

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G51.125.6
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AT&TCo Standard

SUSPENSION STRAND
STRAND TENSIONS AND SAGS
6M STRAND — ALUMINUM
CONDUCTOR CABLES

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1. GENERAL

1.01 This section covers the approximate sags and strand tensions with the cable in place for **aluminum conductor cables on 6,000 pound suspension strand.**

1.02 The values of cable-in-place sags and tensions are for strand which was placed at the proper stringing tension (see G51.125.1) and with no wind or ice loads present at the time of measurement. However, wind loads alone, under average conditions, have little effect on sags and tensions.

1.03 These values apply for all aluminum conductor cables on 6,000 pound suspension strand regardless of conductor gauge, cable makeup, sheath material or storm loading area.

1.04 The maximum span lengths for various weights of cable in each of the storm loading areas are listed in the sections on the selection of suspension strand.

2. TENSIONS AND SAGS WITH CABLE IN PLACE

2.01 When 6,000 pound suspension strand is placed at the proper stringing tension, the approximate sags and tensions with an aluminum conductor cable in place will be as listed in the following tables.

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	100		125		150		175		200		225		250	
		Sag (In.)	Tens. (Lbs.)												
0.1	0	4	1275	6	1275	9	1275	12	1275	15	1275	20	1250	24	1250
	20	4	1125	7	1125	10	1125	13	1125	17	1125	22	1125	27	1125
	40	5	975	8	1000	11	1000	15	1000	19	1025	24	1025	30	1025
	60	6	850	9	850	13	875	17	900	22	900	27	925	33	925
	80	7	700	10	725	14	750	19	775	24	800	30	825	36	850
	100	8	600	12	675	17	675	21	700	27	725	33	750	39	775
0.2	0	5	1300	8	1325	11	1325	15	1325	19	1350	24	1350	29	1350
	20	6	1150	9	1175	12	1175	16	1200	21	1225	26	1225	32	1250
	40	6	1025	10	1025	14	1050	18	1075	23	1100	29	1125	35	1150
	60	7	875	11	925	15	950	20	975	25	1000	31	1050	37	1075
	80	8	750	12	800	17	850	22	875	28	925	34	950	40	1000
	100	10	650	14	700	19	750	24	800	30	850	37	875	43	925
0.3	0	6	1325	9	1350	13	1375	17	1400	22	1425	27	1425	34	1450
	20	7	1200	10	1225	14	1250	19	1275	24	1300	30	1325	36	1350
	40	7	1050	11	1100	16	1125	21	1175	26	1200	32	1225	39	1275
	60	9	925	13	975	17	1025	23	1050	28	1100	35	1150	41	1175
	80	10	825	14	875	19	925	25	975	31	1025	37	1075	44	1125
	100	11	725	16	775	21	850	27	900	33	950	40	1000	47	1050
0.4	0	7	1350	11	1400	15	1425	20	1450	25	1500	31	1525	38	1550
	20	8	1225	12	1275	16	1300	21	1350	27	1400	33	1425	40	1475
	40	9	1100	13	1150	18	1200	23	1250	29	1300	35	1350	42	1375
	60	10	975	14	1025	19	1100	25	1150	31	1200	38	1250	45	1300
	80	11	875	16	950	21	1000	27	1075	33	1125	40	1175	48	1225
	100	12	775	17	850	23	925	29	1000	36	1050	43	1100	50	1175

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	275		300		325		350		375		400		425	
		Sag (In.)	Tens. (Lbs.)												
0.1	0	30	1250	35	1250	42	1225	49	1225	56	1225	64	1225	72	1225
	20	32	1150	39	1150	45	1150	52	1150	60	1150	68	1150	77	1150
	40	35	1050	42	1050	49	1050	56	1050	64	1075	73	1075	82	1075
	60	39	950	45	975	53	975	60	1000	69	1000	77	1000	86	1025
	80	42	875	49	900	57	900	65	925	73	950	82	950	91	975
	100	46	800	53	825	61	850	69	875	77	875	86	900	96	925
0.2	0	35	1375	42	1375	49	1375	56	1375	64	1400	73	1400	82	1400
	20	38	1275	45	1275	52	1300	60	1300	68	1325	77	1325	86	1325
	40	41	1175	48	1200	56	1200	64	1225	72	1250	81	1250	90	1275
	60	44	1100	51	1125	59	1150	67	1150	76	1175	85	1200	95	1225
	80	47	1025	55	1050	63	1075	71	1100	80	1125	89	1150	99	1150
	100	51	950	58	975	66	1025	75	1050	84	1075	93	1100	103	1125
0.3	0	40	1475	47	1500	55	1525	63	1525	71	1550	80	1575	90	1575
	20	43	1375	50	1400	58	1425	66	1450	75	1475	84	1500	94	1525
	40	46	1300	53	1325	61	1350	70	1375	79	1400	88	1425	98	1450
	60	49	1225	56	1250	65	1300	73	1325	82	1350	92	1375	102	1400
	80	52	1150	60	1200	68	1225	77	1250	86	1300	96	1325	106	1350
	100	55	1100	63	1125	71	1175	80	1200	90	1225	100	1275	110	1300
0.4	0	45	1600	52	1625	60	1650	68	1675	77	1700	87	1725	97	1750
	20	47	1500	55	1550	63	1575	72	1600	81	1625	90	1650	100	1675
	40	50	1425	58	1450	66	1500	75	1525	84	1575	94	1600	104	1625
	60	53	1350	61	1400	69	1425	78	1450	88	1500	98	1525	108	1575
	80	55	1275	64	1325	72	1375	82	1400	91	1450	101	1475	112	1525
	100	58	1225	67	1275	76	1300	85	1350	95	1400	105	1425	116	1475

SUSPENSION STRAND
 STRAND TENSIONS AND SAGS
 6M STRAND—ALUMINUM CONDUCTOR CABLES

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	450		475		500		525		550		575		600	
		Sag (In.)	Tens. (Lbs.)												
0.1	0	81	1225	91	1200	101	1200	—	—						
	20	86	1150	96	1150	106	1150	—	—						
	40	91	1075	101	1075	112	1100	—	—						
	60	96	1025	106	1025	117	1050	—	—						
	80	101	975	111	975	122	1000	—	—						
	100	106	925	116	950	127	950	—	—						
0.2	0	91	1425	101	1425	112	1425	—	—						
	20	96	1350	106	1350	117	1375	—	—						
	40	100	1275	111	1300	122	1300	—	—						
	60	105	1225	115	1250	126	1250	—	—						
	80	109	1175	120	1200	131	1225	—	—						
	100	114	1125	125	1150	136	1175	—	—						
0.3	0	100	1600	110	1625	—	—								
	20	103	1525	114	1550	—	—								
	40	108	1475	119	1500	—	—								
	60	112	1425	123	1450	—	—								
	80	116	1375	128	1400	—	—								
	100	121	1325	132	1350	—	—								
0.4	0	107	1775	—	—										
	20	111	1700	—	—										
	40	115	1650	—	—										
	60	119	1600	—	—										
	80	123	1550	—	—										
	100	127	1500	—	—										

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	100		125		150		175		200		225		250	
		Sag (In.)	Tens. (Lbs.)												
0.5	0	8	1400	12	1425	17	1475	22	1525	28	1575	34	1625	41	1650
	20	9	1250	13	1325	18	1375	23	1425	30	1475	36	1525	43	1575
	40	10	1125	14	1200	19	1275	25	1325	31	1375	38	1425	46	1500
	60	11	1025	15	1100	21	1175	27	1225	34	1300	41	1350	48	1425
	80	12	925	17	1000	23	1075	29	1150	36	1225	43	1275	51	1350
	100	13	825	18	925	24	1000	31	1075	38	1150	45	1225	53	1275
0.6	0	9	1425	13	1475	18	1550	24	1600	30	1650	37	1700	44	1750
	20	10	1300	14	1375	19	1425	25	1500	32	1550	39	1625	46	1675
	40	10	1175	15	1250	21	1325	27	1400	34	1475	41	1525	49	1600
	60	12	1075	17	1150	22	1225	29	1325	36	1375	43	1450	51	1525
	80	13	975	18	1075	24	1150	31	1225	38	1300	45	1375	53	1450
	100	14	900	20	975	26	1075	33	1175	40	1250	48	1325	56	1375
0.7	0	9	1475	14	1525	20	1600	26	1675	32	1725	39	1800	47	1850
	20	10	1350	15	1425	21	1500	27	1550	34	1650	41	1700	49	1775
	40	11	1225	17	1300	22	1400	29	1475	36	1550	43	1625	51	1700
	60	12	1125	18	1225	24	1300	31	1400	38	1475	45	1550	54	1625
	80	14	1025	19	1125	25	1225	32	1325	40	1400	48	1475	56	1550
	100	15	950	21	1050	27	1150	34	1250	42	1325	50	1425	58	1500
0.8	0	10	1500	15	1575	21	1650	27	1725	34	1800	41	1875	49	1950
	20	11	1375	16	1475	22	1550	29	1650	36	1725	43	1800	51	1875
	40	12	1275	18	1375	24	1450	30	1550	38	1625	45	1725	54	1800
	60	13	1175	19	1275	25	1375	32	1475	40	1550	47	1650	56	1725
	80	14	1075	20	1200	27	1300	34	1400	41	1475	50	1575	58	1650
	100	15	1000	22	1125	28	1225	36	1325	43	1425	52	1500	60	1600

SUSPENSION STRAND
 STRAND TENSIONS AND SAGS
 6M STRAND—ALUMINUM CONDUCTOR CABLES

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	275		300		325		350		375		400		425	
		Sag (In.)	Tens. (Lbs.)												
0.5	0	48	1700	56	1750	65	1775	73	1825	83	1850	92	1875	103	1900
	20	51	1625	59	1650	67	1700	76	1750	86	1775	96	1825	106	1850
	40	53	1550	62	1575	70	1625	80	1675	89	1725	99	1750	110	1775
	60	56	1475	65	1525	73	1575	83	1600	93	1650	103	1700	114	1725
	80	59	1400	67	1450	76	1500	86	1550	96	1600	106	1625	117	1675
	100	61	1325	70	1400	80	1450	89	1500	99	1550	110	1575	121	1625
0.6	0	52	1800	60	1850	69	1900	78	1950	88	2000	98	2025	108	2075
	20	54	1725	63	1775	71	1825	81	1875	91	1925	101	1950	112	2000
	40	57	1650	65	1700	74	1750	84	1800	94	1850	104	1900	115	1950
	60	59	1575	68	1625	77	1700	87	1750	97	1800	108	1850	119	1875
	80	62	1525	71	1575	80	1625	90	1675	100	1725	111	1775	122	1825
	100	64	1450	74	1525	83	1575	93	1625	103	1675	114	1725	126	1775
0.7	0	55	1925	63	1975	72	2025	82	2075	92	2125	102	2175	—	—
	20	57	1825	66	1900	75	1950	85	2000	95	2050	106	2100	—	—
	40	60	1750	69	1825	78	1875	88	1925	98	2000	109	2050	—	—
	60	62	1700	71	1750	81	1825	91	1875	101	1925	112	1975	—	—
	80	65	1625	74	1700	84	1750	94	1825	104	1875	115	1925	—	—
	100	67	1575	76	1625	86	1700	97	1750	107	1825	118	1875	—	—
0.8	0	58	2025	67	2075	76	2150	86	2200	96	2250	107	2300	—	—
	20	60	1925	69	2000	79	2075	89	2125	99	2175	110	2250	—	—
	40	62	1875	72	1925	81	2000	91	2050	102	2125	113	2175	—	—
	60	65	1800	74	1875	84	1925	94	2000	105	2050	116	2125	—	—
	80	67	1725	77	1800	87	1875	97	1950	108	2000	119	2075	—	—
	100	70	1675	79	1750	89	1825	100	1875	111	1950	122	2000	—	—

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	100		125		150		175		200		225		250	
		Sag (In.)	Tens. (Lbs.)												
0.9	0	11	1525	16	1625	22	1725	29	1800	36	1875	44	1975	52	2050
	20	12	1425	17	1525	24	1625	30	1700	38	1800	45	1875	54	1950
	40	13	1325	19	1425	25	1525	32	1625	39	1725	47	1800	56	1875
	60	14	1225	20	1325	26	1450	34	1550	41	1650	49	1725	58	1825
	80	15	1125	21	1250	28	1350	35	1475	43	1575	51	1650	60	1750
	100	16	1050	22	1175	29	1300	37	1400	45	1500	53	1600	62	1700
1.0	0	12	1575	17	1675	23	1775	30	1875	38	1950	45	2050	54	2125
	20	13	1450	18	1575	25	1675	32	1775	39	1875	47	1975	56	2050
	40	14	1350	19	1475	26	1575	33	1700	41	1800	49	1875	58	1975
	60	15	1250	21	1375	28	1500	35	1625	43	1725	51	1825	60	1900
	80	16	1175	22	1300	29	1425	37	1550	45	1650	53	1750	62	1850
	100	17	1100	23	1225	30	1350	38	1475	46	1575	55	1675	64	1775
1.2	0	13	1650	19	1750	26	1875	33	2000	41	2100	49	2200	58	2300
	20	14	1550	20	1675	27	1800	34	1900	42	2025	51	2125	60	2225
	40	15	1450	21	1575	28	1700	36	1825	44	1950	53	2050	62	2150
	60	16	1350	22	1500	30	1625	37	1750	46	1875	55	1975	64	2075
	80	17	1275	24	1425	31	1550	39	1675	47	1800	56	1925	66	2025
	100	18	1200	25	1350	32	1475	41	1625	49	1725	58	1850	68	1975
1.4	0	14	1725	20	1850	28	2000	35	2125	43	2250	52	2350	62	2475
	20	15	1625	22	1775	29	1900	37	2025	45	2175	54	2275	64	2400
	40	16	1525	23	1675	30	1825	38	1950	47	2075	56	2200	66	2325
	60	17	1450	24	1600	31	1750	40	1875	48	2025	58	2150	67	2250
	80	18	1350	25	1525	33	1675	41	1825	50	1950	59	2075	69	2200
	100	19	1275	26	1450	34	1600	43	1750	52	1875	61	2025	71	2125

SUSPENSION STRAND
 STRAND TENSIONS AND SAGS
 6M STRAND—ALUMINUM CONDUCTOR CABLES

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	275		300		325		350		375		400		425	
		Sag (In.)	Tens. (Lbs.)												
0.9	0	60	2125	70	2175	79	2250	89	2325	100	2375	—	—		
	20	63	2025	72	2100	82	2175	92	2250	103	2300	—	—		
	40	65	1975	74	2050	84	2125	95	2175	106	2250	—	—		
	60	67	1900	77	1975	87	2050	97	2125	108	2200	—	—		
	80	70	1825	79	1925	90	2000	100	2050	111	2125	—	—		
	100	72	1775	82	1850	92	1925	103	2000	114	2075	—	—		
1.0	0	63	2200	72	2275	82	2350	—	—						
	20	65	2125	75	2225	85	2300	—	—						
	40	67	2075	77	2150	87	2225	—	—						
	60	70	2000	79	2075	90	2150	—	—						
	80	72	1925	82	2025	92	2100	—	—						
	100	74	1875	84	1950	95	2050	—	—						
1.2	0	67	2400	77	2475	—	—								
	20	70	2325	80	2425	—	—								
	40	72	2250	82	2350	—	—								
	60	74	2200	84	2275	—	—								
	80	76	2125	86	2225	—	—								
	100	78	2075	89	2175	—	—								
1.4	0	72	2575	—	—										
	20	74	2500	—	—										
	40	76	2425	—	—										
	60	78	2375	—	—										
	80	80	2300	—	—										
	100	82	2250	—	—										

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	100		125		150		175		200		225		250	
		Sag (In.)	Tens. (Lbs.)												
1.6	0	15	1800	22	1950	29	2100	37	2250	46	2375	55	2500	65	2625
	20	16	1700	23	1850	31	2025	39	2150	48	2300	57	2425	67	2550
	40	17	1600	24	1775	32	1925	40	2075	49	2225	59	2350	69	2500
	60	18	1525	25	1700	33	1850	42	2025	51	2150	60	2300	71	2425
	80	19	1450	26	1625	34	1800	43	1950	52	2100	62	2225	72	2350
	100	20	1375	28	1550	36	1725	45	1875	54	2025	64	2175	74	2300
1.8	0	16	1875	23	2050	31	2200	39	2350	48	2500	58	2650	—	—
	20	17	1775	24	1950	32	2125	41	2275	50	2425	60	2575	—	—
	40	18	1700	25	1875	33	2050	42	2200	51	2350	61	2500	—	—
	60	19	1600	26	1800	35	1975	44	2125	53	2300	63	2450	—	—
	80	20	1525	28	1725	36	1900	45	2075	55	2225	65	2375	—	—
	100	21	1450	29	1650	37	1825	46	2000	56	2175	66	2325	—	—
2.0	0	17	1950	24	2125	33	2300	41	2475	51	2650	61	2800	—	—
	20	18	1850	25	2050	34	2225	43	2400	52	2575	62	2725	—	—
	40	19	1775	27	1975	35	2150	44	2325	54	2500	64	2650	—	—
	60	20	1675	28	1900	36	2075	45	2250	55	2425	65	2575	—	—
	80	21	1600	29	1825	37	2000	47	2200	57	2350	67	2525	—	—
	100	22	1550	30	1750	39	1950	48	2125	58	2300	69	2450	—	—
2.2	0	18	2025	26	2225	34	2400	43	2600	53	2775	—	—	—	—
	20	19	1925	27	2125	35	2325	44	2525	54	2700	—	—	—	—
	40	20	1850	28	2050	36	2250	46	2450	56	2625	—	—	—	—
	60	21	1775	29	1975	37	2175	47	2375	57	2550	—	—	—	—
	80	22	1700	30	1900	39	2125	48	2300	58	2500	—	—	—	—
	100	22	1625	31	1850	40	2050	50	2250	60	2425	—	—	—	—

SUSPENSION STRAND
 STRAND TENSIONS AND SAGS
 6M STRAND—ALUMINUM CONDUCTOR CABLES

ALUMINUM CONDUCTOR CABLE, 6M STRAND
Span Length (Feet)

Cable Weight Lbs./Ft.	Temp. (°F)	100		125		150		175		200		225		250	
		Sag (In.)	Tens. (Lbs.)												
2.4	0	19	2100	27	2300	35	2500	45	2700	—	—				
	20	20	2000	28	2225	36	2425	46	2625	—	—				
	40	21	1925	29	2150	38	2350	47	2550	—	—				
	60	21	1850	30	2075	39	2275	48	2475	—	—				
	80	22	1775	31	2000	40	2225	50	2425	—	—				
	100	23	1700	32	1925	41	2150	51	2350	—	—				