

PHYSICAL PROPERTIES

STRUCTURAL STUD PHYSICAL PROPERTIES

Section	Design Thickness (in)	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
		Area (in ²)	Weight (lb/ft)	I _{xx} (in ⁴)	R _x (in)	I _{yy} (in ⁴)	R _y (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	J _x ¹⁰⁰⁰ (in ⁴)	Cw (in ⁶)	Xo (in)	Ro (in)	β
250S137-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	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	0.0451	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	0.0566	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	0.0713	0.443	1.51	0.450	1.007	0.162	0.605	0.450	0.360	8.21	1891	1.250	0.450	0.357	12.11	2866	1.255	0.752	0.262	-1.474	1.885	0.389
350S137-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	0.258	0.88	0.508	1.404	0.098	0.617	0.508	0.257	5.09	1024	1.845					0.103	0.273	-1.351	2.044	0.563	
350S162-43	0.0451	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	0.0566	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	0.148	-1.331	2.019	0.566
350S162-68	0.0713	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	0.0346	0.292	0.99	0.598	1.431	0.175	0.773	0.598	0.280	5.53	1024	1.908					0.117	0.535	-1.789	2.418	0.452	
350S200-43	0.0451	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	0.0566	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	1.863	0.503	0.827	-1.769	2.393	0.453
350S200-68	0.0713	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
350S250-33	0.0346	0.327	1.11	0.702	1.466	0.296	0.951	-	-	-	-	-					0.130	0.896	-2.263	2.859	0.373	
350S250-43	0.0451	0.424	1.44	0.906	1.461	0.380	0.946	0.906	0.433	8.56	1739	1.890					0.288	1.141	-2.251	2.846	0.374	
350S250-54	0.0566	0.528	1.80	1.118	1.455	0.467	0.940	1.118	0.559	11.05	2253	1.853	1.111	0.500	14.98	3372	1.945	0.564	1.394	-2.242	2.834	0.374
350S250-68	0.0713	0.657	2.24	1.376	1.447	0.570	0.931	1.376	0.747	14.77	2774	1.784	1.376	0.662	19.82	4202	1.884	1.114	1.695	-2.235	2.820	0.372
362S137-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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
362S162-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	0.297	1.01	0.648	1.478	0.177	0.772	0.648	0.291	5.76	1024	1.983					0.118	0.571	-1.770	2.432	0.470	
362S200-43	0.0451	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	0.0566	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	0.0713	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
362S250-33	0.0346	0.331	1.13	0.760	1.514	0.299	0.951	-	-	-	-	-					0.132	0.957	-2.242	2.868	0.389	
362S250-43	0.0451	0.430	1.46	0.980	1.510	0.385	0.946	0.980	0.451	8.91	1739	1.963					0.292	1.219	-2.230	2.854	0.390	
362S250-54	0.0566	0.535	1.82	1.210	1.504	0.473	0.940	1.210	0.583	11.52	2341	1.923	1.203	0.521	15.60	3372	2.019	0.571	1.489	-2.222	2.843	0.389
362S250-68	0.0713	0.666	2.27	1.490	1.496	0.578	0.931	1.490	0.782	15.26	2884	1.848	1.490	0.690	20.67	4370	1.955	1.129	1.812	-2.213	2.829	0.388
400S137-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	0.275	0.94	0.692	1.586	0.103	0.611	0.692	0.299	5.91	976	2.143					0.110	0.358	-1.288	2.133	0.635	
400S162-43	0.0451	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	0.0566	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	0.0713	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	0.0346	0.310	1.05	0.812	1.619	0.183	0.769	0.812	0.326	6.44	976	2.209					0.124	0.689	-1.715	2.481	0.522	
400S200-43	0.0451	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	0.0566	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	0.0713	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
400S250-33	0.0346	0.344	1.17	0.948	1.659	0.310	0.949	-	-	-	-	-					0.137	1.155	-2.181	2.900	0.435	
400S250-43	0.0451	0.447	1.52	1.224	1.655	0.399	0.945	1.224	0.505	9.97	1739	2.182					0.303	1.473	-2.168	2.887</		

PHYSICAL PROPERTIES

STRUCTURAL STUD PHYSICAL PROPERTIES

Section	Design Thickness (in)	Gross Properties						33 ksi Effective Properties						50 ksi Effective Properties						Torsional Properties			
		Area (in ²)	Weight (lb/ft)	I _{xx} (in ⁴)	I _{yy} (in ⁴)	I _{xy} (in ⁴)	R _y (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	J _x ¹⁰⁰⁰ (in ⁴)	Cw (in ⁶)	Xo (in)	Ro (in)	β	
600S137-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.1017	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	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.1017	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	0.0346	0.379	1.29	2.075	2.340	0.209	0.743	2.059	0.617	12.20	638	3.135					0.151	1.577	-1.479	2.866	0.734		
600S200-43	0.0451	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	0.0566	0.613	2.09	3.319	2.327	0.328	0.732	3.319	1.106	24.07	2739	3.000	3.319	1.016	30.41	2823	3.102	0.655	2.461	-1.459	2.842	0.737	
600S200-68	0.0713	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	0.1017	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	
600S250-33	0.0346	0.413	1.41	2.383	2.401	0.356	0.928	-	-	-	-	-					0.165	2.641	-1.910	3.205	0.645		
600S250-43	0.0451	0.537	1.83	3.082	2.396	0.458	0.923	3.082	0.921	18.19	1416	3.130					0.364	3.379	-1.898	3.193	0.647		
600S250-54	0.0566	0.670	2.28	3.819	2.388	0.562	0.917	3.819	1.160	22.91	2739	3.114	3.763	1.079	32.31	2823	3.197	0.715	4.146	-1.889	3.180	0.647	
600S250-68	0.0713	0.836	2.84	4.727	2.378	0.688	0.908	4.727	1.508	32.82	4347	3.057	4.722	1.388	41.55	5350	3.153	1.416	5.071	-1.878	3.164	0.647	
600S250-97	0.1017	1.169	3.84	6.426	2.357	0.923	0.889	6.426	2.161	48.81	6911	3.003	6.422	2.063	69.38	10472	3.062	4.030	6.978	-1.857	3.130	0.648	
800S137-33 ¹	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.1017	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	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.1017	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	0.0346	0.448	1.52	4.096	3.023	0.227	0.712	4.096	0.812	16.04	474	4.410					0.179	2.945	-1.036	3.369	0.850		
800S200-43	0.0451	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	0.0566	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	44.89	2091	4.143	0.775	4.612	-1.286	3.346	0.852	
800S200-68	0.0713	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	0.1017	1.271	4.32	11.203	2.969	0.576	0.673	11.203	2.801	61.12	8843	4.000	11.203	2.801	96.63	10885	4.000	4.381	7.524	-1.253	3.292	0.855	
800S250-33	0.0346	0.483	1.64	4.645	3.102	0.389	0.897	-	-	-	-	-					0.193	4.933	-1.706	3.652	0.782		
800S250-43	0.0451	0.627	2.13	6.015	3.097	0.500	0.893	6.015	1.318	26.04	1051	4.213					0.425	6.320	-1.695	3.641	0.783		
800S250-54	0.0566	0.783	2.66	7.465	3.088	0.614	0.886	7.465	1.713	33.85	2091	4.133	7.370	1.543	46.20	2091	4.304	0.836	7.769	-1.686	3.628	0.784	
800S250-68	0.0713	0.978	3.33	9.261	3.077	0.752	0.877	9.261	2.220	48.33	4221	4.068	9.239	2.062	61.73	4221	4.177	1.658	9.526	-1.674	3.611	0.785	
800S250-97	0.1017	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	
1000S137-33 ¹	0.0346	0.457	1.55	5.589	3.498	0.077	0.409	-	-	-	-	-					0.182	1.576	-0.624	3.577	0.970		
1000S137-43	0.0451	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	0.0566	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	0.0713	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	0.1017	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	
1000S162-33	0.0346	0.483	1.64	6.198	3.583	0.132	0.522	-	-	-	-	-					0.193	2.671	-0.845	3.719	0.948		
1000S162-43	0.0451	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	0.0566	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	0.0713	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	5.080	-0.817	3.677	0.951	
1000S162-97	0.1017	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	
1000S200-33	0.0346	0.517	1.76	7.013	3.682	0.241	0.682	-	-	-	-	-					0.206	4.839	-1.172	3.924	0.911		
1000S200-43	0.0451	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	0.0566	0.839	2.86	11.278	3.666	0.378	0.671	10.953	1.984	39.20	1661	5.338	10.769	1.706	51.07	1661	5.665	0.896	7.595	-1.153			

PHYSICAL PROPERTIES

STRUCTURAL TRACK PHYSICAL PROPERTIES

Section	Design Thickness (in.)	Gross Properties							33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
		Area (in.)	Weight (lb/ft)	I _{xx} (in ⁴)	R _x (in.)	I _{yy} (in ⁴)	R _y (in.)	I _{xx} (in ⁴)	S _{xx} (in.)	Ma (in-k)	V _a (lb)	Y _{cg} (in.)	I _{xx} (in ⁴)	S _{xx} (in.)	Ma (in-k)	V _a (lb)	Y _{cg} (in.)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in.)	R _o (in.)	β	
250T125-33	0.0346	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	-0.771	1.365	0.680		
250T125-43	0.0451	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	0.0566	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	0.0713	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	
250T150-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	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	0.0451	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	0.0566	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	0.0713	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	
350T125-33	0.0346	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	-0.677	1.598	0.820		
350T125-43	0.0451	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	0.0566	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	0.0713	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	
350T150-33	0.0346	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	0.0451	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	0.0566	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	0.0713	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	0.0346	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	-1.297	2.077	0.610		
350T200-43	0.0451	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	0.0566	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	0.0713	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	
362T125-33	0.0346	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	-0.667	1.630	0.832		
362T125-43	0.0451	0.276	0.94	0.571	1.439	0.039	0.375	0.531	0.245	4.84	1739	2.035					0.187	0.090	-0.663	1.628	0.834		
362T125-54	0.0566	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	0.0713	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	-0.656	1.637	0.840	
362T150-33	0.0346	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	-0.865	1.772	0.762		
362T150-43	0.0451	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	0.0566	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	0.0713	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	
362T200-33	0.0346	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	-1.282	2.100	0.627		
362T200-43	0.0451	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	0.0566	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	-1.263	2.099	0.632	
362T200-68	0.0713	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	
400T125-33	0.0346	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	-0.639	1.728	0.863		
400T125-43	0.0451	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	0.0566	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	0.0713	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	
400T150-33	0.0346	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	-0.831	1.863	0.801		
400T150-43	0.0451	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	0.0566	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	0.0713	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	0.0346	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	-1.240	2.173	0.674		
400T200-43	0.0451	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	0.0566	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	0.0713	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	
550T125-33	0.0346	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	-0.547	2.146	0.935		
550T125-43	0.0451	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	0.0566	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	0.0713	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	
550T150-33	0.0346	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	0.0451	0.383	1.30	1.688	2.099	0.072	0.432	1.516	0.468	9.25	15												

PHYSICAL PROPERTIES

STRUCTURAL TRACK PHYSICAL PROPERTIES

Section	Design Thickness (in)	Gross Properties						33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties				
		Area (in ²)	Weight (lb/ft)	I _{xx} (in ⁴)	R _x (in)	I _{yy} (in ⁴)	R _y (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	M _a (in-k)	V _a (lb)	Y _{cg} (in)	I _{xx} (in ⁴)	S _{xx} (in ³)	M _a (in-k)	V _a (lb)	Y _{cg} (in)	J _x 1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in)	β
600T125-33	0.0346	0.294	1.00	1.428	2.204	0.034	0.339	1.258	0.297	5.87	822	3.635					0.117	0.237	-0.523	2.291	0.948	
600T125-43	0.0451	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	0.0566	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	0.393	-0.516	2.293	0.949
600T125-68	0.0713	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	0.1017	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
600T150-33	0.0346	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	-0.691	2.401	0.917	
600T150-43	0.0451	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	0.0566	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	2.400	0.919
600T150-68	0.0713	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	0.1017	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
600T200-33	0.0346	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	-1.057	2.648	0.841	
600T200-43	0.0451	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	0.0566	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	0.0713	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	0.1017	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
800T125-33 ¹	0.0346	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	-0.444	2.875	0.976	
800T125-43 ¹	0.0451	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	0.0566	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	0.0713	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	0.1017	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
800T150-33 ¹	0.0346	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	-0.593	2.978	0.960	
800T150-43	0.0451	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	0.0566	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	0.0713	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	0.1017	1.116	3.80	8.979	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	0.0346	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	-0.925	3.196	0.916	
800T200-43	0.0451	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	0.0566	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	0.919
800T200-68	0.0713	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	0.1017	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
1000T125-33 ¹	0.0346	0.432	1.47	5.089	3.431	0.037	0.292	-	-	-	-	-					0.173	0.754	-0.386	3.465	0.988	
1000T125-43 ¹	0.0451	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	0.0566	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	0.0713	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	0.1017	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
1000T150-33 ¹	0.0346	0.450	1.53	5.531	3.507	0.062	0.372	-	-	-	-	-					0.179	1.246	-0.521	3.565	0.979	
1000T150-43 ¹	0.0451	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	0.0566	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	0.0713	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	0.1017	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
1000T200-33 ¹	0.0346	0.484	1.65	6.416	3.640	0.142	0.541	-	-	-	-	-					0.193	2.728	-0.823	3.771	0.952	
1000T200-43 ¹	0.0451	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	0.0566	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	0.0713	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	0.1017	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
1200T125-33 ¹	0.0346	0.502	1.71	8.147	4.030	0.038	0.274	-	-	-	-	-					0.2	1.134	-0.342	4.054	0.993	
1200T125-43 ¹	0.0451	0.654	2.22	10.615	4.030	0.049	0.272	-	-	-	-	-					0.443	1.462	-0.339	4.054	0.993	
1200T125-54	0.0566	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	0.0713	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	0.1017	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
1200T150-33 ¹	0.0346	0.519	1.77	8.782	4.114	0.064	0.351	-	-	-	-	-					0.207	1.881	-0.464	4.155	0.988	
1200T150-43 ¹	0.0451	0.676	2.30	11.442	4.114	0.083	0.350	-	-	-	-	-					0.458	2.430	-0.461	4.154	0.988	
1200T150-54 ¹	0.0566	0.848	2.89	14.378	4.117	0.103	0.348	12.962	1.530	30.23	1354	7.215										