



BASIC ELEMENTS OF SCREW THREAD DESIGN  
Thread Stress Areas - Unified Inch Screw Threads

Nominal Size, Threads per inch and Thread Series	A <sub>s</sub> Tensile Stress Area sq. in.	A <sub>t</sub> Thread Root Area sq. in.	AS <sub>s</sub> Thread Stripping Areas sq. in. per in. of engagement			
			External Thread		Internal Thread	
			Class 2A	Class 3A	Class 2B	Class 3B
0-80 UNF	0.00180	0.00151	0.0673	0.0748	0.106	0.116
1-64 UNC	0.00263	0.00218	0.0835	0.0913	0.133	0.144
1-72 UNF	0.00278	0.00237	0.0831	0.0922	0.130	0.142
2-56 UNC	0.00370	0.00310	0.101	0.109	0.162	0.174
2-64 UNF	0.00394	0.00339	0.101	0.110	0.156	0.170
3-48 UNC	0.00487	0.00406	0.118	0.127	0.191	0.204
3-56 UNF	0.00523	0.00451	0.118	0.130	0.186	0.201
4-40 UNC	0.00604	0.00496	0.138	0.147	0.221	0.235
4-48 UNF	0.00661	0.00566	0.140	0.151	0.216	0.232
5-40 UNC	0.00796	0.00672	0.161	0.172	0.248	0.263
5-44 UNF	0.00830	0.00716	0.162	0.173	0.246	0.262
6-32 UNC	0.00909	0.00745	0.180	0.189	0.281	0.296
6-40 UNF	0.01015	0.00874	0.182	0.197	0.274	0.292
8-32 UNC	0.0140	0.0120	0.226	0.239	0.334	0.353
8-36 UNF	0.0147	0.0128	0.227	0.244	0.331	0.350
10-24 UNC	0.0175	0.0145	0.263	0.277	0.401	0.420
10-32 UNF	0.0200	0.0175	0.275	0.289	0.389	0.411
12-24 UNC	0.0242	0.0206	0.312	0.327	0.458	0.478
12-28 UNF	0.0258	0.0226	0.317	0.336	0.450	0.474
1/4-20 UNC	0.0318	0.0269	0.368	0.385	0.539	0.563
1/4-28 UNF	0.0364	0.0326	0.373	0.403	0.521	0.549
5/16-18 UNC	0.0524	0.0454	0.470	0.502	0.682	0.710
5/16-24 UNF	0.0580	0.0524	0.479	0.520	0.663	0.696
3/8-16 UNC	0.0775	0.0678	0.576	0.619	0.828	0.860
3/8-24 UNF	0.0878	0.0809	0.578	0.644	0.800	0.837
7/16-14 UNC	0.106	0.0933	0.677	0.734	0.981	1.01
7/16-20 UNF	0.109	0.109	0.685	0.761	0.908	0.991
1/2-13 UNC	0.142	0.126	0.779	0.854	1.12	1.16
1/2-20 UNF	0.160	0.149	0.799	0.887	1.08	1.13
9/16-12 UNC	0.182	0.182	0.893	0.974	1.27	1.32
9/16-18 UNF	0.203	0.189	0.901	1.02	1.23	1.29
5/8-11 UNC	0.226	0.202	0.998	1.09	1.42	1.47
5/8-18 UNF	0.256	0.240	0.998	1.13	1.37	1.43
3/4-10 UNC	0.334	0.302	1.21	1.34	1.72	1.78
3/4-16 UNF	0.373	0.351	1.23	1.38	1.66	1.73
7/8-9 UNC	0.462	0.419	1.43	1.58	2.03	2.09
7/8-14 UNF	0.509	0.480	1.44	1.63	1.96	2.03
1-8 UNC	0.606	0.551	1.66	1.82	2.33	2.40
1-12 UNF	0.663	0.625	1.66	1.87	2.27	2.35
1-14 UNS	0.680	0.646	1.67	1.89	2.23	2.33
1-1/8 - 7 UNC	0.763	0.693	1.88	2.04	2.65	2.72
1-1/8 - 8 UN	0.790	0.728	1.89	2.07	2.63	2.70
1-1/4 - 7 UNC	0.969	0.890	2.11	2.30	2.94	3.02
1-1/4 - 8 UN	1.000	0.929	2.12	2.33	2.92	3.00
1-3/8 - 6 UNC	1.16	1.05	2.34	2.52	3.27	3.35
1-3/8 - 8 UN	1.23	1.16	2.34	2.58	3.21	3.30
1-1/2 - 6 UNC	1.41	1.29	2.58	2.77	3.57	3.65
1-1/2 - 8 UN	1.49	1.41	2.57	2.84	3.50	3.61
1-5/8 - 8 UN	1.78	1.68	2.80	3.10	3.79	3.91
1-3/4 - 5 UNC	1.90	1.74	3.04	3.24	4.20	4.30
1-3/4 - 8 UN	2.08	1.98	3.03	3.35	4.08	4.21
1-7/8 - 8 UN	2.41	2.30	3.25	3.63	4.37	4.50