

Single Loose Tube Single Armor Figure 8 – Sag and Tension Guide

Part Number 52xxxxxM0

Initial Sag and Tension¹

Span ft	1 to 12 Fibers											
	0°F		20°F		40°F		60°F		80°F		100°F	
	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in
100	526	6.0	439	8.0	352	10.0	265	12.0	178	14.0	91	16.0
125	601	8.3	511	10.5	421	12.8	331	15.0	241	17.2	152	19.5
150	674	10.6	582	13.1	490	15.5	398	18.0	305	20.5	213	22.9
175	747	13.0	653	15.7	558	18.3	464	21.0	369	23.7	275	26.3
200	819	15.5	723	18.4	626	21.2	530	24.0	434	26.8	337	29.6
225	891	18.1	792	21.1	694	24.0	596	27.0	498	30.0	400	32.9
250	961	20.7	862	23.8	762	26.9	663	30.0	563	33.1	463	36.2
275	1032	23.3	931	26.5	830	29.8	729	33.0	628	36.2	527	39.5
300	1102	26.0	1000	29.3	897	32.7	795	36.0	693	39.3	590	42.7
325	1172	28.7	1068	32.1	965	35.6	861	39.0	758	42.4	654	45.9
350	1241	31.4	1136	34.9	1032	38.5	928	42.0	823	45.5	719	49.1
375	1310	34.1	1205	37.8	1099	41.4	994	45.0	888	48.6	783	52.2
400	1379	36.9	1273	40.6	1166	44.3	1060	48.0	954	51.7	847	55.4
425	1448	39.7	1341	43.4	1233	47.2	1126	51.0	1019	54.8	912	58.6
450	1516	42.5	1408	46.3	1300	50.2	1193	54.0	1085	57.8	977	61.7
475	1585	45.3	1476	49.2	1367	53.1	1259	57.0	1150	60.9	1041	64.8
500	1653	48.1	1544	52.1	1434	56.0	1325	60.0	1216	64.0	1106	67.9
525	1721	50.9	1611	54.9	1501	59.0	1391	63.0	1281	67.0	1171	71.1
550	1789	53.8	1679	57.8	1568	61.9	1458	66.0	1347	70.1	1236	74.2
575	1857	56.6	1746	60.7	1635	64.9	1524	69.0	1413	73.1	1302	77.3
600	1925	59.5	1813	63.6	1702	67.8	1590	72.0	1478	76.2	1367	80.4
625	1993	62.3	1881	66.6	1768	70.8	1656	75.0	1544	79.2	1432	83.4
650	2060	65.2	1948	69.5	1835	73.7	1723	78.0	1610	82.3	1497	86.5
675	2128	68.1	2015	72.4	1902	76.7	1789	81.0	1676	85.3	1563	89.6
700	2195	71.0	2082	75.3	1968	79.7	1855	84.0	1742	88.3	1628	92.7

Span ft	13 to 48 Fibers											
	0°F		20°F		40°F		60°F		80°F		100°F	
	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in
100	550	6.2	462	8.2	374	10.1	286	12.0	198	13.9	110	15.8
125	630	8.5	539	10.7	449	12.8	358	15.0	267	17.2	176	19.3
150	710	10.9	616	13.3	523	15.6	429	18.0	336	20.4	243	22.7
175	788	13.4	692	15.9	597	18.5	501	21.0	405	23.5	310	26.1
200	865	15.9	768	18.6	670	21.3	573	24.0	475	26.7	377	29.4
225	942	18.5	843	21.3	743	24.2	644	27.0	545	29.8	446	32.7
250	1018	21.1	917	24.1	816	27.0	716	30.0	615	33.0	514	35.9
275	1094	23.8	991	26.8	889	29.9	787	33.0	685	36.1	583	39.2
300	1169	26.4	1066	29.6	962	32.8	859	36.0	755	39.2	652	42.4
325	1244	29.2	1139	32.4	1035	35.7	930	39.0	826	42.3	721	45.6
350	1319	31.9	1213	35.3	1107	38.6	1002	42.0	896	45.4	791	48.7
375	1393	34.7	1286	38.1	1180	41.6	1073	45.0	967	48.4	860	51.9
400	1467	37.5	1360	41.0	1252	44.5	1145	48.0	1038	51.5	930	55.0
425	1541	40.3	1433	43.8	1325	47.4	1217	51.0	1108	54.6	1000	58.2
450	1615	43.1	1506	46.7	1397	50.4	1288	54.0	1179	57.6	1070	61.3
475	1689	45.9	1579	49.6	1469	53.3	1360	57.0	1250	60.7	1140	64.4
500	1762	48.7	1652	52.5	1542	56.2	1431	60.0	1321	63.8	1211	67.5
525	1836	51.6	1725	55.4	1614	59.2	1503	63.0	1392	66.8	1281	70.6
550	1909	54.4	1797	58.3	1686	62.1	1574	66.0	1463	69.9	1351	73.7
575	1982	57.3	1870	61.2	1758	65.1	1646	69.0	1534	72.9	1422	76.8
600	2055	60.2	1943	64.1	1830	68.1	1718	72.0	1605	75.9	1492	79.9
625	2128	63.0	2015	67.0	1902	71.0	1789	75.0	1676	79.0	1563	83.0
650	2201	65.9	2088	70.0	1974	74.0	1861	78.0	1747	82.0	1634	86.0
675	2274	68.8	2160	72.9	2046	76.9	1932	81.0	1818	85.1	1704	89.1
700	2347	71.7	2232	75.8	2118	79.9	2004	84.0	1889	88.1	1775	92.2

Span ft	49 to 96 Fibers											
	0°F		20°F		40°F		60°F		80°F		100°F	
	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in	Tension lbs	Sag in
100	640	6.9	549	8.6	457	10.3	366	12.0	275	13.7	184	15.4
125	741	9.3	646	11.2	552	13.1	458	15.0	364	16.9	269	18.8
150	840	11.8	743	13.8	646	15.9	549	18.0	452	20.1	356	22.2
175	938	14.3	839	16.6	740	18.8	641	21.0	542	23.2	443	25.4
200	1036	17.0	935	19.3	834	21.7	733	24.0	631	26.3	530	28.7
225	1133	19.6	1030	22.1	927	24.5	824	27.0	721	29.5	618	31.9
250	1229	22.4	1124	24.9	1020	27.5	916	30.0	811	32.5	707	35.1
275	1324	25.1	1218	27.7	1113	30.4	1007	33.0	902	35.6	796	38.3
300	1419	27.9	1312	30.6	1206	33.3	1099	36.0	992	38.7	885	41.4
325	1514	30.7	1406	33.4	1298	36.2	1190	39.0	1082	41.8	974	44.6
350	1609	33.5	1500	36.3	1391	39.2	1282	42.0	1173	44.8	1064	47.7
375	1703	36.3	1593	39.2	1483	42.1	1373	45.0	1264	47.9	1154	50.8
400	1797	39.1	1686	42.1	1576	45.0	1465	48.0	1354	51.0	1244	53.9
425	1891	42.0	1779	45.0	1668	48.0	1557	51.0	1445	54.0	1334	57.0
450	1984	44.9	1872	47.9	1760	51.0	1648	54.0	1536	57.0	1424	60.1
475	2078	47.7	1965	50.8	1852	53.9	1740	57.0	1627	60.1	1514	63.2
500	2171	50.6	2058	53.7	1945	56.9	1831	60.0	1718	63.1	1605	66.3
525	2264	53.5	2151	56.7	2037	59.8	1923	63.0	1809	66.2	1695	69.3
550	2358	56.4	2243	59.6	2129	62.8	2014	66.0	1900	69.2	1786	72.4
575	2451	59.3	2336	62.5	2221	65.8	2106	69.0	1991	72.2	1876	75.5
600	2544	62.2	2428	65.5	2313	68.7	2198	72.0	2082	75.3	1967	78.5
625	2636	65.1	2521	68.4	2405	71.7	2289	75.0	2173	78.3	2058	81.6
650	2729	68.0	2613	71.4	2497	74.7	2381	78.0	2264	81.3	2148	84.6
675	2822	71.0	2705	74.3	2589	77.7	2472	81.0	2356	84.3	2239	87.7

NESC Ice and Wind Loading Districts¹

Span ft	1 to 12 Fibers															
	Heavy Plus ²				Heavy				Medium				Light			
	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs
100	26.1	9.9	27.9	1418	16.6	9.8	19.3	929	12.1	9.8	15.5	674	5.3	15.3	16.2	601
125	35.2	13.4	37.7	1641	22.5	13.2	26.1	1072	16.2	13.1	20.8	785	7.0	20.3	21.5	708
150	44.9	17.1	48.1	1851	28.7	16.9	33.3	1208	20.6	16.6	26.4	891	8.8	25.5	27.0	809
175	55.2	21.0	59.1	2051	35.3	20.8	40.9	1339	25.1	20.3	32.3	993	10.7	31.0	32.8	908
200	65.9	25.1	70.5	2243	42.1	24.8	48.9	1465	29.8	24.1	38.3	1092	12.7	36.6	38.7	1003
225	77.0	29.3	82.4	2429	49.2	29.0	57.1	1587	34.7	28.0	44.6	1188	14.7	42.4	44.9	1096
250	88.6	33.7	94.8	2609	56.5	33.3	65.5	1706	39.7	32.1	51.0	1283	16.7	48.3	51.1	1188
275	100.4	38.3	107.5	2783	64.0	37.7	74.2	1823	44.7	36.2	57.6	1375	18.8	54.4	57.5	1277
300	112.6	42.9	120.5	2954	71.7	42.2	83.2	1937	50.0	40.4	64.2	1466	21.0	60.5	64.0	1365
325	125.1	47.7	133.9	3120	79.5	46.8	92.3	2048	55.2	44.7	71.0	1556	23.1	66.8	70.7	1452
350	137.9	52.5	147.6	3283	87.5	51.5	101.6	2158	60.6	49.0	78.0	1644	25.3	73.1	77.4	1538
375	-	-	-	-	95.7	56.4	111.0	2266	66.1	53.4	85.0	1731	27.6	79.6	84.2	1622
400	-	-	-	-	104.0	61.2	120.7	2372	71.6	57.9	92.1	1818	29.8	86.1	91.1	1706
425	-	-	-	-	112.4	66.2	130.5	2477	77.2	62.5	99.3	1903	32.1	92.7	98.1	1789
450	-	-	-	-	121.0	71.2	140.4	2581	82.9	67.0	106.6	1987	34.4	99.3	105.1	1871
475	-	-	-	-	129.7	76.4	150.5	2683	88.6	71.7	114.0	2071	36.7	106.1	112.3	1953
500	-	-	-	-	138.4	81.5	160.7	2784	94.4	76.4	121.4	2154	39.1	112.9	119.4	2034
525	-	-	-	-	147.3	86.8	171.0	2885	100.3	81.1	129.0	2237	41.5	119.7	126.7	2114
550	-	-	-	-	156.3	92.1	181.4	2984	106.2	85.9	136.5	2318	43.9	126.6	134.0	2193
575	-	-	-	-	165.4	97.4	192.0	3082	112.1	90.7	144.2	2400	46.3	133.5	141.3	2273
600	-	-	-	-	174.6	102.8	202.6	3179	118.1	95.5	151.9	2480	48.7	140.5	148.7	2351
625	-	-	-	-	183.9	108.3	213.4	3276	124.1	100.4	159.6	2561	51.1	147.6	156.2	2430
650	-	-	-	-	-	-	-	-	130.2	105.3	167.4	2640	53.6	154.7	163.7	2508
675	-	-	-	-	-	-	-	-	136.3	110.2	175.3	2720	56.0	161.8	171.2	2585
700	-	-	-	-	-	-	-	-	142.5	115.2	183.2	2799	58.5	169.0	178.8	2662

Span ft	13 to 48 Fibers															
	Heavy Plus ²				Heavy				Medium				Light			
	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs
100	26.3	9.9	28.1	1455	16.9	9.8	19.5	961	12.3	9.8	15.7	703	5.4	15.5	16.5	634
125	35.5	13.3	38.0	1685	22.8	13.2	26.4	1110	16.5	13.1	21.1	820	7.2	20.6	21.8	747
150	45.4	17.0	48.4	1901	29.2	16.8	33.7	1253	21.0	16.6	26.7	931	9.0	25.9	27.5	855
175	55.7	20.9	59.5	2108	35.8	20.7	41.3	1389	25.6	20.3	32.6	1039	11.0	31.5	33.3	959
200	66.5	24.9	71.0	2306	42.7	24.7	49.3	1521	30.3	24.1	38.7	1143	13.0	37.2	39.4	1060
225	77.7	29.1	83.0	2498	49.8	28.8	57.6	1649	35.3	28.0	45.0	1245	15.0	43.0	45.6	1159
250	89.3	33.5	95.4	2683	57.2	33.1	66.1	1773	40.3	32.0	51.5	1345	17.1	49.0	51.9	1256
275	101.2	38.0	108.1	2864	64.8	37.4	74.8	1895	45.5	36.1	58.0	1442	19.2	55.1	58.4	1352
300	113.5	42.6	121.2	3040	72.5	41.9	83.8	2014	50.7	40.2	64.7	1539	21.4	61.4	65.0	1445
325	126.0	47.3	134.6	3212	80.5	46.5	92.9	2131	56.1	44.5	71.6	1633	23.6	67.7	71.7	1538
350	-	-	-	-	88.5	51.2	102.3	2246	61.5	48.8	78.5	1727	25.8	74.1	78.5	1629
375	-	-	-	-	96.8	55.9	111.8	2359	67.0	53.2	85.6	1819	28.1	80.6	85.4	1719
400	-	-	-	-	105.1	60.7	121.4	2471	72.6	57.6	92.7	1911	30.4	87.2	92.3	1808
425	-	-	-	-	113.6	65.7	131.2	2581	78.3	62.1	99.9	2001	32.7	93.9	99.4	1897
450	-	-	-	-	122.2	70.6	141.2	2689	84.0	66.6	107.2	2091	35.1	100.6	106.5	1984
475	-	-	-	-	131.0	75.7	151.2	2797	89.8	71.2	114.6	2179	37.4	107.4	113.7	2071
500	-	-	-	-	139.8	80.8	161.4	2903	95.6	75.9	122.0	2267	39.8	114.2	120.9	2157
525	-	-	-	-	148.7	85.9	171.8	3008	101.5	80.5	129.6	2355	42.2	121.1	128.3	2243
550	-	-	-	-	157.8	91.2	182.2	3112	107.4	85.2	137.1	2442	44.6	128.1	135.6	2328
575	-	-	-	-	166.9	96.4	192.8	3215	113.4	90.0	144.8	2528	47.1	135.1	143.0	2412
600	-	-	-	-	176.1	101.8	203.4	3318	119.4	94.8	152.5	2614	49.5	142.1	150.5	2496
625	-	-	-	-	-	-	-	-	125.5	99.6	160.2	2699	52.0	149.2	158.0	2580
650	-	-	-	-	-	-	-	-	131.6	104.4	168.0	2784	54.5	156.3	165.6	2663
675	-	-	-	-	-	-	-	-	137.7	109.3	175.8	2868	57.0	163.5	173.2	2746
700	-	-	-	-	-	-	-	-	143.9	114.2	183.7	2952	59.5	170.7	180.8	2828

49 to 96 Fibers																
Span ft	Heavy Plus ²				Heavy				Medium				Light			
	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs	Vert. Sag in	Horiz. Sag in	Total Sag in	Tension lbs
100	26.9	9.7	28.6	1565	17.5	9.5	19.9	1062	13.0	9.6	16.1	797	6.0	15.8	16.9	731
125	36.2	13.0	38.5	1815	23.6	12.9	26.9	1231	17.3	12.8	21.5	933	7.9	20.9	22.3	864
150	46.1	16.6	49.0	2052	30.0	16.4	34.2	1392	21.9	16.1	27.2	1063	10.0	26.2	28.0	991
175	56.6	20.3	60.1	2278	36.8	20.0	41.9	1547	26.6	19.6	33.1	1190	12.1	31.7	33.9	1115
200	67.5	24.3	71.7	2495	43.8	23.9	49.9	1698	31.5	23.3	39.1	1313	14.2	37.4	40.0	1235
225	78.7	28.3	83.7	2705	51.0	27.8	58.1	1844	36.5	27.0	45.4	1433	16.4	43.2	46.2	1353
250	90.4	32.5	96.1	2909	58.5	31.9	66.6	1987	41.6	30.8	51.8	1551	18.7	49.1	52.5	1469
275	102.4	36.8	108.8	3108	66.1	36.0	75.3	2126	46.9	34.6	58.3	1667	21.0	55.1	59.0	1583
300	114.7	41.2	121.9	3302	73.9	40.3	84.2	2263	52.2	38.6	64.9	1781	23.3	61.3	65.6	1695
325	-	-	-	-	81.9	44.6	93.2	2398	57.6	42.6	71.6	1894	25.7	67.5	72.2	1806
350	-	-	-	-	90.0	49.0	102.5	2530	63.1	46.6	78.4	2006	28.1	73.8	79.0	1916
375	-	-	-	-	98.2	53.5	111.9	2661	68.6	50.7	85.3	2116	30.5	80.2	85.8	2025
400	-	-	-	-	106.6	58.1	121.4	2790	74.3	54.9	92.3	2225	33.0	86.6	92.7	2133
425	-	-	-	-	115.1	62.7	131.0	2918	79.9	59.1	99.4	2334	35.4	93.1	99.6	2240
450	-	-	-	-	123.7	67.4	140.8	3044	85.7	63.3	106.5	2442	37.9	99.6	106.6	2346
475	-	-	-	-	132.4	72.1	150.7	3169	91.4	67.6	113.7	2548	40.5	106.3	113.7	2451
500	-	-	-	-	141.1	76.9	160.7	3292	97.3	71.9	120.9	2655	43.0	112.9	120.8	2556
525	-	-	-	-	-	-	-	-	103.1	76.2	128.2	2760	45.5	119.6	128.0	2660
550	-	-	-	-	-	-	-	-	109.1	80.6	135.6	2865	48.1	126.4	135.2	2763
575	-	-	-	-	-	-	-	-	115.0	85.0	143.0	2969	50.7	133.1	142.5	2866
600	-	-	-	-	-	-	-	-	121.0	89.4	150.4	3073	53.3	140.0	149.8	2969
625	-	-	-	-	-	-	-	-	127.0	93.8	157.9	3177	55.9	146.8	157.1	3071
650	-	-	-	-	-	-	-	-	133.1	98.3	165.4	3279	58.5	153.7	164.5	3173
675	-	-	-	-	-	-	-	-	-	-	-	-	61.2	160.6	171.9	3274

Loading District Specifics

	Heavy Plus ²	Heavy	Medium	Light
Horizontal Wind Pressure (lb/ft ²)	4	4	4	9
Radial Ice Thickness (in)	1	½	¼	0
Temperature (F)	0	0	15	30

¹Reflects 1% Sag at 60° F Installation. Messenger is flooded 6.6M (7-strand ¼ inch EHS)

²Not an NESD District