

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G51.125.5
Issue 1, July, 1955
AT&TCo Standard

SUSPENSION STRAND
STRAND TENSIONS AND SAGS
25M STRAND — COPPER
CONDUCTOR CABLES

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1. GENERAL

1.01 This section covers the approximate sags for **copper conductor cables on 25,000 pound suspension strand.**

1.02 The values of cable-in-place sags 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.

1.03 These values apply for all copper conductor cables on 25,000 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. SAGS WITH CABLE IN PLACE

2.01 When 25,000 pound suspension strand is placed at the proper stringing tension, the approximate sags with a copper conductor cable in place will be as listed in the following tables.

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
0.2	0	6	7	9	10	12	14	16	19	21	23	26	29	32	35	38	41
	20	6	8	9	11	13	15	17	19	22	24	27	30	33	36	40	43
	40	6	8	10	11	13	15	18	20	23	25	28	31	35	38	41	45
	60	7	8	10	12	14	16	19	21	24	27	30	33	36	40	43	47
	80	7	9	11	13	15	17	20	22	25	28	31	34	38	41	45	49
	100	7	9	11	13	15	18	20	23	26	29	33	36	40	43	47	51
0.4	0	8	9	11	13	16	18	21	24	27	30	33	37	40	44	48	52
	20	8	10	12	14	16	19	22	25	28	31	34	38	42	46	50	54
	40	8	10	12	15	17	20	23	26	29	32	36	40	44	48	52	57
	60	9	11	13	15	18	21	24	27	30	34	37	41	45	50	54	59
	80	9	11	13	16	19	22	25	28	32	35	39	43	47	52	57	61
	100	9	12	14	17	20	23	26	29	33	37	41	45	50	54	59	64
0.6	0	9	11	14	16	19	22	25	28	32	36	40	44	48	53	58	63
	20	10	12	14	17	20	23	26	30	33	37	41	46	50	55	60	65
	40	10	12	15	18	21	24	27	31	35	39	43	48	52	57	62	67
	60	10	13	15	18	21	25	28	32	36	40	45	49	54	59	65	70
	80	11	13	16	19	22	26	30	34	38	42	47	52	57	62	67	73
	100	11	14	17	20	24	27	31	35	39	44	49	54	59	64	70	76
0.8	0	11	13	16	19	22	26	29	33	37	42	46	51	56	61	67	72
	20	11	14	17	20	23	27	30	35	39	43	48	53	58	63	69	75
	40	12	14	17	21	24	28	32	36	40	45	50	55	60	66	72	77
	60	12	15	18	21	25	29	33	37	42	47	52	57	63	68	74	80
	80	13	16	19	22	26	30	34	39	44	49	54	59	65	71	77	83
	100	13	17	20	24	27	32	36	41	46	51	56	62	68	74	80	86

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
1.0	0	12	15	18	22	25	29	33	38	42	47	53	58	63	69	75	81
	20	13	16	19	23	26	30	35	39	44	49	54	60	66	72	78	84
	40	13	16	20	23	27	32	36	41	46	51	56	62	68	74	80	87
	60	14	17	21	24	29	33	38	42	48	53	59	64	70	77	83	90
	80	15	18	22	26	30	34	39	44	49	55	61	67	73	79	86	93
	100	15	19	23	27	31	36	41	46	51	57	63	69	76	82	89	96
1.2	0	14	17	21	24	28	33	37	42	47	53	58	64	70	77	83	90
	20	14	18	21	25	30	34	39	44	49	55	60	67	73	79	86	93
	40	15	18	22	26	31	35	40	45	51	57	63	69	75	82	89	96
	60	16	19	23	27	32	37	42	47	53	59	65	71	78	85	92	99
	80	16	20	24	29	33	38	43	49	55	61	67	74	80	87	95	102
	100	17	21	25	30	35	40	45	51	57	63	70	76	83	90	98	105
1.4	0	15	19	23	27	31	36	41	47	52	58	64	71	77	84	91	98
	20	16	20	24	28	33	38	43	48	54	60	66	73	80	87	94	101
	40	17	21	25	29	34	39	44	50	56	62	68	75	82	89	97	104
	60	17	21	26	30	35	40	46	52	58	64	71	78	85	92	100	107
	80	18	22	27	32	37	42	48	54	60	66	73	80	87	95	103	111
	100	19	23	28	33	38	44	50	56	62	69	76	83	90	98	106	114
1.6	0	17	21	25	30	34	39	45	51	57	63	70	76	84	91	98	106
	20	18	22	26	31	36	41	47	52	59	65	72	79	86	93	101	109
	40	18	22	27	32	37	42	48	54	61	67	74	81	89	96	104	112
	60	19	23	28	33	38	44	50	56	63	69	76	84	91	99	107	115
	80	20	24	29	34	40	46	52	58	65	72	79	86	94	102	110	118
	100	21	25	30	36	41	47	54	60	67	74	81	89	97	105	113	122

SUSPENSION STRAND
STRAND TENSIONS AND SAGS
25M STRAND—COPPER CONDUCTOR CABLES

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
1.8	0	18	23	27	32	37	43	49	55	61	68	75	82	90	97	105	114
	20	19	23	28	33	39	44	50	57	63	70	77	85	92	100	108	117
	40	20	24	29	34	40	46	52	58	65	72	79	87	95	103	111	120
	60	21	25	30	36	41	47	54	60	67	74	82	90	98	106	114	123
	80	22	26	32	37	43	49	56	62	69	77	84	92	100	109	117	126
	100	23	28	33	39	45	51	58	64	72	79	87	95	103	112	120	129
2.0	0	20	24	29	34	40	46	52	59	65	73	80	88	94	104	112	—
	20	21	25	30	36	41	47	54	60	67	75	82	90	98	106	115	—
	40	21	26	31	37	43	49	55	62	69	77	85	92	101	109	118	—
	60	22	27	33	38	44	51	57	64	72	79	87	95	103	112	121	—
	80	23	28	34	40	46	52	59	66	74	82	90	98	106	115	124	—
	100	24	30	35	41	48	54	61	69	76	84	92	101	109	118	127	—
2.2	0	21	26	31	37	43	49	55	62	69	77	85	93	101	109	—	—
	20	22	27	32	38	44	50	57	64	72	79	87	95	104	112	—	—
	40	23	28	33	39	46	52	59	66	74	81	89	98	106	115	—	—
	60	24	29	35	41	47	54	61	68	76	84	92	100	109	118	—	—
	80	25	30	36	42	49	56	63	70	78	86	94	103	112	121	—	—
	100	26	31	37	44	50	57	65	72	80	89	97	106	115	124	—	—
2.4	0	23	28	33	39	45	52	59	66	73	81	89	98	106	—	—	—
	20	24	29	34	40	47	53	60	68	75	83	92	100	109	—	—	—
	40	24	30	36	42	48	55	62	70	78	86	94	103	112	—	—	—
	60	25	31	37	43	50	57	64	72	80	88	97	105	114	—	—	—
	80	26	32	38	45	51	59	66	74	82	90	99	108	117	—	—	—
	100	27	33	40	46	53	61	68	76	84	93	102	111	120	—	—	—

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
2.6	0	11	15	19	24	29	35	41	48	55	62	69	77	85	94	102	111
	20	12	16	20	25	30	36	43	49	56	64	71	79	88	96	105	114
	40	12	16	21	26	32	38	44	51	58	65	73	81	90	99	107	117
	60	13	17	22	27	33	39	45	52	60	67	75	84	92	101	110	119
	80	13	18	22	28	34	40	47	54	62	69	77	86	95	104	113	122
	100	14	18	23	29	35	42	49	56	63	71	80	88	97	106	116	125
2.8	0	12	16	20	25	31	37	43	50	57	65	73	81	89	98	107	—
	20	12	16	21	26	32	38	45	52	59	67	75	83	91	100	109	—
	40	13	17	22	27	33	39	46	53	61	69	77	85	94	103	112	—
	60	13	18	23	28	34	41	48	55	63	70	79	87	96	105	115	—
	80	14	18	24	29	36	42	49	57	64	72	81	90	99	108	117	—
	100	14	19	25	31	37	44	51	58	66	75	83	92	101	110	120	—
3.0	0	12	17	22	27	33	39	46	53	60	68	76	84	93	102	111	—
	20	13	17	22	28	34	40	47	54	62	70	78	86	95	104	114	—
	40	13	18	23	29	35	41	48	56	63	72	80	89	98	107	116	—
	60	14	19	24	30	36	43	50	57	65	73	82	91	100	109	119	—
	80	15	19	25	31	37	44	51	59	67	75	84	93	102	112	122	—
	100	15	20	26	32	39	46	53	61	69	78	86	95	105	115	124	—
3.5	0	14	19	25	30	37	43	51	58	67	75	84	93	102	112	—	—
	20	15	20	25	31	38	45	52	60	68	77	86	95	104	114	—	—
	40	15	21	26	32	39	46	53	62	70	79	88	97	107	117	—	—
	60	16	21	27	33	40	47	55	63	72	81	90	100	109	119	—	—
	80	17	22	28	35	41	49	57	65	74	83	92	102	111	122	—	—
	100	17	23	29	36	43	50	58	67	76	85	94	104	114	124	—	—

SUSPENSION STRAND
STRAND TENSIONS AND SAGS
25M STRAND—COPPER CONDUCTOR CABLES

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475
4.0	0	7	11	16	21	27	33	40	47	55	64	72	81	91	100	110	
	20	7	11	16	22	28	34	41	49	57	65	74	83	93	102	113	
	40	8	12	17	22	28	35	42	50	58	67	76	85	95	105	115	
	60	8	12	17	23	29	36	44	52	60	68	78	87	97	107	117	
	80	8	13	18	24	30	37	45	53	61	70	79	89	99	109	120	
	100	9	13	19	25	31	39	46	54	63	72	81	91	101	111	122	
4.5	0	8	12	17	23	30	36	44	52	60	68	78	87	97	108	118	
	20	8	13	18	24	30	37	45	53	61	70	79	89	99	110	121	
	40	9	13	19	25	31	39	46	54	63	72	81	91	101	112	123	
	60	9	14	19	26	32	40	47	56	64	73	83	93	103	114	125	
	80	9	14	20	26	33	41	49	57	66	75	85	95	106	116	127	
	100	10	15	21	27	35	42	50	59	68	77	87	97	108	119	130	
5.0	0	9	13	19	25	31	39	47	55	64	73	83	93	103	114	—	
	20	9	14	19	25	32	40	48	56	65	75	85	95	105	116	—	
	40	9	14	20	26	33	41	49	58	67	76	86	97	107	118	—	
	60	10	15	21	27	34	42	50	59	68	78	88	99	109	120	—	
	80	10	15	21	28	35	43	52	61	70	80	90	100	111	123	—	
	100	11	16	22	29	36	44	53	62	72	82	92	102	113	125	—	
5.5	0	9	14	20	27	34	42	50	59	68	78	88	98	109	—		
	20	10	15	21	28	35	43	51	60	69	79	89	100	111	—		
	40	10	15	22	28	36	44	53	62	71	81	91	102	113	—		
	60	11	16	22	29	37	45	54	63	73	83	93	104	115	—		
	80	11	17	23	30	38	46	55	64	74	84	95	106	117	—		
	100	12	17	24	31	39	48	57	66	76	86	97	108	119	—		

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475
6.0	0	10	15	21	28	36	44	53	62	71	82	92	103	114			
	20	10	16	22	29	37	45	54	63	73	83	94	105	116			
	40	11	16	23	30	38	46	55	65	74	85	96	107	118			
	60	11	17	23	31	39	47	56	66	76	87	97	109	120			
	80	12	18	24	32	40	48	58	67	78	88	99	111	122			
	100	12	18	25	33	41	50	59	69	79	90	101	113	124			
6.5	0	11	16	23	30	38	47	56	65	75	86	97	108	119			
	20	11	17	24	31	39	48	57	67	77	87	98	110	121			
	40	12	18	24	32	40	49	58	68	78	89	100	112	123			
	60	12	18	25	33	41	50	60	70	80	91	102	113	125			
	80	13	19	26	34	42	51	61	71	81	92	104	115	127			
	100	13	19	27	35	43	53	62	72	83	94	105	117	129			
7.0	0	11	17	24	31	40	49	58	68	78	89	101	112	—			
	20	12	18	25	32	41	50	59	69	80	91	102	114	—			
	40	12	18	25	33	42	51	60	71	81	92	104	116	—			
	60	13	19	26	34	43	52	62	72	83	94	106	118	—			
	80	13	20	27	35	44	53	63	74	84	96	107	120	—			
	100	14	20	28	36	45	54	64	75	86	97	109	121	—			
7.5	0	12	18	25	33	42	51	61	71	82	93	105	117	—			
	20	13	19	26	34	43	52	62	73	83	95	106	118	—			
	40	13	20	27	35	44	53	63	74	85	96	108	120	—			
	60	13	20	28	36	45	55	65	75	86	98	110	122	—			
	80	14	21	28	37	46	56	66	77	88	100	112	124	—			
	100	14	21	29	38	47	57	67	78	90	101	113	126	—			

SUSPENSION STRAND
 STRAND TENSIONS AND SAGS
 25M STRAND—COPPER CONDUCTOR CABLES

COPPER CONDUCTOR CABLE, 25M STRAND
In-Place Sag (Inches)

Cable Weight Lbs./Ft.	Temp. (°F)	Span Length (Feet)															
		100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475
8.0	0	13	19	26	35	43	53	63	74	85	96	108					
	20	13	20	27	35	44	54	63	75	86	98	110					
	40	14	20	28	36	45	55	65	76	88	99	112					
	60	14	21	29	37	46	56	67	78	89	101	113					
	80	15	22	29	38	47	57	68	79	91	103	115					
	100	15	22	30	39	49	59	69	81	92	104	117					
8.5	0	13	20	27	36	45	54	65	76	87	99	—					
	20	14	20	28	37	46	56	66	77	88	100	—					
	40	14	21	29	37	47	57	67	78	90	102	—					
	60	15	22	30	38	48	58	69	80	91	104	—					
	80	15	22	30	39	49	59	70	81	93	105	—					
	100	16	23	31	40	50	60	71	83	94	107	—					