

PHYSICAL PROPERTIES

STRUCTURAL TRACK PHYSICAL PROPERTIES

Design Section	Thickness (in)	Gross Properties					33 ksi Effective Properties					50 ksi Effective Properties					Torsional Properties						
		Area (in ²)	Weight (lb/ft)	Ixx (in ⁴)	Rx (in)	Iyy (in ⁴)	Ry (in)	Ixx (in ⁴)	Sxx (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	Ixx (in ⁴)	Sxx (in ³)	Ma (in-k)	Va (lb)	Ycg (in)	Jx1000 (in ⁴)	Cw (in ⁴)	Xo (in)	Ro (in)	β	
550T125-33	0.034	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	0.045	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	0.056	0.452	1.54	1.903	2.052	0.053	0.342	1.862	0.597	11.80	2739	2.960							0.483	0.314	-0.540	2.149	0.937
550T125-68	0.071	0.569	1.94	2.412	2.058	0.066	0.339	2.412	0.807	15.95	4347	2.913							0.965	0.395	-0.536	2.154	0.938
550T150-33	0.034	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	0.045	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	0.056	0.480	1.63	2.128	2.105	0.089	0.430	2.005	0.628	12.41	2739	3.020							0.513	0.517	-0.714	2.264	0.901
550T150-68	0.071	0.605	2.06	2.699	2.112	0.110	0.427	2.660	0.850	16.80	4347	2.974							1.025	0.652	-0.710	2.269	0.902
550T200-33	0.034	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	0.045	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	0.056	0.537	1.83	2.578	2.191	0.199	0.609	2.253	0.669	13.21	2739	3.158							0.573	1.129	-1.089	2.521	0.813
550T200-68	0.071	0.676	2.30	3.274	2.200	0.248	0.606	3.027	0.914	18.06	4347	3.103							1.146	1.428	-1.084	2.527	0.816
550T300-33	0.034	0.398	1.35	2.112	2.304	0.374	0.969												0.159	2.067	-1.909	3.146	0.632
550T300-43	0.045	0.518	1.76	2.755	2.306	0.485	0.967												0.351	2.687	-1.904	3.143	0.633
550T300-54	0.056	0.650	2.21	3.479	2.313	0.606	0.965	2.654	0.723	14.28	2739	3.404							0.694	3.390	-1.898	3.144	0.636
550T300-68	0.071	0.819	2.79	4.424	2.324	0.758	0.962	3.610	0.996	19.68	4347	3.345							1.388	4.307	-1.889	3.146	0.639
550T300-97	0.101	1.167	3.97	6.430	2.347	1.068	0.956	5.816	1.654	32.68	6730	3.245							4.024	6.248	-1.871	3.150	0.647
600T125-33	0.034	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	-0.523	2.291	0.948
600T125-43	0.045	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	0.056	0.480	1.63	2.344	2.209	0.054	0.335	2.299	0.666	13.15	2728	3.246							0.513	0.383	-0.516	2.293	0.949
600T125-68	0.071	0.605	2.06	2.969	2.215	0.067	0.332	2.969	0.916	18.09	4347	3.164							1.025	0.481	-0.512	2.298	0.950
600T125-97	0.101	0.862	2.93	4.281	2.228	0.092	0.326	4.281	1.347	30.43	7359	3.178							2.973	0.681	-0.504	2.308	0.952
600T150-33	0.034	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	0.045	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	0.056	0.509	1.73	2.611	2.266	0.091	0.422	2.473	0.689	13.62	2728	3.330							0.543	0.630	-0.684	2.404	0.919
600T150-68	0.071	0.641	2.18	3.309	2.273	0.113	0.419	3.262	0.963	19.03	4347	3.227							1.086	0.794	-0.680	2.409	0.920
600T150-97	0.101	0.913	3.11	4.778	2.288	0.156	0.413	4.778	1.504	29.71	7359	3.178							3.148	1.131	-0.672	2.420	0.923
600T200-33	0.034	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	0.045	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	0.056	0.565	1.92	3.145	2.359	0.203	0.600	2.759	0.759	15.00	2728	3.416							0.604	1.376	-1.049	2.650	0.843
600T200-68	0.071	0.712	2.42	3.990	2.367	0.254	0.597	3.696	1.034	20.42	4347	3.360							1.206	1.739	-1.045	2.656	0.845
600T200-97	0.101	1.015	3.45	5.773	2.385	0.354	0.591	5.758	1.667	32.95	7359	3.276							3.499	2.496	-1.036	2.667	0.849
600T300-33	0.034	0.415	1.41	2.559	2.483	0.384	0.962												0.166	2.520	-1.853	3.244	0.674
600T300-43	0.045	0.541	1.84	3.337	2.484	0.498	0.960												0.367	3.275	-1.848	3.242	0.675
600T300-54	0.056	0.679	2.31	4.212	2.492	0.622	0.957	3.239	0.821	16.22	2728	3.674							0.725	4.129	-1.842	3.243	0.677
600T300-68	0.071	0.854	2.91	5.350	2.502	0.778	0.954	4.389	1.126	22.25	4347	3.611							1.448	5.239	-1.834	3.246	0.681
600T300-97	0.101	1.218	4.15	7.762	2.524	1.096	0.948	7.034	1.857	36.69	7359	3.506							4.200	7.582	-1.816	3.251	0.688
800T125-33'	0.034	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	0.045	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	0.056	0.594	2.02	4.745	2.827	0.057	0.309	4.668	0.940	18.58	2039	4.457							0.634	0.734	-0.438	2.878	0.977
800T125-68	0.071	0.748	2.54	5.998	2.833	0.070	0.306	5.998	1.356	26.80	4087	4.244							1.267	0.919	-0.434	2.882	0.977
800T125-97	0.101	1.066	3.63	8.613	2.843	0.096	0.301	8.613	2.062	40.74	8843	4.178							3.674	1.293	-0.427	2.891	0.978
800T150-33'	0.034	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	0.045	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	0.056	0.622	2.12	5.214	2.896	0.096	0.393	4.976	0.969	19.15	2039	4.552							0.664	1.213	-0.587	2.980	0.961
800T150-68	0.071	0.783	2.67	6.594	2.902	0.119	0.390	6.527	1.412	27.91	4087	4.323							1.327	1.522	-0.583	2.985	0.962
800T150-97	0.101	1.116	3.80	9.479	2.914	0.165	0.384	9.479	2.269	44.83	8843	4.178							3.849	2.155	-0.576	2.995	0.963
800T200-33'	0.034	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	0.045	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	0.056	0.679	2.31	6.152	3.011	0.218	0.567	5.505	1.009	19.93	2039	4.746							0.725	2.657	-0.917	3.198	0.918
800T200-68	0.071	0.854	2.91	7.786	3.019	0.272	0.564	7.306	1.490	29.45	4087	4.494							1.448	3.346	-0.913	3.204	0.919
800T200-97	0.101	1.218	4.15	11.212	3.034	0.379	0.558	11.176	2.491	49.22	8843	4.285							4.200	4.770	-0.905	3.215	0.921
800T300-33'	0.034	0.484	1.65	4.887	3.177	0.416	0.927												0.193	4.872	-1.662	3.703	0.799
800T300-43	0.045	0.631	2.15	6.372	3.178	0.540	0.925												0.428	6.330	-1.657	3.702	0.800
800T300-54	0.056	0.792	2.69	8.028	3.184	0.675	0.923	6.396	1.178	23.28	2039	4.862							0.845	7.960	-1.652	3.704	0.801
800T300-68	0.071	0.997	3.39	10.171	3.194	0.844	0.920	8.497	1.709	33.76	4087	4.665							1.690	10.067	-1.644	3.708	0.803
800T300-97	0.101	1.422	4.84	14.676	3.213	1.188	0.914	13.395	2.757	54.49													

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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)	Jx1000 (in ⁴)	Cw (in ⁶)	Xo (in)	Ro (in)	ϕ
1000T125-33'	0.034	0.432	1.47	5.089	3.431	0.037	0.292	-	-	-	-	-	-	-	-	-	0.173	0.754	-0.386	3.465	0.988	
1000T125-43'	0.045	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	0.056	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	0.071	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	0.101	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'	0.034	0.450	1.53	5.531	3.507	0.062	0.372	-	-	-	-	-	-	-	-	-	-	0.179	1.246	-0.521	3.565	0.979
1000T150-43'	0.045	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	0.056	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	0.071	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	0.101	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'	0.034	0.484	1.65	6.416	3.640	0.142	0.541	-	-	-	-	-	-	-	-	-	-	0.193	2.728	-0.823	3.771	0.952
1000T200-43'	0.045	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	0.056	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	0.071	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	0.101	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
1000T300-33'	0.034	0.553	1.88	8.184	3.845	0.441	0.892	-	-	-	-	-	-	-	-	-	-	0.221	8.147	-1.509	4.226	0.872
1000T300-43'	0.045	0.721	2.45	10.669	3.846	0.572	0.891	-	-	-	-	-	-	-	-	-	-	0.489	10.582	-1.505	4.225	0.873
1000T300-54	0.056	0.905	3.08	13.427	3.852	0.714	0.888	11.083	1.452	28.69	1628	6.250	10.826	1.191	35.65	1628	6.676	0.966	13.289	-1.500	4.228	0.874
1000T300-68	0.071	1.140	3.88	16.985	3.860	0.893	0.885	14.416	2.377	46.96	3261	5.716	14.106	1.904	57.01	3261	6.194	1.931	16.771	-1.493	4.233	0.876
1000T300-97	0.101	1.625	5.53	24.434	3.878	1.257	0.879	22.441	3.798	75.04	8843	5.571	21.530	3.589	107.45	9507	5.669	5.602	24.009	-1.478	4.242	0.879
1200T125-33'	0.034	0.502	1.71	8.147	4.030	0.038	0.274	-	-	-	-	-	-	-	-	-	-	0.2	1.134	-0.342	4.054	0.993
1200T125-43'	0.045	0.654	2.22	10.615	4.030	0.049	0.272	-	-	-	-	-	-	-	-	-	-	0.443	1.462	-0.339	4.054	0.993
1200T125-54'	0.056	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	0.071	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	0.101	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'	0.034	0.519	1.77	8.782	4.114	0.064	0.351	-	-	-	-	-	-	-	-	-	-	0.207	1.881	-0.464	4.155	0.988
1200T150-43'	0.045	0.676	2.30	11.442	4.114	0.083	0.350	-	-	-	-	-	-	-	-	-	-	0.458	2.430	-0.461	4.154	0.988
1200T150-54'	0.056	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	0.071	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	0.101	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
1200T200-33'	0.034	0.553	1.88	10.051	4.261	0.146	0.514	-	-	-	-	-	-	-	-	-	-	0.221	4.138	-0.742	4.356	0.971
1200T200-43'	0.045	0.721	2.45	13.097	4.262	0.189	0.512	-	-	-	-	-	-	-	-	-	-	0.489	5.361	-0.739	4.355	0.971
1200T200-54'	0.056	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	0.071	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	0.101	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
1200T300-33'	0.034	0.623	2.12	12.588	4.496	0.460	0.859	-	-	-	-	-	-	-	-	-	-	0.248	12.405	-1.384	4.782	0.916
1200T300-43'	0.045	0.811	2.76	16.408	4.497	0.597	0.857	-	-	-	-	-	-	-	-	-	-	0.550	16.110	-1.380	4.781	0.917
1200T300-54'	0.056	1.018	3.46	20.636	4.502	0.745	0.855	15.856	1.641	32.44	1354	7.880	14.451	1.391	41.65	1354	8.271	1.087	20.211	-1.375	4.784	0.917
1200T300-68	0.071	1.282	4.36	26.079	4.510	0.932	0.852	21.991	2.501	49.41	2713	7.437	20.338	2.140	64.06	2713	7.828	2.173	25.471	-1.369	4.789	0.918
1200T300-97	0.101	1.828	6.22	37.441	4.525	1.310	0.847	34.841	4.629	91.46	7902	6.818	33.377	4.051	121.30	7902	7.168	6.304	36.357	-1.355	4.799	0.920
1400T125-54'	0.056	0.933	3.18	19.977	4.627	0.061	0.256	17.725	1.767	34.91	1160	8.511	-	-	-	-	-	0.997	2.559	-0.299	4.643	0.996
1400T125-68	0.071	1.175	4.00	25.196	4.630	0.076	0.254	23.552	2.632	52.01	2322	8.063	-	-	-	-	-	1.992	3.189	-0.296	4.646	0.996
1400T125-97	0.101	1.676	5.70	36.024	4.636	0.104	0.249	35.775	4.480	88.53	6761	7.557	-	-	-	-	-	5.778	4.445	-0.289	4.652	0.996
1400T150-54'	0.056	0.962	3.27	21.392	4.717	0.105	0.330	18.620	1.810	35.76	1160	8.624	-	-	-	-	-	1.027	4.280	-0.410	4.746	0.993
1400T150-68	0.071	1.211	4.12	26.987	4.721	0.130	0.327	25.409	2.717	53.68	2322	8.155	-	-	-	-	-	2.052	5.349	-0.407	4.749	0.993
1400T150-97	0.101	1.727	5.88	38.607	4.729	0.180	0.322	38.340	4.834	95.52	6761	7.542	-	-	-	-	-	5.953	7.503	-0.399	4.756	0.993
1400T200-54'	0.056	1.018	3.46	24.221	4.878	0.242	0.487	20.098	1.868	36.92	1160	8.863	-	-	-	-	-	1.087	9.520	-0.665	4.947	0.982
1400T200-68	0.071	1.282	4.36	30.571	4.883	0.301	0.485	27.707	2.830	55.93	2322	8.370	-	-	-	-	-	2.173	11.942	-0.661	4.951	0.982
1400T200-97	0.101	1.828	6.22	43.773	4.893	0.42	0.479	43.679	5.174	102.24	6761	7.685	-	-	-	-	-	6.304	16.883	-0.651	4.959	0.983
1400T300-33'	0.034	0.692	2.35	18.237	5.134	0.475	0.829	-	-	-	-	-	-	-	-	-	-	0.276	17.692	-1.279	5.356	0.943
1400T300-43'	0.045	0.902	3.07	23.77	5.135	0.616	0.827	-	-	-	-	-	-	-	-	-	-	0.611	22.973	-1.275	5.355	0.943
1400T300-54'	0.056	1.131	3.85	29.881	5.139	0.769	0.825	22.429	1.935	38.24	1160	9.327	20.324	1.635	48.96	1160	9.774	1.208	28.8	-1.271	5.358	0.944
1400T300-68	0.071	1.425	4.85	37.737	5.146	0.962	0.822	31.291	2.961	58.5	2322	8.81	28.775	2.523	75.54	2322	9.264	2.415	36.257	-1.265	5.363	0.944
1400T300-97	0.101	2.032	6.91	54.105																		