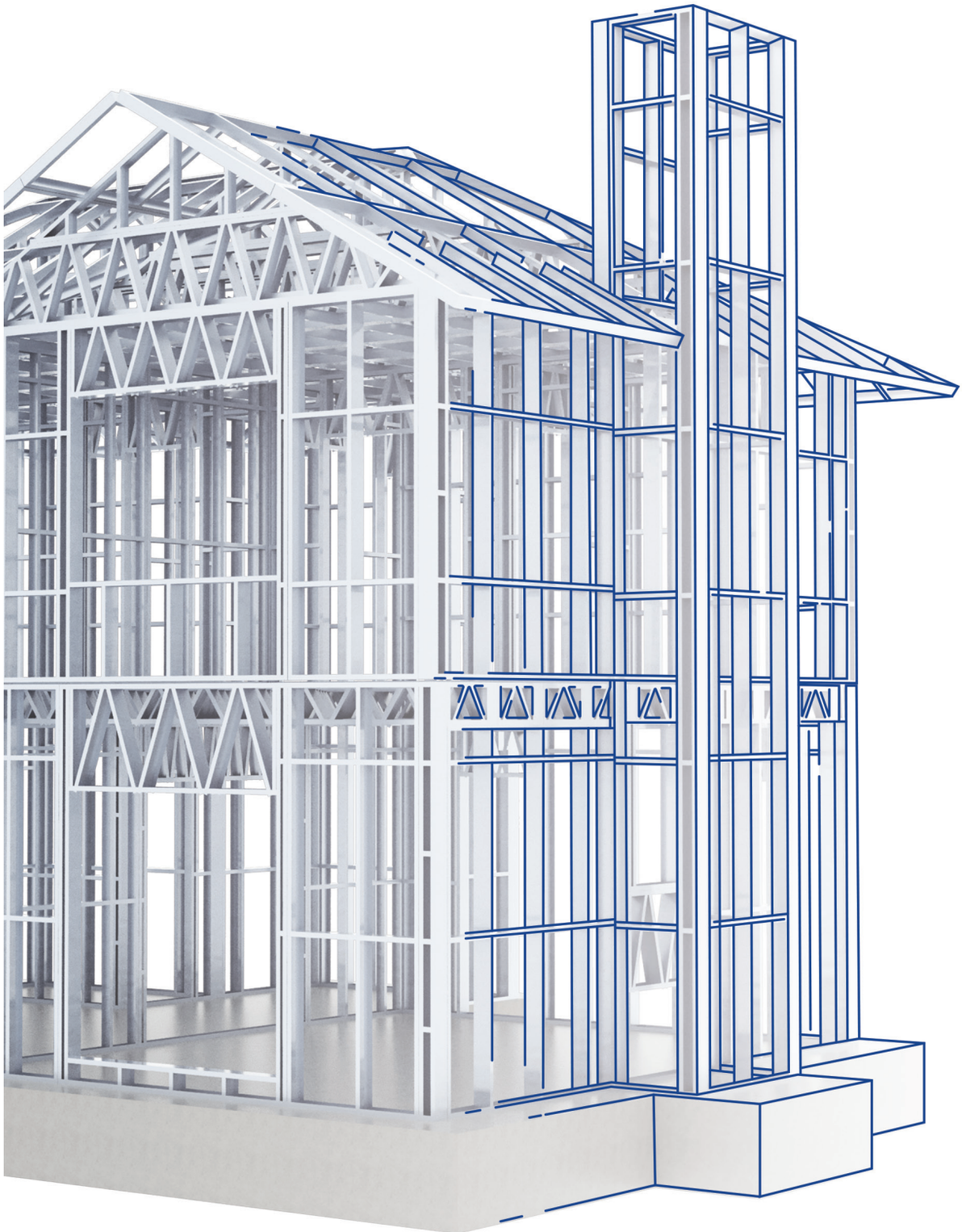
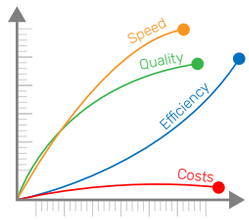


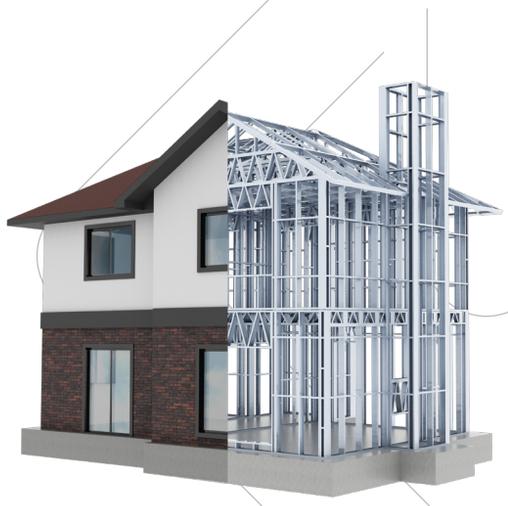
LIGHT GAUGE STEEL (LGS) FRAMING

Advantages of Light Gauge Steel Framing

There are at least 10 reasons why LGS technology is growing faster worldwide than other conventional building technologies:

- High Sustainability
- Full Recyclability
- Time Saving
- Cost Reduction
- Design Flexibility
- Weight Reduction
- High Stiffness
- Uniform Quality
- Simple Manufacturing
- Without Formwork

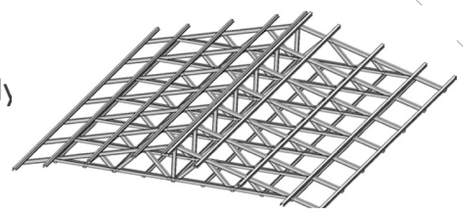


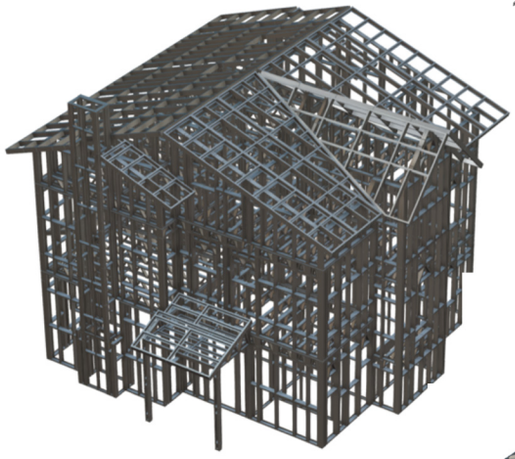


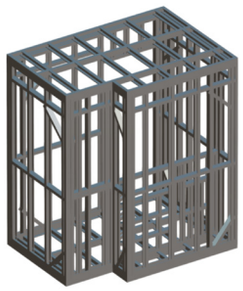
LGS Buildings made of LGS Frames, Trusses and Joists:

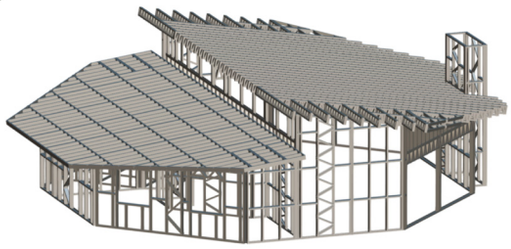
As a result of all advantages this technology is being successfully used in more and more building applications:

- Residential Buildings
- Modular Buildings
- Prefabricated Modules
- Bathroom Pods
- Warehouses
- Site Offices
- Temporary Accomodations
- Office Buildings
- Roof Trusses
- Customized Applications









Light Gauge Steel Framing Production Process at UMS

In light gauge steel structure manufacturing, we provide the most accurate structural solutions with a competent design and detailing team.

1- Design

Our competent design and detailing team initiates the production process by designing projects from technical and structural perspectives.

2- Production

The machines produce light gauge steel structure profiles according to the prepared project details.

4- On-Site Application

The produced panels are assembled on-site according to the project specifications, completing the light gauge steel structure.

3- Panel Assembly

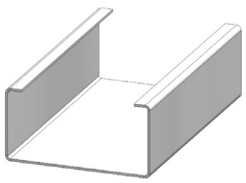
Our assembly team forms the profiles produced according to the project details into panels and fastens them together with screws.

Profile Dimensions

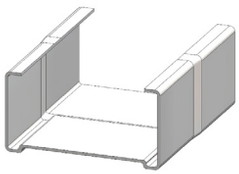
Web Width (w)	2-1/2" - 12"
Flange (h)	1-5/8" - 3"
Return Lip (a)	Up to – 3/4"
Thickness (t)	22ga – 12ga
Galvanization	G40 - G140
Steel Grade	33ksi - 80ksi

Web width dimensions of the profile produced: 2-1/2" - 3" – 3-1/2" - 4" – 5-1/2" – 8" – 10" - 12"

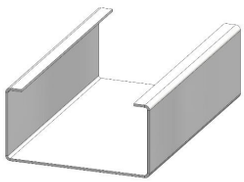
Profile Operations



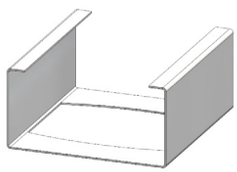
Cut



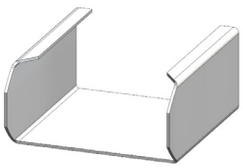
Swage



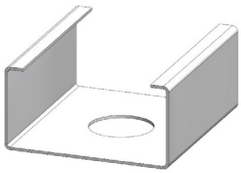
Pre Cut



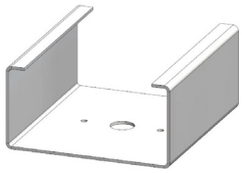
Notch



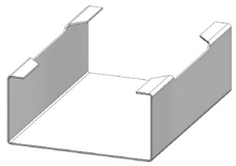
Chamfer



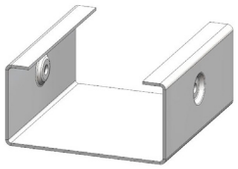
Service Hole



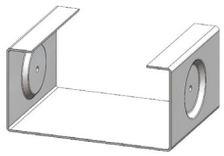
Web Hole + 2 x Index Hole



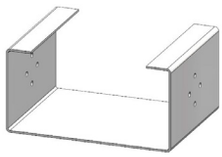
Lip Cut



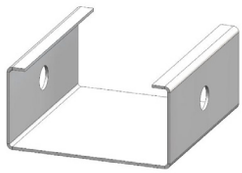
Dimpled Screw/Rivet



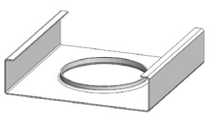
Big Dimpled Screw/Rivet



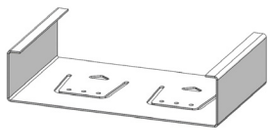
Flange Multi Connection



Flange Hole



Swaged Service Hole



Double Tab

AISI S100-16, C-Section With or Without Lips - Effective Section Properties

Section Designations and Gross Properties													
	Section Geometry					Gross Section Properties							
Designation	Web Depth D (in)	Flange Width B (in)	Design Thk. t (in)	Lip Length d (in)	Bend Radius R (in)	Area (in²)	Weight (lbf/ft)	Ixx (in⁴)	Sxx (in³)	Rx (in)	Iyy (in⁴)	Syy (in³)	Ry (in)
250S162-33	2,500	1,625	0,0346	0,500	0,1017	0,2217	0,7544	0,2329	0,1863	1,0249	0,0859	0,0860	0,6225
250S162-43	2,500	1,625	0,0451	0,500	0,1017	0,2867	0,9755	0,2983	0,2386	1,0201	0,1093	0,1095	0,6176
250S162-45	2,500	1,625	0,0566	0,500	0,1017	0,3566	1,2134	0,3672	0,2938	1,0148	0,1337	0,1338	0,6122
350S162-33	3,500	1,625	0,0346	0,500	0,1017	0,2563	0,8721	0,5037	0,2878	1,4019	0,0970	0,0897	0,6152
350S162-43	3,500	1,625	0,0451	0,500	0,1017	0,3318	1,1289	0,6472	0,3698	1,3967	0,1235	0,1143	0,6102
350S162-54	3,500	1,625	0,0566	0,500	0,1017	0,4132	1,406	0,7995	0,4569	1,3910	0,1511	0,1398	0,6047
350S200-33	3,500	2,000	0,0346	0,625	0,1017	0,2909	0,9898	0,5938	0,3393	1,4288	0,1730	0,1370	0,7711
350S200-43	3,500	2,000	0,0451	0,625	0,1017	0,3769	1,2824	0,7641	0,4366	1,4239	0,2213	0,1752	0,7662
350S200-54	3,500	2,000	0,0566	0,625	0,1017	0,4698	1,5986	0,9453	0,5402	1,4185	0,2720	0,2153	0,7609
350S200-68	3,500	2,000	0,0713	0,625	0,1017	0,5867	1,9965	1,1691	0,6681	1,4116	0,3336	0,2640	0,7541
350S200-97	3,500	2,000	0,1017	0,625	0,1017	0,8219	2,7966	1,6045	0,9169	1,3972	0,4499	0,3559	0,7399
350S250-33	3,500	2,500	0,0346	0,625	0,1017	0,3255	1,1076	0,6977	0,3987	1,4641	0,2931	0,1898	0,9490
350S250-43	3,500	2,500	0,0451	0,625	0,1017	0,4220	1,4359	0,8987	0,5135	1,4593	0,3761	0,2434	0,9441
350S250-54	3,500	2,500	0,0566	0,625	0,1017	0,5264	1,7912	1,1131	0,6360	1,4541	0,4638	0,3001	0,9387
350S250-68	3,500	2,500	0,0713	0,625	0,1017	0,6580	2,2391	1,3786	0,7878	1,4474	0,5713	0,3695	0,9318
350S250-97	3,500	2,500	0,1017	0,625	0,1017	0,9236	3,1427	1,8981	1,0846	1,4336	0,7773	0,5024	0,9174
362S162-33	3,625	1,625	0,0346	0,500	0,1017	0,2606	0,8868	0,5462	0,3014	1,4477	0,0982	0,0901	0,6138
362S162-43	3,625	1,625	0,0451	0,500	0,1017	0,3374	1,1481	0,7021	0,3873	1,4425	0,1250	0,1148	0,6088
362S162-54	3,625	1,625	0,0566	0,500	0,1017	0,4203	1,4301	0,8675	0,4786	1,4367	0,1530	0,1404	0,6033
400S162-33	4,000	1,625	0,0346	0,500	0,1017	0,2736	0,931	0,6862	0,3431	1,5836	0,1015	0,0911	0,6091
400S162-43	4,000	1,625	0,0451	0,500	0,1017	0,3543	1,2057	0,8825	0,4413	1,5782	0,1293	0,1160	0,6040
400S162-54	4,000	1,625	0,0566	0,500	0,1017	0,4415	1,5023	1,0914	0,5457	1,5722	0,1582	0,1420	0,5985
400S200-33	4,000	2,000	0,0346	0,500	0,1017	0,2995	1,0193	0,7882	0,3941	1,6221	0,1667	0,1244	0,7460
400S200-43	4,000	2,000	0,0451	0,625	0,1017	0,3994	1,3591	1,0381	0,5190	1,6121	0,2321	0,1781	0,7623
400S200-54	4,000	2,000	0,0566	0,625	0,1017	0,4981	1,6949	1,2856	0,6428	1,6066	0,2854	0,2189	0,7569
550S162-33	5,500	1,625	0,0346	0,500	0,1017	0,3255	1,1076	1,4473	0,5263	2,1087	0,1121	0,0940	0,5869
550S162-43	5,500	1,625	0,0451	0,500	0,1017	0,4220	1,4359	1,8655	0,6784	2,1026	0,1428	0,1198	0,5818
550S162-54	5,500	1,625	0,0566	0,500	0,1017	0,5264	1,7912	2,3124	0,8409	2,0959	0,1747	0,1466	0,5761
550S200-33	5,500	2,000	0,0346	0,625	0,1017	0,3601	1,2253	1,6825	0,6118	2,1616	0,2019	0,1441	0,7488
550S200-43	5,500	2,000	0,0451	0,625	0,1017	0,4671	1,5893	2,1711	0,7895	2,1560	0,2584	0,1844	0,7438
550S200-54	5,500	2,000	0,0566	0,625	0,1017	0,5830	1,9838	2,6946	0,9798	2,1499	0,3178	0,2268	0,7383
550S200-68	5,500	2,000	0,0713	0,625	0,1017	0,7293	2,4817	3,3462	1,2168	2,1420	0,3899	0,2784	0,7312
550S200-97	5,500	2,000	0,1017	0,625	0,1017	1,0253	3,4888	4,6322	1,6844	2,1256	0,5264	0,3759	0,7165
550S250-33	5,500	2,500	0,0346	0,625	0,1017	0,3947	1,3431	1,9409	0,7058	2,2176	0,3433	0,2009	0,9327
550S250-43	5,500	2,500	0,0451	0,625	0,1017	0,5122	1,7428	2,5066	0,9115	2,2123	0,4407	0,2578	0,9276
550S250-54	5,500	2,500	0,0566	0,625	0,1017	0,6396	2,1764	3,1138	1,1323	2,2064	0,5437	0,3181	0,9220
550S250-68	5,500	2,500	0,0713	0,625	0,1017	0,8006	2,7244	3,8715	1,4078	2,1990	0,6701	0,3920	0,9149
550S250-97	5,500	2,500	0,1017	0,625	0,1017	1,1270	3,8348	5,3731	1,9539	2,1835	0,9130	0,5339	0,9001

Section Designations and Gross Properties													
	Section Geometry					Gross Section Properties							
Designation	Web Depth D (in)	Flange Width B (in)	Design Thk. t (in)	Lip Length d (in)	Bend Radius R (in)	Area (in²)	Weight (lbf/ft)	Ixx (in⁴)	Sxx (in³)	Rx (in)	Iyy (in⁴)	Syy (in³)	Ry (in)
600S162-33	6,000	1,625	0,0346	0,500	0,1017	0,3428	1,1664	1,7796	0,5932	2,2785	0,1149	0,0947	0,5791
600S162-43	6,000	1,625	0,0451	0,500	0,1017	0,4445	1,5126	2,2949	0,7650	2,2722	0,1464	0,1207	0,5739
600S162-54	6,000	1,625	0,0566	0,500	0,1017	0,5547	1,8875	2,8463	0,9488	2,2652	0,1791	0,1477	0,5683
600S200-33	6,000	2,000	0,0346	0,625	0,1017	0,3774	1,2842	2,0619	0,6873	2,3374	0,2075	0,1453	0,7415
600S200-43	6,000	2,000	0,0451	0,625	0,1017	0,4896	1,6661	2,6618	0,8873	2,3316	0,2655	0,1860	0,7364
600S200-54	6,000	2,000	0,0566	0,625	0,1017	0,6113	2,0801	3,3053	1,1018	2,3253	0,3266	0,2288	0,7309
800S200-33	8,000	2,000	0,0346	0,625	0,1017	0,4466	1,5197	4,0728	1,0182	3,0199	0,2255	0,1490	0,7106
800S200-43	8,000	2,000	0,0451	0,625	0,1017	0,5798	1,973	5,2652	1,3163	3,0134	0,2886	0,1907	0,7055
800S200-54	8,000	2,000	0,0566	0,625	0,1017	0,7245	2,4653	6,5481	1,6370	3,0063	0,3549	0,2346	0,6999
1000S162-33	10,000	1,625	0,0346	0,500	0,1017	0,4812	1,6374	6,1627	1,2325	3,5787	0,1302	0,0981	0,5203
1000S162-43	10,000	1,625	0,0451	0,500	0,1017	0,6249	2,1265	7,9687	1,5937	3,5709	0,1659	0,1251	0,5152
1000S162-54	10,000	1,625	0,0566	0,500	0,1017	0,7811	2,6579	9,9126	1,9825	3,5624	0,2029	0,1532	0,5096
1000S162-68	10,000	1,625	0,0713	0,500	0,1017	0,9789	3,3309	12,3459	2,4692	3,5514	0,2472	0,1870	0,5025
1000S162-97	10,000	1,625	0,1017	0,500	0,1017	1,3812	4,7000	17,1961	3,4392	3,5284	0,3286	0,2495	0,4877
1000S200-33	10,000	2,000	0,0346	0,625	0,1017	0,5158	1,7551	6,9773	1,3955	3,6780	0,2387	0,1514	0,6802
1000S200-43	10,000	2,000	0,0451	0,625	0,1017	0,6700	2,2799	9,0287	1,8057	3,6709	0,3054	0,1938	0,6751
1000S200-54	10,000	2,000	0,0566	0,625	0,1017	0,8377	2,8505	11,2405	2,2481	3,6631	0,3755	0,2385	0,6695
1000S200-68	10,000	2,000	0,0713	0,625	0,1017	1,0502	3,5735	14,0148	2,803	3,6531	0,4607	0,2929	0,6624
1000S200-97	10,000	2,000	0,1017	0,625	0,1017	1,4829	5,046	19,5651	3,9130	3,6323	0,6217	0,3961	0,6475
1000S250-33	10,000	2,500	0,0346	0,625	0,1017	0,5504	1,8729	7,8363	1,5673	3,7733	0,4101	0,2127	0,8632
1000S250-43	10,000	2,500	0,0451	0,625	0,1017	0,7151	2,4334	10,1461	2,0292	3,7667	0,5264	0,2731	0,8580
1000S250-54	10,000	2,500	0,0566	0,625	0,1017	0,8943	3,0431	12,6396	2,5279	3,7594	0,6496	0,3372	0,8523
1000S250-68	10,000	2,500	0,0713	0,625	0,1017	1,1215	3,8161	15,7720	3,1544	3,7501	0,8006	0,4158	0,8449
1000S250-97	10,000	2,500	0,1017	0,625	0,1017	1,5846	5,3921	22,0561	4,4112	3,7308	1,0908	0,5671	0,8297
1200S162-33	12,000	1,625	0,0346	0,500	0,1017	0,5504	1,8729	9,7294	1,6216	4,2044	0,1350	0,0991	0,4953
1200S162-43	12,000	1,625	0,0451	0,500	0,1017	0,7151	2,4334	12,5911	2,0985	4,1961	0,1719	0,1263	0,4903
1200S162-54	12,000	1,625	0,0566	0,500	0,1017	0,8943	3,0431	15,6771	2,6128	4,1869	0,2102	0,1547	0,4848
1200S162-68	12,000	1,625	0,0713	0,500	0,1017	1,1215	3,8161	19,5487	3,2581	4,1751	0,2561	0,1889	0,4779
1200S162-97	12,000	1,625	0,1017	0,500	0,1017	1,5846	5,3921	27,2969	4,5495	4,1504	0,3403	0,2520	0,4634
1200S200-33	12,000	2,000	0,0346	0,625	0,1017	0,585	1,9906	10,9140	1,8190	4,3193	0,2487	0,1531	0,6520
1200S200-43	12,000	2,000	0,0451	0,625	0,1017	0,7602	2,5869	14,1330	2,3555	4,3117	0,3182	0,1960	0,6470
1200S200-54	12,000	2,000	0,0566	0,625	0,1017	0,9509	3,2357	17,6093	2,9349	4,3033	0,3913	0,2413	0,6414
1200S200-68	12,000	2,000	0,0713	0,625	0,1017	1,1928	4,0588	21,9780	3,6630	4,2925	0,4800	0,2963	0,6344
1200S200-97	12,000	2,000	0,1017	0,625	0,1017	1,6863	5,7382	30,7482	5,1247	4,2701	0,6475	0,4008	0,6197
1200S250-33	12,000	2,500	0,0346	0,625	0,1017	0,6196	2,1083	12,1524	2,0254	4,4287	0,42900	0,2156	0,8321
1200S250-43	12,000	2,500	0,0451	0,625	0,1017	0,8053	2,7403	15,7444	2,6241	4,4216	0,5507	0,2769	0,8269
1200S250-54	12,000	2,500	0,0566	0,625	0,1017	1,0075	3,4283	19,6277	3,2713	4,4138	0,6794	0,3418	0,8212
1200S250-68	12,000	2,500	0,0713	0,625	0,1017	1,2641	4,3014	24,5144	4,0857	4,4038	0,8373	0,4216	0,8139
1200S250-97	12,000	2,500	0,1017	0,625	0,1017	1,7880	6,0842	34,3477	5,7246	4,3829	1,1407	0,5752	0,7987

Section Designations and Gross Properties

	Section Geometry					Gross Section Properties							
Designation	Web Depth D (in)	Flange Width B (in)	Design Thk. t (in)	Lip Length d (in)	Bend Radius R (in)	Area (in²)	Weight (lbf/ft)	Ixx (in⁴)	Sxx (in³)	Rx (in)	Iyy (in⁴)	Syy (in³)	Ry (in)
250T162-33	2,500	1,625	0,0346	0,000	0,1017	0,1930	0,6568	0,2067	0,1654	1,0349	0,0544	0,0475	0,5307
250T162-43	2,500	1,625	0,0451	0,000	0,1017	0,2504	0,8522	0,2659	0,2127	1,0304	0,0701	0,0615	0,529
250T162-45	2,500	1,625	0,0566	0,000	0,1017	0,3127	1,0641	0,3288	0,2631	1,0254	0,0869	0,0766	0,5271
350T162-33	3,500	1,625	0,0346	0,000	0,1017	0,2276	0,7745	0,4432	0,2533	1,3954	0,0607	0,0499	0,5162
350T162-43	3,500	1,625	0,0451	0,000	0,1017	0,2955	1,0057	0,5717	0,3267	1,3908	0,0783	0,0647	0,5146
350T162-54	3,500	1,625	0,0566	0,000	0,1017	0,3693	1,2567	0,7093	0,4053	1,3858	0,0971	0,0806	0,5128
362T162-33	3,625	1,625	0,0346	0,000	0,1017	0,2319	0,7893	0,4804	0,2651	1,4392	0,0613	0,0502	0,5142
362T162-43	3,625	1,625	0,0451	0,000	0,1017	0,3012	1,0249	0,6199	0,3420	1,4346	0,0791	0,0650	0,5125
362T162-54	3,625	1,625	0,0566	0,000	0,1017	0,3764	1,2808	0,7692	0,4244	1,4295	0,0982	0,0809	0,5107
400T162-33	4,000	1,625	0,0346	0,000	0,1017	0,2449	0,8334	0,6031	0,3015	1,5692	0,0631	0,0508	0,5078
400T162-43	4,000	1,625	0,0451	0,000	0,1017	0,3181	1,0824	0,7786	0,3893	1,5645	0,0815	0,0658	0,5061
400T162-54	4,000	1,625	0,0566	0,000	0,1017	0,3976	1,3530	0,967	0,4835	1,5594	0,1011	0,0820	0,5043
400T162-33	4,000	2,000	0,0346	0,000	0,1017	0,2709	0,9217	0,7051	0,3525	1,6134	0,1114	0,0753	0,6414
400T162-43	4,000	2,000	0,0451	0,000	0,1017	0,3519	1,1975	0,9109	0,4554	1,6088	0,1440	0,0976	0,6397
400T162-54	4,000	2,000	0,0566	0,000	0,1017	0,4401	1,4975	1,1320	0,5660	1,6038	0,1791	0,1217	0,6379
550T162-33	5,500	1,625	0,0346	0,000	0,1017	0,2968	1,010	1,2751	0,4637	2,0726	0,0689	0,0527	0,4817
550T162-43	5,500	1,625	0,0451	0,000	0,1017	0,3857	1,3126	1,6494	0,5998	2,0678	0,0889	0,0683	0,4801
550T162-54	5,500	1,625	0,0566	0,000	0,1017	0,4825	1,6419	2,0526	0,7464	2,0625	0,1104	0,0851	0,4783
600T162-33	6,000	1,625	0,0346	0,000	0,1017	0,3141	1,0689	1,5704	0,5235	2,2359	0,0704	0,0532	0,4733
600T162-43	6,000	1,625	0,0451	0,000	0,1017	0,4083	1,3893	2,0323	0,6774	2,2310	0,0908	0,0689	0,4716
600T162-54	6,000	1,625	0,0566	0,000	0,1017	0,5108	1,7382	2,5305	0,8435	2,2257	0,1128	0,0858	0,4698
600T200-33	6,000	2,000	0,0346	0,000	0,1017	0,3401	1,1572	1,8013	0,6004	2,3015	0,1253	0,0792	0,6071
600T200-43	6,000	2,000	0,0451	0,000	0,1017	0,4421	1,5044	2,3322	0,7774	2,2967	0,1621	0,1027	0,6055
600T200-54	6,000	2,000	0,0566	0,000	0,1017	0,5533	1,8827	2,9054	0,9685	2,2916	0,2016	0,1281	0,6037
800T200-33	8,000	2,000	0,0346	0,000	0,1017	0,4093	1,3927	3,5779	0,8945	2,9567	0,1345	0,0815	0,5733
800T200-43	8,000	2,000	0,0451	0,000	0,1017	0,5323	1,8114	4,6382	1,1595	2,9518	0,1740	0,1057	0,5717
800T200-54	8,000	2,000	0,0566	0,000	0,1017	0,6665	2,2679	5,7858	1,4465	2,9464	0,2165	0,1319	0,570
1000T150-33	10,000	1,500	0,0346	0,000	0,1017	0,4439	1,5104	5,3145	1,0629	3,4602	0,0621	0,0474	0,3741
1200T150-33	12,000	1,500	0,0346	0,000	0,1017	0,5131	1,7459	8,4882	1,4147	4,0674	0,0639	0,0479	0,3529

Web Depth-to-Thickness Ratios [1][2][3] (h/t)

Designation	Web Depth D (mm)	33 mil 0,0346 (in)	43 mil 0,0451 (in)	54 mil 0,0566 (in)	68 mil 0,0713 (in)	97 mil 0,1017 (in)
250S	2,500	69	53	44	33	23
350S	3,500	98	75	60	47	33
362S	3,625	101	78	62	49	34
400S	4,000	112	86	68	54	38
550S	5,500	155	119	95	75	53
600S	6,000	170	130	104	82	58
800S	8,000	-	175	139	110	77
1000S	10,000	-	-	174	138	97
1200S	12,000	-	-	-	167	117

Torisonal Properties								
Designation	Design Thk. t (in)	J (in⁴)	Cw (in⁶)	ro (in)	xo (in)	m (in)	j (in)	β
250S162-33	0,0346	0,0000885	0,1461	1,896	-1,4683	0,8592	1,839	0,4001
250S162-43	0,0451	0,0001944	0,1843	1,882	-1,4558	0,8523	1,829	0,4015
250S162-45	0,0566	0,0003808	0,2229	1,867	-1,4421	0,8446	1,818	0,4031
350S162-33	0,0346	0,0001023	0,2767	2,023	-1,3227	0,7959	2,089	0,5726
350S162-43	0,0451	0,0002249	0,3502	2,010	-1,3105	0,7890	2,083	0,5749
350S162-54	0,0566	0,0004412	0,4256	1,996	-1,2972	0,7816	2,076	0,5775
350S200-33	0,0346	0,0001161	0,5406	2,393	-1,7583	1,0386	2,346	0,4602
350S200-43	0,0451	0,0002555	0,6869	2,380	-1,7459	1,0317	2,337	0,4617
350S200-54	0,0566	0,0005017	0,8381	2,365	-1,7324	1,0241	2,327	0,4633
350S200-68	0,0713	0,0009942	1,0183	2,346	-1,7150	1,0143	2,315	0,4655
350S200-97	0,1017	0,0028335	1,3467	2,306	-1,6791	0,9943	2,290	0,4699
350S250-33	0,0346	0,0001299	0,9037	2,832	-2,2306	1,2927	2,748	0,3796
350S250-43	0,0451	0,0002861	1,1513	2,818	-2,2179	1,2857	2,738	0,3805
350S250-54	0,0566	0,0005621	1,4089	2,802	-2,2041	1,2779	2,727	0,3814
350S250-68	0,0713	0,0011151	1,7184	2,783	-2,1864	1,2681	2,713	0,3827
350S250-97	0,1017	0,0031841	2,2911	2,742	-2,1497	1,2477	2,684	0,3853
362S162-33	0,0346	0,0001040	0,2969	2,045	-1,3068	0,7887	2,131	0,5915
362S162-43	0,0451	0,0002288	0,3759	2,032	-1,2947	0,7819	2,126	0,5939
362S162-54	0,0566	0,0004488	0,4569	2,017	-1,2814	0,7745	2,120	0,5965
400S162-33	0,0346	0,0001092	0,3628	2,114	-1,2617	0,7682	2,273	0,6439
400S162-43	0,0451	0,0002402	0,4598	2,102	-1,2497	0,7614	2,269	0,6464
400S162-54	0,0566	0,0004715	0,5595	2,088	-1,2367	0,7541	2,265	0,6492
400S200-33	0,0346	0,0001195	0,5870	2,395	-1,5956	0,9535	2,473	0,5560
400S200-43	0,0451	0,0002708	0,8863	2,446	-1,6741	1,0002	2,462	0,5316
400S200-54	0,0566	0,0005319	1,0829	2,431	-1,6607	0,9926	2,454	0,5335
550S162-33	0,0346	0,0001299	0,7125	2,455	-1,1120	0,6972	3,053	0,7949
550S162-43	0,0451	0,0002861	0,9054	2,444	-1,1007	0,6907	3,059	0,7971
550S162-54	0,0566	0,0005621	1,1048	2,431	-1,0884	0,6837	3,066	0,7995
550S200-33	0,0346	0,0001437	1,3263	2,739	-1,5061	0,9247	3,029	0,6976
550S200-43	0,0451	0,0003167	1,6913	2,727	-1,4944	0,9181	3,027	0,6996
550S200-54	0,0566	0,0006226	2,0722	2,713	-1,4816	0,9108	3,026	0,7018
550S200-68	0,0713	0,0012359	2,5308	2,696	-1,4652	0,9015	3,024	0,7047
550S200-97	0,1017	0,0035347	3,3839	2,661	-1,4313	0,8823	3,022	0,7106
550S250-33	0,0346	0,0001575	2,2190	3,092	-1,9428	1,1694	3,246	0,6052
550S250-43	0,0451	0,0003473	2,8373	3,079	-1,9307	1,1626	3,241	0,6069
550S250-54	0,0566	0,0006830	3,4863	3,065	-1,9174	1,1552	3,235	0,6087
550S250-68	0,0713	0,0013567	4,2742	3,047	-1,9004	1,1456	3,228	0,6110
550S250-97	0,1017	0,0038854	5,7610	3,009	-1,8652	1,1260	3,214	0,6159

Torisonal Properties								
Designation	Design Thk. t (in)	J (in⁴)	Cw (in⁶)	ro (in)	xo (in)	m (in)	j (in)	ß
600S162-33	0,0346	0,0001368	0,8615	2,583	-1,0706	0,6767	3,387	0,8282
600S162-43	0,0451	0,0003014	1,0952	2,572	-1,0596	0,6704	3,398	0,8303
600S162-54	0,0566	0,0005923	1,3372	2,560	-1,0475	0,6634	3,409	0,8325
600S200-33	0,0346	0,0001506	1,5934	2,852	-1,4555	0,9007	3,276	0,7395
600S200-43	0,0451	0,0003320	2,0332	2,840	-1,4439	0,8942	3,277	0,7414
600S200-54	0,0566	0,0006528	2,4925	2,827	-1,4313	0,8870	3,278	0,7436
800S200-33	0,0346	0,0001782	2,9713	3,358	-1,2862	0,8174	4,563	0,8533
800S200-43	0,0451	0,0003931	3,7972	3,347	-1,2754	0,8111	4,576	0,8548
800S200-54	0,0566	0,0007737	4,6628	3,335	-1,2636	0,8043	4,591	0,8565
1000S162-33	0,0346	0,0001920	2,6919	3,711	-0,8309	0,5503	7,388	0,9499
1000S162-43	0,0451	0,0004237	3,4301	3,700	-0,8215	0,5447	7,444	0,9507
1000S162-54	0,0566	0,0008341	4,1984	3,689	-0,8112	0,5385	7,507	0,9516
1000S162-68	0,0713	0,0016588	5,1211	3,674	-0,7982	0,5306	7,591	0,9528
1000S162-97	0,1017	0,0047619	6,8270	3,645	-0,7712	0,5143	7,774	0,9552
1000S200-33	0,0346	0,0002058	4,8756	3,915	-1,1553	0,7494	6,320	0,9129
1000S200-43	0,0451	0,0004543	6,2362	3,904	-1,1452	0,7435	6,349	0,9140
1000S200-54	0,0566	0,0008945	7,6652	3,893	-1,1342	0,7369	6,382	0,9151
1000S200-68	0,0713	0,0017796	9,4009	3,878	-1,1200	0,7286	6,425	0,9166
1000S200-97	0,1017	0,0051126	12,6791	3,847	-1,0909	0,7114	6,519	0,9196
1000S250-33	0,0346	0,0002196	8,1726	4,161	-1,5261	0,9715	5,811	0,8655
1000S250-43	0,0451	0,0004849	10,4814	4,150	-1,5153	0,9652	5,826	0,8667
1000S250-54	0,0566	0,0009550	12,9215	4,138	-1,5036	0,9584	5,843	0,8680
1000S250-68	0,0713	0,0019004	15,9087	4,122	-1,4885	0,9497	5,866	0,8696
1000S250-97	0,1017	0,0054632	21,6321	4,090	-1,4574	0,9317	5,916	0,8730
1200S162-33	0,0346	0,0002196	4,0610	4,299	-0,7493	0,5040	10,260	0,9696
1200S162-43	0,0451	0,0004849	5,1772	4,289	-0,7405	0,4986	10,348	0,9702
1200S162-54	0,0566	0,0009550	6,3402	4,278	-0,7310	0,4927	10,448	0,9708
1200S162-68	0,0713	0,0019004	7,7388	4,263	-0,7188	0,4853	10,579	0,9716
1200S162-97	0,1017	0,0054632	10,3309	4,233	-0,6938	0,4699	10,866	0,9731
1200S200-33	0,0346	0,0002334	7,3384	4,493	-1,0504	0,6925	8,543	0,9453
1200S200-43	0,0451	0,0005154	9,3913	4,482	-1,0409	0,6868	8,592	0,9461
1200S200-54	0,0566	0,0010154	11,5501	4,471	-1,0305	0,6806	8,647	0,9469
1200S200-68	0,0713	0,0020212	14,1763	4,457	-1,0173	0,6726	8,719	0,9479
1200S200-97	0,1017	0,0058138	19,1497	4,427	-0,9899	0,6562	8,876	0,9500
1200S250-33	0,0346	0,0002473	12,3221	4,718	-1,3977	0,9050	7,571	0,9122
1200S250-43	0,0451	0,0005460	15,8121	4,707	-1,3875	0,8990	7,600	0,9131
1200S250-54	0,0566	0,0010759	19,5054	4,696	-1,3764	0,8925	7,632	0,9141
1200S250-68	0,0713	0,0021421	24,0337	4,681	-1,3621	0,8841	7,674	0,9153
1200S250-97	0,1017	0,0061644	32,7342	4,650	-1,3327	0,8667	7,765	0,9179

Torisonal Properties								
Designation	Design Thk. t (in)	J (in⁴)	Cw (in⁶)	ro (in)	xo (in)	m (in)	j (in)	ß
250T162-33	0,0346	0,000077	0,0586	1,604	-1,1039	0,6402	1,636	0,5261
250T162-43	0,0451	0,0001698	0,0750	1,598	-1,1011	0,6383	1,629	0,5253
250T162-45	0,0566	0,0003339	0,0923	1,592	-1,098	0,6361	1,622	0,5244
350T162-33	0,0346	0,0000908	0,1290	1,784	-0,9846	0,5914	1,973	0,6954
350T162-43	0,0451	0,0002004	0,1655	1,778	-0,9816	0,5894	1,966	0,6953
350T162-54	0,0566	0,0003944	0,2041	1,772	-0,9783	0,5873	1,958	0,6952
362T162-33	0,0346	0,0000926	0,1401	1,811	-0,9717	0,5858	2,027	0,7121
362T162-43	0,0451	0,0002042	0,1798	1,805	-0,9687	0,5838	2,020	0,7121
362T162-54	0,0566	0,0004019	0,2218	1,799	-0,9654	0,5817	2,012	0,7120
400T162-33	0,0346	0,0000977	0,1765	1,896	-0,9351	0,5697	2,204	0,7567
400T162-43	0,0451	0,0002157	0,2267	1,890	-0,9321	0,5677	2,197	0,7568
400T162-54	0,0566	0,0004246	0,2799	1,884	-0,9288	0,5656	2,189	0,7569
400T162-33	0,0346	0,0001081	0,3092	2,137	-1,2459	0,7435	2,314	0,6601
400T162-43	0,0451	0,0002386	0,3977	2,131	-1,2429	0,7415	2,307	0,6599
400T162-54	0,0566	0,0004699	0,4919	2,125	-1,2397	0,7394	2,299	0,6597
550T162-33	0,0346	0,0001184	0,3731	2,278	-0,8146	0,5131	3,141	0,8722
550T162-43	0,0451	0,0002615	0,4799	2,273	-0,8117	0,5112	3,135	0,8724
550T162-54	0,0566	0,0005153	0,5937	2,266	-0,8084	0,5091	3,128	0,8728
600T162-33	0,0346	0,0001254	0,4576	2,415	-0,7816	0,4967	3,534	0,8953
600T162-43	0,0451	0,0002768	0,5888	2,410	-0,7787	0,4948	3,529	0,8956
600T162-54	0,0566	0,0005455	0,7286	2,403	-0,7754	0,4927	3,523	0,8959
600T200-33	0,0346	0,0001357	0,8005	2,606	-1,0604	0,6603	3,340	0,8344
600T200-43	0,0451	0,0002998	1,0318	2,600	-1,0574	0,6583	3,334	0,8346
600T200-54	0,0566	0,0005908	1,2791	2,594	-1,0541	0,6562	3,327	0,8348
800T200-33	0,0346	0,0001633	1,5707	3,151	-0,9263	0,5938	4,893	0,9136
800T200-43	0,0451	0,0003609	2,0267	3,145	-0,9234	0,5919	4,888	0,9138
800T200-54	0,0566	0,0007117	2,5152	3,139	-0,9202	0,5898	4,883	0,9141
1000T150-33	0,0346	0,0001771	1,2064	3,519	-0,5212	0,3497	8,661	0,9781
1200T150-33	0,0346	0,0002047	1,8304	4,109	-0,4645	0,3161	12,188	0,9872

Effective Section Properties									
	Design Thk.	Fy = 37 ksi, Fu = 52 ksi							
Designation	t (in)	Ixe (in⁴)	Sxe (in³)	Fya (in)	Mal (in)	Mad (in)	Lu (in)	Va (lb)	Va (lb)
250S162-33	0,0346	0,2222	0,1722	40,4	3,815	3,824	39,747	1069	208
250S162-43	0,0451	0,2965	0,2362	41,3	5,232	5,287	39,482	1381	200
250S162-45	0,0566	0,3669	0,2936	42,1	6,505	6,509	38,991	1715	192
350S162-33	0,0346	0,4816	0,2673	40,4	5,922	5,592	40,073	1084	501
350S162-43	0,0451	0,6428	0,3657	41,3	8,101	7,859	39,648	1842	645
350S162-54	0,0566	0,7989	0,4566	42,1	10,117	10,122	39,109	2500	688
350S200-33	0,0346	0,5514	0,3009	39,8	6,666	6,374	49,024	1084	501
350S200-43	0,0451	0,7368	0,4105	40,5	9,094	8,982	48,751	1842	645
350S200-54	0,0566	0,9435	0,5386	41,2	11,933	11,921	48,813	2500	688
350S200-68	0,0713	1,1689	0,6680	42,0	14,799	14,801	48,330	3120	670
350S200-97	0,1017	1,6060	0,9174	43,7	20,326	20,314	47,265	4365	633
350S250-33	0,0346	0,6142	0,3238	39,3	7,174	6,785	58,088	1084	501
350S250-43	0,0451	0,8149	0,4355	39,8	9,648	9,645	57,253	1842	645
350S250-54	0,0566	1,0334	0,5591	40,4	12,387	12,929	56,914	2500	688
350S250-68	0,0713	1,3471	0,7535	41,0	16,695	17,234	57,663	3120	670
350S250-97	0,1017	1,8996	1,0852	42,4	24,043	24,031	57,909	4365	633
362S162-33	0,0346	0,5224	0,2800	40,4	6,204	5,817	40,078	1084	537
362S162-43	0,0451	0,6973	0,3829	41,3	8,484	8,185	39,641	1842	693
362S162-54	0,0566	0,8668	0,4784	42,1	10,598	10,604	39,098	2598	769
400S162-33	0,0346	0,6567	0,3194	40,4	7,076	6,496	40,056	989	589
400S162-43	0,0451	0,8764	0,4362	41,3	9,664	9,174	39,592	1842	834
400S162-54	0,0566	1,0906	0,5454	42,1	12,084	12,09	39,039	2893	1033
400S200-33	0,0346	0,7144	0,3357	39,8	7,437	6,835	47,380	989	589
400S200-43	0,0451	1,0014	0,4886	40,5	10,826	10,452	48,891	1842	834
400S200-54	0,0566	1,2832	0,6409	41,2	14,199	13,931	48,917	2893	1033
550S162-33	0,0346	1,3895	0,4933	40,4	10,929	9,222	39,603	705	703
550S162-43	0,0451	1,8524	0,6707	41,3	14,861	13,185	39,087	1568	1193
550S162-54	0,0566	2,3110	0,8405	42,1	18,621	17,757	38,503	2901	1748
550S200-33	0,0346	1,5751	0,5511	39,8	12,210	10,476	49,416	705	703
550S200-43	0,0451	2,0978	0,7465	40,5	16,538	14,964	48,822	1568	1193
550S200-54	0,0566	2,6891	0,9768	41,2	21,642	20,150	48,812	2901	1748
550S200-68	0,0713	3,3453	1,2165	42,0	26,953	26,959	48,186	4604	2185
550S200-97	0,1017	4,6339	1,6848	43,7	37,328	37,320	46,760	7187	2351
550S250-33	0,0346	1,7138	0,5769	39,3	12,781	10,970	58,182	705	703
550S250-43	0,0451	2,2899	0,7867	39,8	17,429	15,766	58,160	1568	1193
550S250-54	0,0566	2,8973	1,0047	40,4	22,260	21,379	57,388	2901	1748
550S250-68	0,0713	3,7705	1,3441	41,0	29,779	28,912	57,832	4604	2185
550S250-97	0,1017	5,3748	1,9542	42,4	43,297	43,289	58,194	7187	2351

Effective Section Properties									
	Design Thk.	Fy = 37 ksi, Fu = 52 ksi							
Designation	t (in)	Ixe (in⁴)	Sxe (in³)	Fya (in)	Mal (in)	Mad (in)	Lu (in)	Va (lb)	Va (lb)
600S162-33	0,0346	1,6888	0,5443	40,4	12,059	10,113	38,484	644	644
600S162-43	0,0451	2,2789	0,7565	41,3	16,761	14,515	38,846	1430	1235
600S162-54	0,0566	2,8447	0,9483	42,1	21,011	19,626	38,254	2839	1943
600S200-33	0,0346	1,8993	0,6006	39,8	13,306	11,506	47,750	644	644
600S200-43	0,0451	2,5735	0,8401	40,5	18,613	16,481	48,687	1430	1235
600S200-54	0,0566	3,2986	1,0983	41,2	24,335	22,259	48,676	2839	1943
800S200-33	0,0346	3,5208	0,7920	39,8	17,547	15,499	41,790	477	477
800S200-43	0,0451	5,0030	1,2079	40,5	26,761	22,431	46,427	1059	1059
800S200-54	0,0566	6,5348	1,6321	41,2	36,160	30,627	47,842	2100	2100
1000S162-33	0,0346	4,9936	0,8410	40,4	18,632	16,239	14,484	379	379
1000S162-43	0,0451	6,9941	1,2327	41,3	27,311	23,961	16,214	841	841
1000S162-54	0,0566	9,0338	1,6360	42,1	36,247	33,343	17,205	1666	1666
1000S162-68	0,0713	11,5473	2,1404	43,1	47,421	46,415	17,603	3341	3341
1000S162-97	0,1017	16,5593	3,1724	45,1	70,286	75,662	17,627	9366	6902
1000S200-33	0,0346	5,6159	0,9436	39,8	20,906	19,089	23,982	379	379
1000S200-43	0,0451	7,8043	1,3657	40,5	30,259	27,897	24,877	841	841
1000S200-54	0,0566	10,3589	1,8906	41,2	41,887	38,477	27,198	1666	1666
1000S200-68	0,0713	13,2308	2,4692	42,0	54,706	53,080	27,847	3341	3341
1000S200-97	0,1017	18,9354	3,6410	43,7	80,668	85,566	28,162	9366	6902
1000S250-33	0,0346	6,1483	1,0393	39,3	23,026	20,181	46,375	379	379
1000S250-43	0,0451	8,5674	1,5233	39,8	33,750	29,508	49,538	841	841
1000S250-54	0,0566	11,4740	2,1548	40,4	47,740	40,743	53,105	1666	1666
1000S250-68	0,0713	15,3713	3,0269	41,0	67,063	56,327	55,852	3341	3341
1000S250-97	0,1017	22,0547	4,4107	42,4	97,722	91,486	56,434	9366	6902
1200S162-33	0,0346	7,4764	1,0211	40,4	22,623	18,486	13,684	314	314
1200S162-43	0,0451	10,5477	1,5054	41,3	33,353	27,610	15,293	697	697
1200S162-54	0,0566	13,7234	2,0132	42,1	44,605	38,891	16,206	1381	1381
1200S162-68	0,0713	17,6917	2,6606	43,1	58,948	54,913	16,490	2768	2768
1200S162-97	0,1017	25,7602	4,0257	45,1	89,192	91,971	16,428	8074	7419
1200S200-33	0,0346	8,3823	1,1448	39,8	25,364	22,131	23,316	314	314
1200S200-43	0,0451	11,7204	1,6654	40,5	36,898	32,644	24,014	697	697
1200S200-54	0,0566	15,666	2,3202	41,2	51,405	45,456	26,263	1381	1381
1200S200-68	0,0713	20,1592	3,0576	42,0	67,744	63,435	26,812	2768	2768
1200S200-97	0,1017	29,2339	4,5919	43,7	101,737	104,573	27,045	8074	7419
1200S250-33	0,0346	9,0189	1,2121	39,3	26,855	23,730	31,715	314	314
1200S250-43	0,0451	12,4356	1,7251	39,8	38,220	34,945	30,894	697	697
1200S250-54	0,0566	16,2928	2,3261	40,4	51,537	48,604	30,706	1381	1381
1200S250-68	0,0713	21,9853	3,2920	41,0	72,937	67,788	33,808	2768	2768
1200S250-97	0,1017	32,8523	5,1828	42,4	114,827	111,978	38,264	8074	7419

Effective Section Properties									
	Design Thk.	Fy = 37 ksi, Fu = 52 ksi							
Designation	t (in)	Ixe (in⁴)	Sxe (in³)	Fya (in)	Mal (in)	Mad (in)	Lu (in)	Va (lb)	Va (lb)
250T162-33	0,0346	0,1664	0,1126	40,2	2,494	2,494	36,263	1069	208
250T162-43	0,0451	0,2293	0,1599	40,9	3,543	3,543	35,144	1381	200
250T162-45	0,0566	0,3021	0,2170	41,7	4,809	4,809	34,171	1715	192
350T162-33	0,0346	0,3674	0,1821	40,2	4,034	4,034	36,375	1084	501
350T162-43	0,0451	0,503	0,2557	40,9	5,665	5,665	35,231	1842	645
350T162-54	0,0566	0,6595	0,3438	41,7	7,617	7,617	34,196	2500	688
362T162-33	0,0346	0,3995	0,1916	40,2	4,246	4,246	36,338	1084	537
362T162-43	0,0451	0,5465	0,2688	40,9	5,955	5,955	35,194	1842	693
362T162-54	0,0566	0,7161	0,3610	41,7	7,999	7,999	34,155	2598	769
400T162-33	0,0346	0,5057	0,2215	40,2	4,907	4,907	36,183	989	589
400T162-43	0,0451	0,6904	0,3096	40,9	6,859	6,859	35,042	1842	834
400T162-54	0,0566	0,9033	0,4146	41,7	9,186	9,186	33,996	2893	1033
400T162-33	0,0346	0,5433	0,2290	39,7	5,074	5,074	43,766	989	589
400T162-43	0,0451	0,7438	0,3210	40,3	7,112	7,112	42,789	1842	834
400T162-54	0,0566	0,9766	0,4316	40,9	9,562	9,562	41,890	2893	1033
550T162-33	0,0346	1,0381	0,3257	40,2	7,216	7,216	32,773	705	703
550T162-43	0,0451	1,4888	0,4947	40,9	10,961	10,961	34,067	1568	1193
550T162-54	0,0566	1,9378	0,6564	41,7	14,542	14,542	33,019	2901	1748
600T162-33	0,0346	1,2489	0,3541	40,2	7,845	7,845	31,162	644	644
600T162-43	0,0451	1,8431	0,5642	40,9	12,500	12,500	33,677	1430	1235
600T162-54	0,0566	2,3955	0,7466	41,7	16,542	16,542	32,631	2839	1943
600T200-33	0,0346	1,3034	0,3535	39,7	7,831	7,831	37,506	644	644
600T200-43	0,0451	1,9719	0,5847	40,3	12,955	12,955	41,811	1430	1235
600T200-54	0,0566	2,5695	0,7762	40,9	17,197	17,197	40,95	2839	1943
800T200-33	0,0346	2,4064	0,4708	39,7	10,432	10,432	32,155	477	477
800T200-43	0,0451	3,6324	0,7709	40,3	17,079	17,079	36,016	1059	1059
800T200-54	0,0566	5,2045	1,1989	40,9	26,563	26,563	39,462	2100	2100
1000T150-33	0,0346	3,6094	0,5524	40,4	12,239	12,239	8,209	379	379
1200T150-33	0,0346	5,3947	0,6730	40,4	14,911	14,911	7,098	314	314

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