	0.59	0.358	1.438	0.025	0.378	0.301	0.135	2.66	569	2.109	---	---	---	---	---	0.046	0.062	-0.67	1.631	0.831
362T125-30	0.191	0.65	0.395	1.438	0.027	0.378	0.339	0.152	3.01	762	2.095	---	---	---	---	---	0.062	0.068	-0.67	1.63	0.832
362T125-33	0.212	0.72	0.438	1.438	0.030	0.377	0.384	0.174	3.44	1024	2.079	---	---	---	---	---	0.085	0.075	-0.67	1.63	0.832
362T125-43	0.276	0.94	0.571	1.439	0.039	0.375	0.531	0.245	4.84	1739	2.035	---	---	---	---	---	0.187	0.097	-0.663	1.628	0.834
362T125-54	0.346	1.18	0.723	1.445	0.048	0.373	0.705	0.332	6.57	2480	2.000	0.678	0.312	9.34	3372	2.042	0.369	0.122	-0.659	1.632	0.837
362T125-68	0.436	1.48	0.921	1.454	0.060	0.370	0.921	0.453	8.95	3104	1.971	0.907	0.427	12.78	4703	2.012	0.738	0.155	-0.655	1.637	0.840
362T150-27	0.187	0.64	0.408	1.475	0.041	0.468	0.323	0.140	2.76	569	2.177	---	---	---	---	---	0.050	0.101	-0.87	1.774	0.761
362T150-30	0.207	0.70	0.449	1.475	0.045	0.467	0.364	0.158	3.12	762	2.162	---	---	---	---	---	0.067	0.111	-0.87	1.773	0.761
362T150-33	0.229	0.78	0.499	1.475	0.050	0.467	0.414	0.180	3.56	1024	2.146	---	---	---	---	---	0.091	0.123	-0.87	1.772	0.762
362T150-43	0.298	1.02	0.650	1.476	0.064	0.465	0.574	0.255	5.04	1739	2.099	---	---	---	---	---	0.202	0.160	-0.860	1.771	0.764
362T150-54	0.374	1.27	0.823	1.483	0.080	0.462	0.769	0.349	6.89	2480	2.060	0.735	0.325	9.74	3372	2.107	0.400	0.201	-0.856	1.774	0.767
362T150-68	0.471	1.60	1.050	1.492	0.099	0.459	1.034	0.480	9.49	3104	2.024	0.993	0.449	13.43	4703	2.072	0.799	0.256	-0.852	1.779	0.771

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

Table 2 continued on next page.

TABLE 2—CHANNEL (TRACK) SECTION PROPERTIES[1,2,3,4,5,6] (Continued)

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
362T200-33	0.264	0.90	0.619	1.532	0.110	0.645	0.464	0.190	3.76	1024	2.267	---	---	---	---	---	0.105	0.269	-1.28	2.1	0.627
362T200-43	0.343	1.17	0.808	1.534	0.142	0.643	0.649	0.270	5.34	1739	2.218	---	---	---	---	---	0.233	0.349	-1.277	2.097	0.629
362T200-54	0.431	1.47	1.024	1.541	0.177	0.640	0.879	0.372	7.35	2480	2.175	0.832	0.345	10.34	3372	2.226	0.460	0.441	-1.273	2.099	0.632
362T200-68	0.543	1.85	1.307	1.552	0.221	0.638	1.199	0.519	10.26	3104	2.132	1.138	0.480	14.37	4703	2.187	0.919	0.562	-1.268	2.104	0.636
400T125-27	0.184	0.63	0.449	1.562	0.025	0.372	0.380	0.156	3.08	515	2.306	---	---	---	---	---	0.049	0.077	-0.64	1.729	0.862
400T125-30	0.203	0.69	0.495	1.562	0.028	0.371	0.427	0.176	3.49	689	2.289	---	---	---	---	---	0.066	0.085	-0.64	1.729	0.863
400T125-33	0.225	0.76	0.549	1.563	0.031	0.371	0.484	0.201	3.97	940	2.272	---	---	---	---	---	0.090	0.094	-0.64	1.728	0.863
400T125-43	0.293	1.00	0.716	1.563	0.040	0.369	0.666	0.282	5.57	1739	2.227	---	---	---	---	---	0.198	0.122	-0.635	1.727	0.865
400T125-54	0.367	1.25	0.904	1.569	0.049	0.366	0.882	0.381	7.53	2739	2.191	0.849	0.359	10.74	3372	2.234	0.392	0.153	-0.631	1.730	0.867
400T125-68	0.462	1.57	1.150	1.577	0.061	0.363	1.150	0.517	10.22	3435	2.159	1.134	0.488	14.62	5205	2.202	0.783	0.193	-0.627	1.736	0.870
400T150-27	0.198	0.67	0.509	1.602	0.042	0.461	0.409	0.154	3.04	515	2.420	---	---	---	---	---	0.053	0.127	-0.83	1.864	0.800
400T150-30	0.218	0.74	0.561	1.603	0.046	0.461	0.458	0.183	3.61	689	2.359	---	---	---	---	---	0.071	0.139	-0.83	1.864	0.800
400T150-33	0.242	0.82	0.622	1.603	0.051	0.460	0.519	0.208	4.12	940	2.342	---	---	---	---	---	0.097	0.154	-0.83	1.863	0.801
400T150-43	0.315	1.07	0.811	1.604	0.066	0.458	0.719	0.293	5.80	1739	2.294	---	---	---	---	---	0.214	0.200	-0.827	1.862	0.803
400T150-54	0.396	1.35	1.025	1.610	0.082	0.456	0.960	0.399	7.89	2739	2.253	0.918	0.374	11.19	3372	2.301	0.422	0.251	-0.823	1.865	0.805
400T150-68	0.498	1.69	1.306	1.619	0.102	0.453	1.286	0.548	10.82	3435	2.214	1.237	0.513	15.35	5205	2.264	0.844	0.318	-0.818	1.870	0.808
400T200-33	0.277	0.94	0.768	1.666	0.113	0.639	0.581	0.220	4.34	940	2.469	---	---	---	---	---	0.110	0.335	-1.24	2.173	0.674
400T200-43	0.360	1.23	1.002	1.668	0.146	0.637	0.811	0.311	6.14	1739	2.418	---	---	---	---	---	0.244	0.435	-1.235	2.171	0.676
400T200-54	0.452	1.54	1.268	1.675	0.182	0.635	1.093	0.426	8.42	2739	2.374	1.037	0.397	11.88	3372	2.426	0.483	0.549	-1.231	2.173	0.679
400T200-68	0.569	1.94	1.617	1.685	0.227	0.632	1.485	0.591	11.68	3435	2.327	1.412	0.549	16.42	5205	2.385	0.965	0.699	-1.226	2.178	0.683
550T125-27	0.226	0.77	0.948	2.046	0.027	0.348	0.786	0.192	3.79	372	3.464	---	---	---	---	---	0.060	0.160	-0.55	2.147	0.934
550T125-30	0.25	0.85	1.045	2.046	0.030	0.347	0.897	0.226	4.47	499	3.385	---	---	---	---	---	0.081	0.176	-0.55	2.147	0.935
550T125-33	0.277	0.94	1.159	2.046	0.033	0.346	1.029	0.270	5.33	680	3.302	---	---	---	---	---	0.110	0.194	-0.55	2.146	0.935
550T125-43	0.360	1.23	1.510	2.047	0.043	0.344	1.428	0.416	8.23	1504	3.103	---	---	---	---	---	0.244	0.251	-0.544	2.146	0.936
550T125-54	0.452	1.54	1.903	2.052	0.053	0.342	1.862	0.597	11.80	2739	2.960	1.811	0.535	16.01	2980	3.094	0.483	0.314	-0.540	2.149	0.937
550T125-68	0.569	1.94	2.412	2.058	0.066	0.339	2.412	0.807	15.95	4347	2.913	2.379	0.769	23.02	5350	2.960	0.965	0.395	-0.536	2.154	0.938
550T150-27	0.241	0.82	1.059	2.098	0.046	0.436	0.893	0.207	4.10	372	3.460	---	---	---	---	---	0.064	0.262	-0.72	2.262	0.898
550T150-30	0.265	0.90	1.168	2.098	0.050	0.435	0.995	0.251	4.96	499	3.349	---	---	---	---	---	0.086	0.288	-0.72	2.262	0.898
550T150-33	0.294	1.00	1.295	2.099	0.055	0.434	1.115	0.310	6.12	680	3.224	---	---	---	---	---	0.117	0.319	-0.721	2.261	0.898
550T150-43	0.383	1.30	1.688	2.099	0.072	0.432	1.516	0.468	9.25	1504	3.066	---	---	---	---	---	0.260	0.412	-0.717	2.260	0.899
550T150-54	0.480	1.63	2.128	2.105	0.089	0.430	2.005	0.628	12.41	2739	3.020	1.928	0.595	17.81	2980	3.072	0.513	0.517	-0.714	2.264	0.901
550T150-68	0.605	2.06	2.699	2.112	0.110	0.427	2.660	0.850	16.80	4347	2.974	2.569	0.804	24.07	5350	3.029	1.025	0.652	-0.710	2.269	0.902
550T200-33	0.329	1.12	1.567	2.184	0.123	0.613	1.246	0.307	6.06	680	3.453	---	---	---	---	---	0.131	0.692	-1.097	2.520	0.810
550T200-43	0.428	1.46	2.043	2.185	0.160	0.611	1.690	0.495	9.79	1504	3.209	---	---	---	---	---	0.290	0.898	-1.093	2.518	0.812
550T200-54	0.537	1.83	2.578	2.191	0.199	0.609	2.253	0.669	13.21	2739	3.158	2.153	0.630	18.86	2980	3.215	0.573	1.129	-1.089	2.521	0.813
550T200-68	0.676	2.30	3.274	2.200	0.248	0.606	3.027	0.914	18.06	4347	3.103	2.894	0.857	25.67	5350	3.166	1.146	1.428	-1.084	2.527	0.816
600T125-27[1]	0.241	0.82	1.168	2.204	0.028	0.34	0.958	0.21	4.16	341	3.812	---	---	---	---	---	0.064	0.195	-0.525	2.291	0.948
600T125-30	0.265	0.90	1.288	2.204	0.031	0.340	1.095	0.249	4.92	456	3.726	---	---	---	---	---	0.086	0.214	-0.52	2.291	0.948
600T125-33	0.294	1.00	1.428	2.204	0.034	0.339	1.258	0.297	5.87	622	3.635	---	---	---	---	---	0.117	0.237	-0.52	2.291	0.948
600T125-43	0.383	1.30	1.861	2.205	0.044	0.337	1.768	0.461	9.11	1377	3.412	---	---	---	---	---	0.260	0.306	-0.519	2.290	0.949
600T125-54	0.480	1.63	2.344	2.209	0.054	0.335	2.299	0.666	13.15	2728	3.246	2.241	0.592	17.73	2728	3.400	0.513	0.383	-0.516	2.293	0.949
600T125-68	0.605	2.06	2.969	2.215	0.067	0.332	2.969	0.916	18.09	4347	3.164	2.934	0.858	25.69	5350	3.241	1.025	0.481	-0.512	2.298	0.950
600T125-97	0.862	2.93	4.281	2.228	0.092	0.326	4.281	1.347	30.43	7359	3.178	4.281	1.347	40.33	10885	3.178	2.973	0.681	-0.504	2.308	0.952
600T150-27[1]	0.255	0.87	1.300	2.260	0.047	0.427	1.011	0.214	4.23	341	3.919	---	---	---	---	---	0.068	0.319	-0.69	2.402	0.917
600T150-30	0.281	0.96	1.434	2.260	0.051	0.427	1.159	0.253	5.01	456	3.831	---	---	---	---	---	0.091	0.351	-0.69	2.402	0.917
600T150-33	0.311	1.06	1.590	2.260	0.057	0.426	1.334	0.303	5.99	622	3.737	---	---	---	---	---	0.124	0.389	-0.69	2.401	0.917
600T150-43	0.405	1.38	2.072	2.261	0.073	0.424	1.890	0.474	9.36	1377	3.506	---	---	---	---	---	0.275	0.503	-0.687	2.400	0.918
600T150-54	0.509	1.73	2.611	2.266	0.091	0.422	2.473	0.689	13.62	2728	3.330	2.400	0.609	18.24	2728	3.493	0.543	0.630	-0.684	2.404	0.919
600T150-68	0.641	2.18	3.309	2.273	0.113	0.419	3.262	0.963	19.03	4347	3.227	3.162	0.891	26.68	5350	3.322	1.086	0.794	-0.680	2.409	0.920
600T150-97	0.913	3.11	4.778	2.288	0.156	0.413	4.778	1.504	29.71	7359	3.178	4.778	1.444	43.23	10885	3.222	3.148	1.131	-0.672	2.420	0.923

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

Table 2 continued on next page.

TABLE 2—CHANNEL (TRACK) SECTION PROPERTIES[1,2,3,4,5,6] (Continued)

Section	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
	Area	Weight	Ixx	Rx	Iyy	Ry	Ixx	Sxx	Ma	Va	Ycg	Ixx	Sxx	Ma	Va	Ycg	Jx1000	Cw	Xo	Ro	
	(in^2)	(lb/ft)	(in^4)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	ß
600T200-33	0.346	1.18	1.913	2.352	0.126	0.604	1.542	0.333	6.59	622	3.803	---	---	---	---	---	0.138	0.845	-1.06	2.648	0.841
600T200-43	0.451	1.53	2.494	2.353	0.163	0.602	2.076	0.565	11.16	1377	3.469	---	---	---	---	---	0.305	1.095	-1.053	2.647	0.842
600T200-54	0.565	1.92	3.145	2.359	0.203	0.600	2.759	0.759	15.00	2728	3.416	2.641	0.717	21.48	2728	3.475	0.604	1.376	-1.049	2.650	0.843
600T200-68	0.712	2.42	3.990	2.367	0.254	0.597	3.696	1.034	20.42	4347	3.360	3.540	0.973	29.12	5350	3.424	1.206	1.739	-1.045	2.656	0.845
600T200-97	1.015	3.45	5.773	2.385	0.354	0.591	5.758	1.667	32.95	7359	3.276	5.558	1.568	46.94	10885	3.345	3.499	2.496	-1.036	2.667	0.849
800T125-30[1]	0.328	1.11	2.611	2.824	0.032	0.314	2.113	0.339	6.71	341	5.136	---	---	---	---	---	0.106	0.412	-0.44	2.876	0.976
800T125-33[1]	0.363	1.24	2.895	2.824	0.036	0.313	2.441	0.407	8.03	465	5.015	---	---	---	---	---	0.145	0.456	-0.44	2.875	0.976
800T125-43	0.473	1.61	3.773	2.824	0.046	0.311	3.484	0.640	12.65	1030	4.708	---	---	---	---	---	0.321	0.588	-0.440	2.875	0.977
800T125-54	0.594	2.02	4.745	2.827	0.057	0.309	4.668	0.940	18.58	2039	4.457	4.426	0.824	24.66	2039	4.684	0.634	0.734	-0.438	2.878	0.977
800T125-68	0.748	2.54	5.998	2.833	0.070	0.306	5.998	1.356	26.80	4087	4.244	5.956	1.216	36.39	4087	4.437	1.267	0.919	-0.434	2.882	0.977
800T125-97	1.066	3.63	8.613	2.843	0.096	0.301	8.613	2.062	40.74	8843	4.178	8.613	2.062	61.72	10885	4.178	3.674	1.293	-0.427	2.891	0.978
800T150-30[1]	0.343	1.17	2.868	2.891	0.054	0.398	2.219	0.345	6.82	341	5.254	---	---	---	---	---	0.111	0.678	-0.60	2.978	0.960
800T150-33[1]	0.380	1.29	3.180	2.891	0.060	0.397	2.569	0.414	8.18	465	5.131	---	---	---	---	---	0.152	0.750	-0.59	2.978	0.960
800T150-43	0.496	1.69	4.144	2.891	0.077	0.395	3.689	0.655	12.95	1030	4.815	---	---	---	---	---	0.336	0.970	-0.590	2.977	0.961
800T150-54	0.622	2.12	5.214	2.896	0.096	0.393	4.976	0.969	19.15	2039	4.552	4.692	0.844	25.27	2039	4.790	0.664	1.213	-0.587	2.980	0.961
800T150-68	0.783	2.67	6.594	2.902	0.119	0.390	6.527	1.412	27.91	4087	4.323	6.361	1.255	37.58	4087	4.530	1.327	1.522	-0.583	2.985	0.962
800T150-97	1.116	3.80	9.479	2.914	0.165	0.384	9.479	2.269	44.83	8843	4.178	9.479	2.192	65.62	10885	4.225	3.849	2.155	-0.576	2.995	0.963
800T200-33[1]	0.415	1.41	3.749	3.005	0.135	0.571	2.788	0.424	8.37	465	5.349	---	---	---	---	---	0.166	1.635	-0.92	3.196	0.916
800T200-43	0.541	1.84	4.887	3.006	0.175	0.569	4.043	0.676	13.35	1030	5.023	---	---	---	---	---	0.367	2.119	-0.921	3.195	0.917
800T200-54	0.679	2.31	6.152	3.011	0.218	0.567	5.505	1.009	19.93	2039	4.746	5.149	0.871	26.09	2039	4.998	0.725	2.657	-0.917	3.198	0.918
800T200-68	0.854	2.91	7.786	3.019	0.272	0.564	7.306	1.490	29.45	4087	4.494	7.051	1.310	39.22	4087	4.721	1.448	3.346	-0.913	3.204	0.919
800T200-97	1.218	4.15	11.212	3.034	0.379	0.558	11.176	2.491	49.22	8843	4.285	10.833	2.347	70.27	10885	4.373	4.200	4.770	-0.905	3.215	0.921
1000T125-43[1]	0.563	1.92	6.630	3.431	0.047	0.290	5.886	0.819	16.19	822	6.077	---	---	---	---	---	0.382	0.973	-0.383	3.464	0.988
1000T125-54	0.707	2.41	8.333	3.434	0.059	0.288	7.960	1.216	24.03	1628	5.750	7.479	1.055	31.59	1628	6.044	0.755	1.212	-0.380	3.467	0.988
1000T125-68	0.890	3.03	10.522	3.438	0.073	0.286	10.452	1.781	35.19	3261	5.452	10.155	1.575	47.15	3261	5.717	1.508	1.514	-0.377	3.470	0.988
1000T125-97	1.269	4.32	15.077	3.447	0.100	0.280	15.077	2.907	57.44	8843	5.182	15.077	2.753	82.42	9507	5.319	4.375	2.121	-0.371	3.478	0.989
1000T150-43[1]	0.586	1.99	7.207	3.507	0.080	0.370	6.195	0.837	16.54	822	6.193	---	---	---	---	---	0.397	1.610	-0.518	3.565	0.979
1000T150-54	0.735	2.50	9.061	3.511	0.100	0.368	8.430	1.249	24.69	1628	5.854	7.880	1.079	32.29	1628	6.159	0.785	2.011	-0.515	3.567	0.979
1000T150-68	0.926	3.15	11.445	3.516	0.124	0.366	11.342	1.846	36.48	3261	5.538	10.774	1.621	48.53	3261	5.818	1.569	2.519	-0.511	3.572	0.980
1000T150-97	1.320	4.49	16.413	3.526	0.171	0.360	16.413	3.165	62.54	8843	5.182	16.413	2.902	86.90	9507	5.375	4.550	3.551	-0.504	3.580	0.980
1000T150-43[1]	0.586	1.99	7.207	3.507	0.080	0.370	6.195	0.837	16.54	822	6.193	---	---	---	---	---	0.397	1.610	-0.518	3.565	0.979
1000T150-54	0.735	2.50	9.061	3.511	0.100	0.368	8.430	1.249	24.69	1628	5.854	7.880	1.079	32.29	1628	6.159	0.785	2.011	-0.515	3.567	0.979
1000T150-68	0.926	3.15	11.445	3.516	0.124	0.366	11.342	1.846	36.48	3261	5.538	10.774	1.621	48.53	3261	5.818	1.569	2.519	-0.511	3.572	0.980
1000T150-97	1.320	4.49	16.413	3.526	0.171	0.360	16.413	3.165	62.54	8843	5.182	16.413	2.902	86.90	9507	5.375	4.550	3.551	-0.504	3.580	0.980
1000T200-43[1]	0.631	2.15	8.361	3.640	0.183	0.539	6.722	0.861	17.01	822	6.422	---	---	---	---	---	0.428	3.535	-0.819	3.770	0.953
1000T200-54	0.792	2.69	10.516	3.645	0.228	0.537	9.231	1.295	25.60	1628	6.067	8.560	1.111	33.26	1628	6.386	0.845	4.426	-0.816	3.773	0.953
1000T200-68	0.997	3.39	13.292	3.651	0.284	0.534	12.551	1.936	38.26	3261	5.728	11.820	1.684	50.42	3261	6.029	1.690	5.564	-0.812	3.778	0.954
1000T200-97	1.422	4.84	19.087	3.664	0.397	0.528	19.031	3.427	67.72	8843	5.310	18.583	3.081	92.25	9507	5.543	4.901	7.899	-0.804	3.788	0.955
1200T125-54[1]	0.820	2.79	13.335	4.033	0.060	0.271	12.296	1.491	29.47	1354	7.106	11.460	1.286	38.51	1354	7.460	0.876	1.820	-0.337	4.056	0.993
1200T125-68	1.033	3.51	16.826	4.036	0.074	0.268	16.246	2.206	43.60	2713	6.730	15.686	1.934	57.90	2713	7.061	1.750	2.271	-0.334	4.059	0.993
1200T125-97	1.472	5.01	24.078	4.044	0.102	0.263	24.078	3.690	72.92	7902	6.338	23.751	3.442	103.06	7902	6.541	5.076	3.173	-0.328	4.066	0.994
1200T150-54[1]	0.848	2.89	14.378	4.117	0.103	0.348	12.962	1.530	30.23	1354	7.215	12.020	1.313	39.31	1354	7.581	0.906	3.032	-0.459	4.157	0.988
1200T150-68	1.068	3.64	18.148	4.121	0.127	0.345	17.568	2.281	45.08	2713	6.820	16.566	1.987	59.48	2713	7.168	1.810	3.793	-0.456	4.161	0.988
1200T150-97	1.523	5.18	25.987	4.130	0.176	0.340	25.987	3.996	78.97	7902	6.331	25.719	3.616	108.27	7902	6.598	5.252	5.332	-0.449	4.169	0.988
1200T200-54[1]	0.905	3.08	16.464	4.265	0.236	0.510	14.078	1.582	31.26	1354	7.443	12.962	1.350	40.41	1354	7.823	0.966	6.706	-0.736	4.358	0.971
1200T200-68	1.140	3.88	20.791	4.271	0.294	0.508	19.277	2.383	47.09	2713	7.024	18.026	2.058	61.62	2713	7.393	1.931	8.419	-0.732	4.363	0.972
1200T200-97	1.625	5.53	29.805	4.283	0.410	0.502	29.805	4.298	84.93	7902	6.468	28.959	3.819	114.35	7902	6.778	5.602	11.921	-0.725	4.373	0.973

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]Gross properties are based on the full, unreduced section away from punch-outs. Effective properties are based on punched sections.
[2]For sections with properties listed for both 33 ksi and 50 ksi yield point, the required yield point must be specified in the design documents.
[3]Where section designations include a superscript "1", web height-to-thickness exceeds 200. Web stiffeners are required at all supports and concentrated loads.
[4]The digits to the left of "T" in the section designation specify the depth of the member in hundredths of an inch measured from inside face to inside face of the flanges (Depth in Figure 1).
[5]The three digits immediately to the right of "T" in the section designation specify the width of the flange in hundredths of an inch (Table 6 and Figure 1).
[6]The last two digits in the section designation is the material thickness of the section in mils. See Table 5 for the design thickness and minimum required thickness in decimals of an inch for the corresponding mil designation.

TABLE 3—U CHANNELS STRUCTURAL PROPERTIES[1,2]

SECTION[5]	WEIGHT (lb/ft)	GROSS SECTION PROPERTIES[3]					EFFECTIVE SECTION PROPERTIES			ALLOWABLE MOMENT[4]
		Area (in^2)	I_x (in^4)	r_x (in)	I_y (in^4)	r_y (in)	I_x (in^4)	S_x (in^3)	A (in^2)	M_a (in-k)
75U050-54	0.30	0.087	0.007	0.288	0.002	0.155	0.007	0.019	0.087	0.45
150U050-54	0.44	0.129	0.039	0.547	0.003	0.144	0.039	0.052	0.129	1.22
200U050-54	0.54	0.157	0.079	0.709	0.003	0.136	0.079	0.079	0.157	1.87
250U050-54	0.63	0.186	0.139	0.866	0.003	0.128	0.139	0.111	0.186	2.64

For **SI:** 1 inch = 25.4 mm, 1 lb/ft = 1.488 kg/m, 1 in-lb = 11.30 N-m.

I_x = Strong axis moment of inertia. r_y = Weak axis radius of gyration.
r_x = Strong axis radius of gyration. S_x = Strong axis section modulus.
I_y = Weak axis moment of inertia.

[1]F_y = 33 ksi.
[2]Use the effective moment of inertia for deflection calculations.
[3]Gross properties are based on the full-unreduced cross section of the U channel.
[4]Full lateral support of compression flanges must be provided.
[5]The last two digits in the section designation is the material thickness of the section in mils. See Table 5 for the design thickness, minimum required thickness and inside corner radii in decimals of an inch for the corresponding mil designation.

TABLE 4—HAT FURRING CHANNEL PROPERTIES[1,3]

SECTION[4]	WEIGHT (lb/ft)	DEPTH (in)	GROSS SECTION PROPERTIES					EFFECTIVE SECTION PROPERTIES		ALLOWABLE MOMENT[2]
			Area (in^2)	I_x (in^4)	r_x (in)	I_y (in^4)	r_y (in)	I_x (in^4)	S_x (in^3)	M_a (ft-lb)
087F125-18	0.239	0.875	0.0702	0.0089	0.356	0.0354	0.710	0.0086	0.0160	26.41
087F125-30	0.391	0.875	0.1149	0.0143	0.353	0.0580	0.710	0.0143	0.0365	50.47
150F125-18	0.320	1.500	0.0939	0.0311	0.575	0.0467	0.705	0.0299	0.0344	56.59
150F125-30	0.525	1.500	0.1543	0.0503	0.571	0.0797	0.705	0.0503	0.0639	105.25

For **SI:** 1 inch = 25.4 mm, 1 lb/ft = 1.488 kg/m, 1 in-lb = 11.30 N-m

I_x = Strong axis moment of inertia. X_o = Distance from shear center to neutral axis.
r_x = Strong axis radius of gyration. J = St. Venant torsion constant.
I_y = Weak axis moment of inertia. C_w = Warping constant.
r_y = Weak axis radius of gyration. R_o = Radii of gyration.
S_x = Strong axis section modulus. β = Torsional flexural constant.

[1]F_y = 33 ksi.
[2]Allowable moment is applicable for both positive and negative moments. Full lateral support of compression flanges must be provided.
[3]Use the effective moment of inertia for deflection calculations.
[4]The last two digits in the section designation is the material thickness of the section in mils. See Table 5 for the design thickness, minimum required thickness and inside corner radii in decimals of an inch for the corresponding mil designation.

TABLE 5—SECTION DIMENSIONS

MILS	DESIGN THICKNESS (in)	MINIMUM UNCOATED BASE METAL THICKNESS (in)	INSIDE CORNER RADII (in)
18	0.0188	0.0179	0.0843
27	0.0283	0.0269	0.0796
30	0.0312	0.0296	0.0781
33	0.0346	0.0329	0.0764
43	0.0451	0.0428	0.0712
54	0.0566	0.0538	0.0849
68	0.0713	0.0677	0.1069
97	0.1017	0.0966	0.1525

For **SI:** 1 inch = 25.4 mm.

TABLE 6—SECTION FLANGE & STIFFENER DIMENSIONS

SECTION	FLANGE (in)	STIFFENING LIP (in)
S125	1.25	0.1875
S137	1.375	0.375
S162	1.625	0.50
S200	2.00	0.625
S250	2.50	0.625

For **SI:** 1 inch = 25.4 mm.

TABLE 7—ALLOWABLE WEB CRIPPLING LOADS[1] (lbs) - SINGLE MEMBERS

Depth	Design Thickness	(mils)	Fy (ksi)	Condition 1 Brng Length (in)				Condition 2 Brng Length (in)				Condition 3 Brng Length (in)				Condition 4 Brng Length (in)			
				1	3.5	4	6	1	3.5	4	6	1	3.5	4	6	1	3.5	4	6
162	0.0188	-18	33	55	89	95	112	87	125	131	151	45	64	67	76	122	161	166	186
162	0.0283	-27	33	122	194	205	242	218	304	317	361	111	151	157	178	290	371	383	425
162	0.0312	-30	33	148	233	246	290	269	373	388	442	137	185	192	217	356	452	466	516
162	0.0346	-33	33	180	282	297	350	336	462	481	545	170	229	237	267	441	557	574	634
250	0.0188	-18	33	52	84	89	106	85	122	128	147	37	51	54	61	109	145	150	168
250	0.0283	-27	33	117	186	196	231	213	298	310	354	96	130	135	153	268	343	354	393
250	0.0312	-30	33	141	223	235	277	264	365	381	433	119	161	167	189	330	420	433	479
250	0.0346	-33	33	173	271	285	336	330	453	472	535	150	201	209	235	411	519	535	591
250	0.0451	-43	33	287	443	466	547	580	780	810	913	267	351	364	407	720	892	918	1006
250	0.0566	-54	33	433	657	690	806	891	1178	1221	1369	430	556	574	639	1142	1392	1429	1558
250	0.0566	-54	50	656	996	1046	1222	1350	1785	1850	2075	652	842	870	968	1730	2109	2165	2361
250	0.0713	-68	33	654	977	1024	1191	1368	1778	1838	2050	693	880	907	1004	1815	2179	2233	2421
250	0.0713	-68	50	990	1480	1552	1805	2073	2693	2785	3106	1049	1333	1375	1521	2750	3302	3384	3669
350	0.0188	-18	33	49	80	84	100	83	119	124	143	28	40	42	48	98	130	134	150
350	0.0283	-27	33	112	177	187	221	209	292	304	347	81	111	115	130	247	316	327	362
350	0.0312	-30	33	135	214	225	266	259	359	373	425	103	139	144	163	306	389	402	445
350	0.0346	-33	33	166	260	274	323	324	445	463	526	131	175	182	205	384	484	499	551
350	0.0451	-43	33	278	428	451	528	571	768	798	900	240	315	326	365	680	842	866	949
350	0.0566	-54	33	420	638	670	783	879	1162	1204	1351	392	507	524	583	1086	1324	1359	1482
350	0.0566	-54	50	637	967	1016	1186	1331	1761	1825	2046	594	768	794	883	1645	2005	2059	2245
350	0.0713	-68	33	637	951	998	1160	1351	1756	1816	2025	640	813	839	928	1736	2085	2137	2317
350	0.0713	-68	50	965	1441	1512	1758	2047	2660	2751	3068	970	1232	1271	1406	2631	3159	3238	3510
362	0.0188	-18	33	49	79	84	99	82	119	124	143	27	39	40	46	97	128	132	149
362	0.0283	-27	33	111	177	186	220	209	291	303	346	80	108	113	127	245	313	324	359
362	0.0312	-30	33	135	213	224	265	258	358	373	424	101	136	141	160	304	386	398	441
362	0.0346	-33	33	165	259	273	322	323	444	462	525	129	173	179	202	381	480	495	547
362	0.0451	-43	33	277	427	449	526	570	767	796	898	236	311	322	360	675	836	860	943
362	0.0566	-54	33	419	636	668	780	877	1160	1202	1348	388	501	518	577	1079	1316	1351	1473
362	0.0566	-54	50	634	963	1012	1182	1329	1758	1822	2043	588	760	785	874	1635	1994	2047	2232
362	0.0713	-68	33	635	948	995	1157	1349	1753	1813	2022	635	806	831	920	1728	2074	2126	2305
362	0.0713	-68	50	962	1437	1507	1752	2044	2657	2747	3064	961	1221	1259	1393	2618	3143	3221	3492
400	0.0283	-27	33	109	174	183	217	207	289	301	344	75	102	106	120	238	305	315	349
400	0.0312	-30	33	133	210	221	261	257	356	370	421	95	129	134	151	296	376	388	429
400	0.0346	-33	33	163	256	269	317	322	442	460	522	122	164	170	192	372	469	483	534
400	0.0451	-43	33	274	422	444	520	567	763	792	893	227	299	309	346	662	819	843	924
400	0.0566	-54	33	415	629	661	772	873	1155	1197	1342	376	485	502	558	1061	1293	1328	1448
400	0.0566	-54	50	628	954	1002	1170	1323	1750	1813	2034	569	735	760	846	1607	1960	2012	2194
400	0.0713	-68	33	629	940	986	1147	1344	1746	1806	2014	617	784	809	895	1702	2044	2094	2271
400	0.0713	-68	50	953	1424	1494	1737	2036	2646	2736	3051	936	1188	1226	1356	2579	3096	3173	3440
400	0.1017	-97	33	1197	1742	1823	2105	2617	3312	3415	3774	1305	1616	1662	1822	3504	4116	4207	4523
400	0.1017	-97	50	1814	2640	2762	3189	3965	5018	5174	5718	1978	2448	2518	2761	5309	6236	6374	6852

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]See Figure 2 for web crippling loading conditions.

Table 7 continued on next page.

TABLE 7—ALLOWABLE WEB CRIPPLING LOADS[1] (lbs) - SINGLE MEMBERS (Continued)

Depth	Design Thickness	(mils)	Fy (ksi)	Condition 1 Brng Length (in)				Condition 2 Brng Length (in)				Condition 3 Brng Length (in)				Condition 4 Brng Length (in)			
				1	3.5	4	6	1	3.5	4	6	1	3.5	4	6	1	3.5	4	6
550	0.0283	-27	33	103	164	173	205	202	282	294	336	58	79	82	93	214	274	283	314
550	0.0312	-30	33	126	199	210	248	251	348	362	412	76	103	106	120	268	341	351	389
550	0.0346	-33	33	155	243	256	302	315	432	450	511	100	134	139	157	339	428	441	487
550	0.0451	-43	33	262	405	426	499	556	749	778	877	195	256	265	297	614	760	782	858
550	0.0566	-54	33	400	607	638	745	859	1136	1177	1320	331	428	443	493	995	1213	1246	1358
550	0.0566	-54	50	606	920	966	1128	1302	1722	1784	2001	502	649	671	746	1508	1838	1887	2058
550	0.0713	-68	33	609	910	955	1111	1324	1721	1780	1985	557	707	729	807	1611	1934	1982	2149
550	0.0713	-68	50	923	1380	1447	1683	2007	2608	2697	3007	844	1071	1105	1223	2441	2931	3003	3256
600	0.0312	-30	33	124	196	206	243	249	345	359	409	70	95	98	111	260	330	340	377
600	0.0346	-33	33	153	240	253	297	313	430	447	507	93	125	130	146	329	416	429	473
600	0.0451	-43	33	259	400	420	493	553	745	773	872	185	243	252	282	600	743	764	838
600	0.0566	-54	33	395	600	631	736	855	1131	1172	1314	318	411	425	473	975	1189	1221	1331
600	0.0566	-54	50	599	909	956	1116	1295	1713	1775	1991	482	623	644	716	1478	1802	1850	2017
600	0.0713	-68	33	604	902	946	1100	1318	1713	1772	1976	539	684	706	781	1583	1901	1949	2113
600	0.0713	-68	50	914	1366	1433	1666	1998	2596	2685	2994	816	1036	1069	1183	2399	2881	2952	3201
600	0.1017	-97	33	1157	1684	1762	2034	2575	3260	3361	3714	1175	1455	1497	1641	3306	3884	3969	4267
600	0.1017	-97	50	1752	2551	2669	3081	3902	4939	5093	5628	1781	2205	2268	2487	5010	5885	6014	6466
800	0.0451	-43	33	247	381	401	470	542	730	757	854	150	197	204	228	548	678	698	765
800	0.0566	-54	33	379	576	605	706	839	1110	1150	1290	270	349	361	402	904	1102	1131	1234
800	0.0566	-54	50	575	872	917	1070	1272	1682	1743	1955	409	529	547	608	1370	1670	1714	1869
800	0.0713	-68	33	582	870	912	1061	1297	1686	1744	1944	473	600	619	685	1485	1783	1827	1981
800	0.0713	-68	50	882	1318	1382	1607	1966	2555	2642	2946	716	910	939	1038	2250	2701	2768	3001
800	0.1017	-97	33	1123	1635	1711	1975	2541	3216	3316	3665	1068	1322	1360	1491	3142	3691	3773	4056
800	0.1017	-97	50	1702	2477	2592	2992	3850	4873	5025	5553	1618	2003	2060	2259	4761	5593	5716	6145
1000	0.0566	-54	33	365	554	582	680	826	1092	1132	1269	228	295	305	339	841	1026	1053	1148
1000	0.0566	-54	50	553	840	882	1031	1251	1655	1715	1923	346	447	462	514	1275	1554	1595	1740
1000	0.0713	-68	33	563	842	883	1027	1279	1662	1719	1917	415	527	544	602	1398	1679	1721	1865
1000	0.0713	-68	50	854	1275	1338	1555	1938	2518	2604	2904	629	799	824	912	2119	2544	2607	2826
1000	0.1017	-97	33	1094	1592	1666	1923	2511	3178	3277	3622	974	1206	1240	1360	2999	3523	3601	3871
1000	0.1017	-97	50	1657	2412	2525	2914	3805	4815	4965	5487	1476	1827	1879	2060	4545	5338	5456	5866
1200	0.0713	-68	33	547	816	857	996	1262	1640	1696	1892	363	462	476	527	1320	1585	1625	1762
1200	0.0713	-68	50	828	1237	1298	1509	1913	2485	2570	2866	551	699	721	798	2001	2402	2462	2669
1200	0.1017	-97	33	1068	1554	1626	1877	2484	3144	3242	3583	889	1101	1133	1242	2871	3372	3446	3705
1200	0.1017	-97	50	1618	2355	2464	2844	3764	4764	4912	5428	1348	1668	1716	1882	4350	5109	5222	5614

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]See Figure 2 for web crippling loading conditions.

TABLE 8—ALLOWABLE WEB CRIPPLING LOADS (lbs) - BACK-TO-BACK MEMBERS

Depth	Design Thickness	(mils)	Fy (ksi)	Condition 1 Brng Length (in)				Condition 2 Brng Length (in)				Condition 3 Brng Length (in)				Condition 4 Brng Length (in)			
				1	3.5	4	6	1	3.5	4	6	1	3.5	4	6	1	3.5	4	6
162	0.0188	-18	33	247	392	414	488	256	316	325	356	151	200	207	232	305	403	418	468
162	0.0283	-27	33	535	826	869	1020	609	730	748	811	368	472	487	540	771	987	1020	1131
162	0.0312	-30	33	642	985	1036	1213	747	890	911	985	454	577	595	659	957	1216	1255	1389
162	0.0346	-33	33	779	1186	1247	1457	926	1097	1122	1211	565	713	735	812	1200	1515	1561	1724
250	0.0188	-18	33	247	391	413	487	255	314	323	353	129	171	177	198	261	345	357	400
250	0.0283	-27	33	534	825	868	1018	605	726	744	806	329	421	435	482	688	881	910	1010
250	0.0312	-30	33	641	983	1034	1211	742	885	906	980	408	519	535	593	861	1094	1129	1249
250	0.0346	-33	33	777	1184	1245	1454	921	1091	1116	1204	512	647	666	736	1088	1373	1415	1562
250	0.0451	-43	33	1273	1904	1998	2323	1597	1862	1901	2038	910	1127	1159	1271	1964	2432	2501	2743
250	0.0566	-54	33	1895	2787	2919	3380	2484	2860	2916	3109	1461	1781	1828	1993	3159	3851	3954	4311
250	0.0566	-54	50	2871	4223	4423	5121	3764	4333	4418	4711	2213	2698	2770	3020	4786	5835	5990	6532
250	0.0713	-68	33	2832	4094	4281	4933	3877	4409	4488	4763	2347	2819	2889	3132	5077	6096	6247	6773
250	0.0713	-68	50	4291	6203	6487	7474	5874	6680	6800	7216	3557	4271	4377	4745	7692	9236	9465	10263
350	0.0188	-18	33	246	390	412	486	253	312	320	351	109	144	149	167	220	291	301	338
350	0.0283	-27	33	533	823	866	1016	602	722	740	802	292	374	386	429	611	783	808	897
350	0.0312	-30	33	640	981	1032	1208	739	880	901	975	366	465	480	531	771	981	1012	1120
350	0.0346	-33	33	776	1182	1242	1452	917	1086	1111	1198	463	585	603	665	984	1241	1279	1412
350	0.0451	-43	33	1272	1901	1995	2320	1590	1854	1893	2029	838	1037	1067	1170	1808	2239	2303	2525
350	0.0566	-54	33	1892	2783	2916	3375	2474	2849	2904	3097	1361	1659	1703	1857	2943	3588	3684	4016
350	0.0566	-54	50	2867	4217	4417	5114	3749	4316	4400	4693	2062	2514	2581	2814	4459	5436	5581	6085
350	0.0713	-68	33	2829	4089	4276	4927	3863	4393	4472	4746	2208	2652	2717	2946	4776	5735	5877	6372
350	0.0713	-68	50	4286	6196	6479	7466	5853	6657	6776	7191	3346	4018	4117	4464	7236	8689	8904	9654
362	0.0188	-18	33	246	390	412	486	253	311	320	350	107	141	146	164	215	285	295	330
362	0.0283	-27	33	533	823	866	1015	602	722	739	801	288	369	381	422	603	772	797	884
362	0.0312	-30	33	640	981	1032	1208	738	880	901	974	361	459	474	524	761	968	999	1105
362	0.0346	-33	33	776	1182	1242	1452	916	1085	1110	1197	458	578	595	657	972	1226	1264	1395
362	0.0451	-43	33	1271	1901	1994	2319	1589	1853	1892	2028	830	1027	1057	1159	1790	2217	2280	2501
362	0.0566	-54	33	1892	2783	2915	3375	2473	2847	2903	3096	1349	1645	1689	1842	2918	3558	3653	3983
362	0.0566	-54	50	2867	4217	4417	5113	3747	4314	4398	4691	2045	2493	2559	2790	4422	5391	5535	6035
362	0.0713	-68	33	2828	4089	4276	4927	3861	4392	4470	4744	2193	2633	2698	2925	4742	5694	5835	6326
362	0.0713	-68	50	4285	6195	6479	7465	5851	6654	6773	7188	3322	3989	4088	4432	7185	8627	8841	9585
400	0.0283	-27	33	533	822	865	1015	600	720	738	800	276	353	365	405	577	739	763	847
400	0.0312	-30	33	639	981	1031	1208	737	878	899	972	347	441	455	504	732	931	960	1063
400	0.0346	-33	33	776	1181	1242	1451	915	1083	1108	1195	442	557	574	634	937	1183	1219	1346
400	0.0451	-43	33	1271	1900	1993	2318	1587	1850	1889	2025	806	998	1026	1126	1739	2154	2215	2429
400	0.0566	-54	33	1891	2782	2914	3373	2470	2844	2899	3092	1317	1605	1648	1797	2848	3472	3564	3886
400	0.0566	-54	50	2866	4215	4415	5111	3743	4309	4393	4685	1995	2432	2497	2723	4315	5260	5401	5889
400	0.0713	-68	33	2827	4087	4274	4925	3857	4387	4465	4739	2147	2578	2642	2865	4644	5576	5714	6195
400	0.0713	-68	50	4284	6193	6476	7462	5844	6646	6765	7180	3253	3906	4003	4340	7036	8448	8658	9387
400	0.1017	-97	33	5280	7429	7748	8858	7676	8582	8716	9184	4508	5295	5412	5819	9750	11453	11705	12584
400	0.1017	-97	50	8000	11256	11740	13421	11630	13003	13206	13915	6830	8023	8200	8816	14772	17352	17735	19067

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]See Figure 2 for web crippling loading conditions.

Table 8 continued on next page.

TABLE 8—ALLOWABLE WEB CRIPPLING LOADS (lbs) - BACK-TO-BACK MEMBERS (Continued)

Depth	Design Thickness	(mils)	Fy (ksi)	Condition 1 Brng Length (in)				Condition 2 Brng Length (in)				Condition 3 Brng Length (in)				Condition 4 Brng Length (in)			
				1	3.5	4	6	1	3.5	4	6	1	3.5	4	6	1	3.5	4	6
550	0.0283	-27	33	531	821	863	1013	597	716	733	795	233	298	308	341	487	624	644	715
550	0.0312	-30	33	638	979	1029	1205	732	873	894	966	298	378	390	432	627	798	823	911
550	0.0346	-33	33	774	1179	1239	1448	909	1077	1102	1188	384	484	499	551	815	1028	1060	1170
550	0.0451	-43	33	1269	1897	1990	2314	1579	1841	1879	2015	721	893	919	1007	1556	1927	1982	2174
550	0.0566	-54	33	1888	2778	2909	3368	2459	2831	2886	3078	1200	1463	1502	1638	2595	3164	3249	3542
550	0.0566	-54	50	2861	4208	4408	5104	3725	4289	4372	4663	1818	2217	2276	2482	3933	4794	4922	5367
550	0.0713	-68	33	2823	4082	4268	4918	3841	4369	4447	4719	1985	2384	2443	2649	4294	5156	5284	5728
550	0.0713	-68	50	4278	6185	6467	7452	5820	6619	6738	7150	3008	3612	3702	4013	6506	7812	8005	8680
600	0.0312	-30	33	638	978	1029	1204	731	871	892	965	283	359	371	410	596	757	781	865
600	0.0346	-33	33	774	1178	1238	1447	908	1075	1100	1186	366	462	477	526	778	982	1012	1117
600	0.0451	-43	33	1268	1896	1989	2313	1576	1838	1876	2011	696	862	886	972	1501	1859	1912	2097
600	0.0566	-54	33	1888	2776	2908	3367	2455	2827	2882	3073	1165	1420	1458	1590	2520	3072	3154	3439
600	0.0566	-54	50	2860	4207	4406	5101	3720	4283	4366	4657	1765	2152	2209	2409	3818	4654	4778	5210
600	0.0713	-68	33	2822	4080	4267	4916	3836	4363	4441	4713	1937	2326	2383	2584	4189	5030	5154	5589
600	0.0713	-68	50	4276	6182	6465	7449	5812	6611	6729	7141	2935	3524	3611	3915	6347	7621	7810	8467
600	0.1017	-97	33	5272	7418	7737	8844	7641	8543	8677	9142	4157	4883	4991	5366	8991	10562	10795	11605
600	0.1017	-97	50	7988	11240	11722	13401	11577	12944	13146	13852	6299	7399	7562	8130	13623	16002	16355	17583
800	0.0451	-43	33	1266	1892	1985	2309	1567	1827	1866	2000	603	747	769	843	1302	1613	1659	1819
800	0.0566	-54	33	1885	2772	2903	3361	2443	2812	2867	3058	1038	1266	1300	1417	2246	2738	2811	3065
800	0.0566	-54	50	2855	4200	4399	5093	3702	4261	4344	4633	1573	1918	1969	2147	3402	4148	4259	4643
800	0.0713	-68	33	2818	4074	4260	4909	3819	4344	4421	4692	1762	2115	2168	2350	3810	4575	4688	5083
800	0.0713	-68	50	4270	6173	6455	7438	5786	6581	6699	7109	2669	3205	3284	3561	5772	6931	7103	7701
800	0.1017	-97	33	5265	7409	7727	8833	7612	8510	8644	9107	3867	4542	4642	4991	8363	9823	10040	10794
800	0.1017	-97	50	7978	11226	11707	13384	11533	12895	13097	13799	5859	6882	7034	7562	12671	14883	15212	16354
1000	0.0566	-54	33	1882	2768	2899	3356	2432	2800	2855	3044	927	1130	1160	1265	2005	2445	2510	2737
1000	0.0566	-54	50	2851	4194	4393	5086	3685	4242	4325	4613	1405	1713	1758	1917	3038	3704	3803	4146
1000	0.0713	-68	33	2814	4069	4255	4902	3804	4326	4404	4674	1608	1931	1979	2145	3478	4176	4280	4640
1000	0.0713	-68	50	4264	6165	6447	7428	5764	6555	6673	7081	2437	2926	2998	3251	5270	6327	6484	7030
1000	0.1017	-97	33	5260	7401	7718	8824	7587	8482	8615	9077	3613	4244	4337	4663	7813	9178	9380	10085
1000	0.1017	-97	50	7969	11213	11695	13369	11495	12852	13053	13753	5474	6430	6572	7065	11839	13906	14213	15280
1200	0.0713	-68	33	2811	4064	4250	4897	3790	4311	4388	4657	1470	1765	1809	1961	3179	3817	3912	4241
1200	0.0713	-68	50	4259	6158	6439	7419	5743	6532	6649	7056	2227	2674	2741	2971	4817	5784	5927	6426
1200	0.1017	-97	33	5254	7394	7711	8815	7564	8457	8589	9050	3385	3976	4063	4368	7320	8598	8788	9448
1200	0.1017	-97	50	7961	11202	11683	13356	11461	12813	13014	13712	5128	6024	6156	6619	11091	13028	13315	14315

For **SI:** 1 inch = 25.4 mm, 1 pound = 4.4482 N.

[1]See Figure 2 for web crippling loading conditions.

TABLE 9—C-SECTIONS (STUDS) FOR USE WITH THE IRC

IRC MEMBER DESIGNATION	EQUIVALENT TELLING INDUSTRIES MEMBER DESIGNATION			
t	33	43	54	68
350S162-t	350S162-33	350S162-43	350S162-54	350S162-68
	350S200-33	350S200-43	350S200-54	350S200-68
550S162-t	550S162-33	550S162-43	550S162-54	550S162-68
	550S200-33	550S200-43	550S200-54	550S200-68
800S162-t	800S162-33	800S162-43	800S162-54	800S162-68
	800S200-33	800S200-43	800S200-54	800S200-68
1000S162-t	---	1000S162-43	1000S162-54	1000S162-68
	---	1000S200-43	1000S200-54	1000S200-68
1200S162-t	---	---	1200S162-54	1200S162-68
	---	---	1200S200-54	1200S200-68

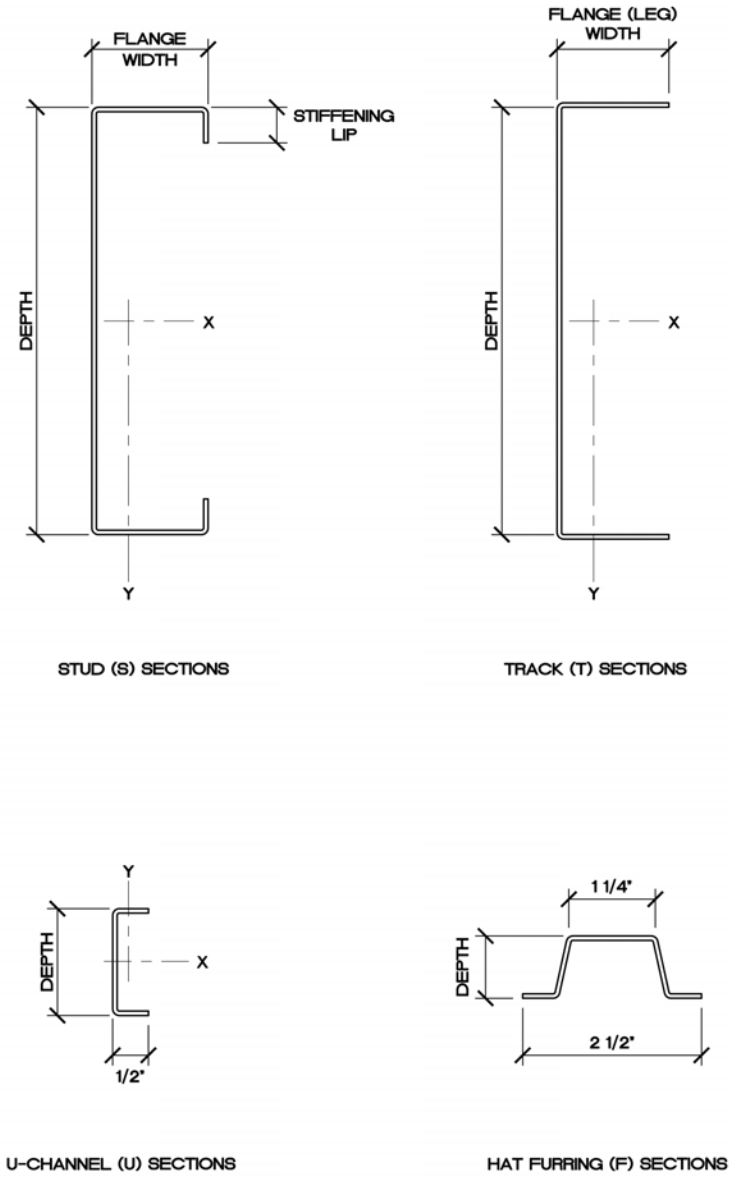

FIGURE 1—SECTION PROFILES

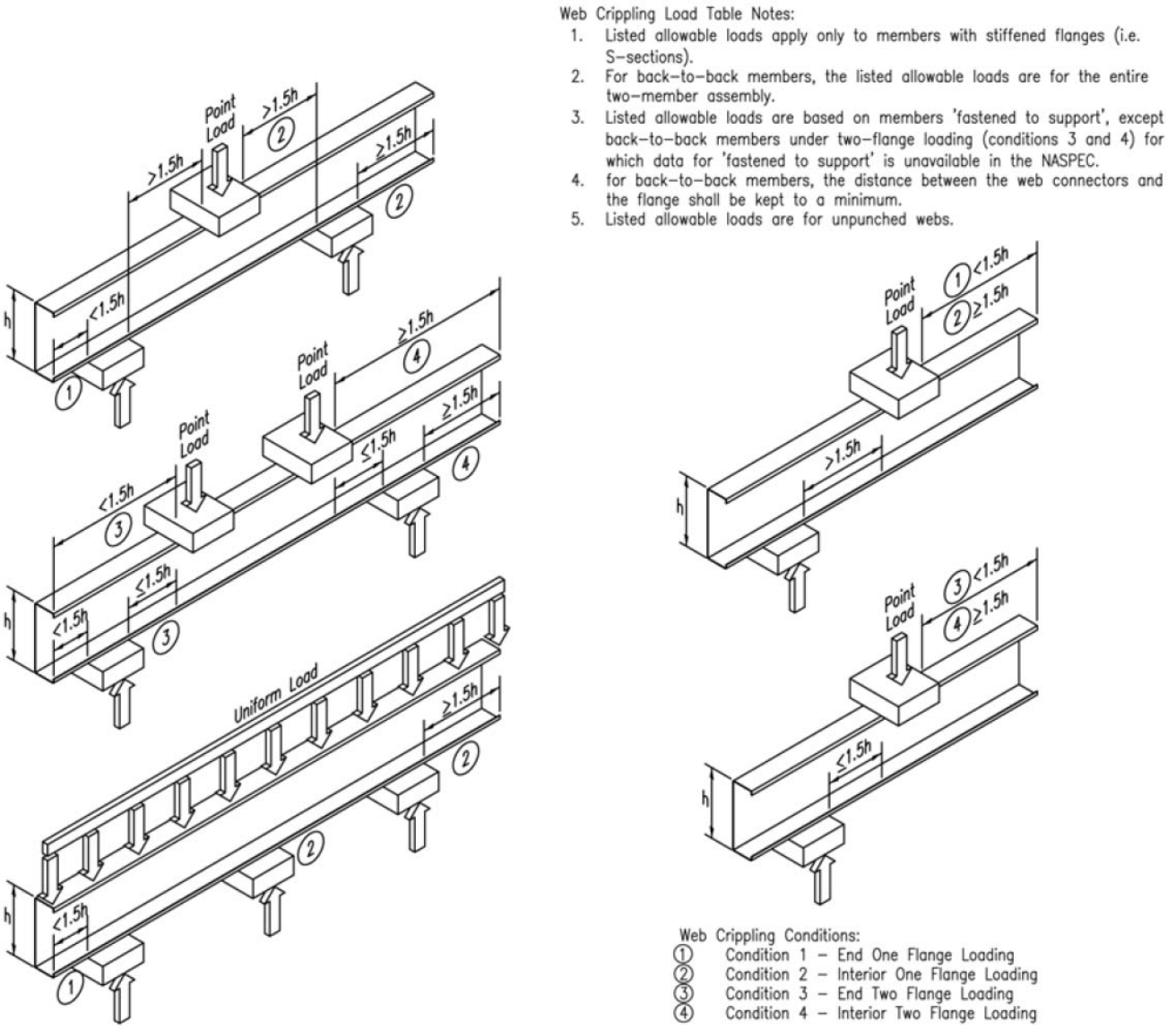

FIGURE 2—WEB CRIPPLING LOADING CONDITIONS