

# Strand and Tendon Properties

## Strand Properties

Strand Type		0.5" (13 mm)	0.6" (15 mm)
Nominal diameter	inch	0.5	0.6
Nominal area	inch <sup>2</sup>	0.153	0.217
Nominal weight/mass	lbs/ft	0.53	0.74
Tensile strength	ksi	270	270
Min. breaking load	kips	41.3	58.6
Young's modulus	ksi	approx. 28,500	
Relaxation	%	max 2.5	

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## Tendon Properties

Strands Type 0.5" (270 ksi)		
Number of Strands Per Tendon	Area of tendon inch <sup>2</sup>	Min breaking load kips
1	0.15	41.3
2	0.31	82.6
3	0.46	123.9
4	0.61	165.2
5	0.77	206.5
6	0.92	247.8
7	1.07	289.1
8	1.22	330.4
9	1.38	371.7
10	1.53	413.0
11	1.68	454.3
12	1.84	495.6
13	1.99	536.9
14	2.14	578.2
15	2.30	619.5
16	2.45	660.8
17	2.60	702.1
18	2.75	743.4
19	2.91	784.7
20	3.06	826.0
21	3.21	867.3
22	3.37	908.6
23	3.52	949.9
24	3.67	991.2
25	3.83	1032.5
26	3.98	1073.8
27	4.13	1115.1
28	4.28	1156.4
29	4.44	1197.7
30	4.59	1239.0
31	4.74	1280.3
32	4.90	1321.6
33	5.05	1362.9
34	5.20	1404.2
35	5.36	1445.5
36	5.51	1486.8
37	5.66	1528.1
38	5.81	1569.4
39	5.97	1610.7
40	6.12	1652.0
41	6.27	1693.3
42	6.43	1734.6
43	6.58	1775.9
44	6.73	1817.2
45	6.89	1858.5
46	7.04	1899.8
47	7.19	1941.1
48	7.35	1982.4
49	7.50	2023.7
50	7.65	2065.0
51	7.80	2106.3
52	7.96	2147.6
53	8.11	2188.9
54	8.26	2230.2
55	8.42	2271.5

Strands Type 0.6" (270 ksi)		
Number of Strands Per Tendon	Area of tendon inch <sup>2</sup>	Min breaking load kips
1	0.22	58.6
2	0.43	117.2
3	0.65	175.8
4	0.87	234.4
5	1.09	293.0
6	1.30	351.6
7	1.52	410.2
8	1.74	468.8
9	1.95	527.4
10	2.17	586.0
11	2.39	644.6
12	2.60	703.2
13	2.82	761.8
14	3.03	820.4
15	3.26	879.0
16	3.47	937.6
17	3.69	996.2
18	3.91	1054.8
19	4.12	1113.4
20	4.34	1172.0
21	4.56	1230.6
22	4.78	1289.2
23	4.99	1347.8
24	5.21	1406.4
25	5.43	1465.0
26	5.64	1523.6
27	5.86	1582.2
28	6.08	1640.8
29	6.29	1699.4
30	6.51	1758.0
31	6.73	1816.6
32	6.94	1875.2
33	7.16	1933.8
34	7.38	1992.4
35	7.60	2051.0
36	7.81	2109.6
37	8.03	2168.2
38	8.25	2226.8
39	8.46	2285.4
40	8.68	2344.0
41	8.90	2402.6
42	9.11	2461.2
43	9.33	2519.8
44	9.55	2578.4
45	9.77	2637.0
46	9.98	2695.6
47	10.20	2754.2
48	10.42	2812.8
49	10.63	2871.4
50	10.85	2930.0
51	11.07	2988.6
52	11.28	3047.2
53	11.50	3105.8
54	11.72	3164.4
55	11.94	3223.0