BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G51.125.1
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AT&TCo Standard

SUSPENSION STRAND
STRAND TENSIONS AND SAGS
STRINGING TENSIONS

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1. GENERAL

1.01 This section covers the stringing tensions used in placing suspension strand for supporting copper and aluminum conductor cables and the methods of obtaining such tensions. Sections G51.125.1 through G51.125.7 inclusive replace Sections G51.125, G51.126.1 and G51.127.1.

1.02 The strand stringing tensions covered herein are applicable in all loading areas regardless of whether the cable sheath is lead, alpeth, stalpeth, aerial tape armor, etc.

2. STRINGING TENSIONS FOR COPPER CONDUCTOR CABLES

2.01 Place the suspension strand for supporting copper conductor cables at the tensions shown in the following tables for the appropriate span length. The tensions shown are those which should be obtained before the cable is installed.

(a) **6,000 Pound Suspension Strand**

Temperature Degrees Fahr.	Stringing Tension (Pounds) Spans to 250 ft.	Spans 250 to 450 ft.	Spans over 450 ft.
0	1550	1475	1375
20	1400	1350	1275
40	1250	1225	1175
60	1100	1100	1100
80	900	1000	1025
100	825	900	950

(b) **10,000 Pound Suspension Strand**

Temperature Degrees Fahr.	Stringing Tension (Pounds) Spans to 400 ft.	Spans over 400 ft.
0	2675	2600
20	2475	2450
40	2300	2275
60	2100	2100
80	1925	1950
100	1725	1800

(c) **16,000 Pound Suspension Strand**

Temperature Degrees Fahr.	Stringing Tension (Pounds) All Spans
0	4425
20	4150
40	3875
60	3600
80	3325
100	3075

(d) 25,000 Pound Suspension Strand

Temperature Degrees Fahr.	Stringing Tension (Pounds) All Spans
0	9175
20	8800
40	8400
60	8000
80	7625
100	7250

3. STRINGING TENSIONS FOR ALUMINUM CONDUCTOR CABLES

3.01 Place the suspension strand for supporting aluminum conductor cables at the tensions shown in the following tables for the appropriate span lengths.

(a) 6,000 Pound Suspension Strand

Temperature Degrees Fahr.	Stringing Tensions (Pounds) Spans to 250 ft.	Spans 250 to 450 ft.	Spans over 450 ft.
0	1200	1075	975
20	1075	975	900
40	925	875	850
60	800	800	800
80	675	725	750
100	575	675	700

(b) 10,000 Pound Suspension Strand

Temperature Degrees Fahr.	Stringing Tensions (Pounds) Spans to 250 ft.	Spans 250 to 450 ft.	Spans over 450 ft.
0	1975	1875	1750
20	1775	1700	1625
40	1575	1550	1500
60	1400	1400	1400
80	1225	1275	1300
100	1050	1150	1200

4. METHODS OF OBTAINING SPECIFIED STRINGING TENSIONS

4.01 Obtain the temperature of the air by means of a thermometer. In obtaining the temperature, the thermometer should be placed in a vertical position and exposed to approximately the same sun or shade conditions as exist along the section of strand being tensioned. Select the tension corresponding to the nearest temperature and span length as shown in the tables in Parts 2 and 3.

4.02 Use a strand dynamometer to determine the tension of the suspension strand.

4.03 It is desirable to first pull the strand until it is tighter than the desired tension and then let it off until the desired tension is obtained. This extra tension should not exceed 500 pounds.

4.04 The points at which the strand tension should be measured under various conditions are as follows:

(a) Straight sections, free from changes in grade.

(1) Less than 10 spans: Measure the tension near the middle of the section of strand.

(2) 10 to 20 spans: Measure the tension first at a point about two-thirds of the distance from the pulling end and then at a point about one-third of the distance from the pulling end.

(3) Over 20 spans: Measure the tension first at a point about three-fourths of the distance from the pulling end and then at points about one-half the distance and finally at one-fourth of the distance.

(b) Sections including changes in grade or corners.

(1) Measure the tension first at the far side of the farthest corner or pole where change in grade occurs, and then at each corner or "change in grade" pole, working toward the pulling end.

(2) As the desired tension is obtained in each portion of strand being pulled, tighten the bolts of the suspension clamps.