POLE LINES

MINIMUM CIRCUMFERENCES AT CRITICAL SECTION

6000 POUND FIBER STRENGTH

ALL STORM LOADING AREAS

ALL POLE LENGTHS

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1. GENERAL

1.01 This section describes the use of tables of minimum circumferences at the critical section for the several classes of lines for poles having an assigned fiber stress of 6000 psi.

1.02 The classes of pole lines are explained in Part 3 of 621-215-011. The Plant Engineer will furnish the class of the pole line being inspected. The fiber strength of commonly used poles is given in Part 5 of 621-215-011. The Plant Engineer will furnish the fiber strength of poles whose wood is not listed.

2. MINIMUM CIRCUMFERENCES

2.01 The dimensions shown in each table are minimum circumferences of sound wood at the critical section. (See Section 621-215-015). Any pole failing to meet the dimensions shown should normally be considered inadequate.

2.02 There are six tables, one for each class of line, with the exception that Table A covers both Class AA and Class JB lines. In calculating the minimum circumferences listed in the tables, the maximum percentage of fiber stress, which may be allowed before replacement is desirable was taken into account.

2.03 The tables show the required minimum circumferences in inches, for bending moments ranging from 10 to 600 foot pounds per foot of span length, resulting from transverse storm loading on the attachments on a pole and on the aboveground portion of the pole itself. Minimum circumferences are given for spans of 100 to 600 feet in length.

2.04 The method for determining moments at the groundline per foot of span length is described in Section 621-215-011. Since storm loading is taken into account when computing groundline moments, the tables apply to all storm loading areas. Also, since the minimum circumferences are based on moments at the critical section, they apply to poles of all lengths.

2.05 For poles having such defects as hollow heart or decay pockets, actual measured circumferences of sound wood at groundline should be corrected as described in Section 621-215-015.

2.06 When referring to the tables, the attachment load should be taken as that existing at the time of inspection, together with any expected increase before the next inspection.

2.07 To determine which poles require attention, compare the corrected circumference measurements with the appropriate minimum circumferences shown in the tables, making due allowance for probable decay before the next inspection.

3. TABLES OF MINIMUM CIRCUMFERENCES AT CRITICAL SECTIONS

3.01 Tables A through F list the minimum circumferences at the critical sections for the fiber stress and various classes of lines.

TABLE A — 6000 POUND FIBER STRESS FOR CLASS AA AND CLASS JB LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	14.0	15.5	16.5	18.0	19.0	19.0	20.0	20.0	21.5	21.5	22.5
20	16.5	18.0	20.0	21.5	22.5	23.5	25.0	26.0	26.0	27.0	28.5
30	18.0	20.0	22.5	23.5	25.0	26.0	28.5	28.5	29.5	31.0	32.0
40	20.0	22.5	25.0	26.0	28.5	29.5	31.0	32.0	33.0	34.5	35.5
50	21.5	23.5	26.0	28.5	29.5	32.0	33.0	34.5	35.5	36.5	38.0
60	22.5	25.0	28.5	29.5	32.0	33.0	34.5	36.5	38.0	39.0	40.5
70	23.5	26.0	29.5	32.0	33.0	35.5	36.5	38.0	39.0	40.5	41.5
80	25.0	27.0	31.0	33.0	35.5	36.5	38.0	40.5	41.5	42.5	44.0
90	26.0	28.5	32.0	34.5	36.5	38.0	40.5	41.5	42.5	44.0	46.0
100	27.0	29.5	33.0	35.5	38.0	39.0	41.5	42.5	44.0	46.0	47.5
125	28.5	32.0	35.5	38.0	40.5	42.5	45.0	46.0	47.5	50.0	51.0
150	29.5	34.5	38.0	40.5	42.5	45.0	47.5	48.5	51.0	52.0	53.5
175	32.0	35.5	39.0	42.5	45.0	47.5	50.0	52.0	53.5	55.5	57.0
200	33.0	38.0	41.5	45.0	47.5	50.0	52.0	53.5	55.5	58.0	59.0
225	34.5	39.0	42.5	46.0	48.5	52.0	54.5	55.5	58.0	60.5	61.5
250	35.5	40.5	44.0	47.5	51.0	53.5	55.5	58.0	60.5	61.5	64.0
275	36.5	41.5	46.0	50.0	52.0	55.5	58.0	60.5	61.5	64.0	65.0
300	38.0	42.5	47.5	51.0	53.5	57.0	59.0	61.5	64.0	65.0	67.5
325	39.0	44.0	48.5	52.0	55.5	58.0	60.5	63.0	65.0	67.5	70.0
350	40.5	45.0	50.0	53.5	57.0	59.0	63.0	65.0	67.5	68.5	
375	40.5	46.0	51.0	54.5	58.0	60.5	64.0	66.5	68.5		
400	41.5	47.5	52.0	55.5	59.0	63.0	65.0	67.5	70.0		
425	42.5	48.5	53.5	57.0	60.5	64.0	66.5	68.5			
450	42.5	48.5	53.5	58.0	61.5	65.0	67.5	70.0			
475	44.0	50.0	54.5	59.0	63.0	66.5	68.5				
500	44.0	51.0	55.5	60.5	64.0	67.5	70.0				
525	45.0	52.0	57.0	61.5	65.0	67.5					
550	46.0	52.0	58.0	61.5	65.0	68.5					
575	46.0	53.5	58.0	63.0	66.5	70.0					
600	47.5	54.5	59.0	64.0	67.5						

TABLE B — 6000 POUND FIBER STRESS FOR CLASS A LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	12.0	13.0	14.0	15.5	16.5	16.5	17.5	17.5	18.5	18.5	19.5
20	14.0	15.5	17.5	18.5	19.5	20.5	21.5	22.5	22.5	23.5	24.5
30	15.5	17.5	19.5	20.5	21.5	22.5	24.5	24.5	25.5	26.5	27.5
40	17.5	19.5	21.5	22.5	24.5	25.5	26.5	27.5	28.5	29.5	30.5
50	18.5	20.5	22.5	24.5	25.5	27.5	28.5	29.5	30.5	31.5	32.5
60	19.5	21.5	24.5	25.5	27.5	28.5	29.5	31.5	32.5	33.5	34.5
70	20.5	22.5	25.5	27.5	28.5	30.5	31.5	32.5	33.5	34.5	35.5
80	21.5	23.5	26.5	28.5	30.5	31.5	32.5	34.5	35.5	36.5	37.5
90	22.5	24.5	27.5	29.5	31.5	32.5	34.5	35.5	36.5	37.5	39.5
100	23.5	25.5	28.5	30.5	32.5	33.5	35.5	36.5	37.5	39.5	40.5
125	24.5	27.5	30.5	32.5	34.5	36.5	38.5	39.5	40.5	42.5	43.5
150	25.5	29.5	32.5	34.5	36.5	38.5	40.5	41.5	43.5	45.0	46.0
175	27.5	30.5	33.5	36.5	38.5	40.5	42.5	45.0	46.0	48.0	49.0
200	28.5	32.5	35.5	38.5	40.5	42.5	45.0	46.0	48.0	50.0	51.0
225	29.5	33.5	36.5	39.5	41.5	45.0	47.0	48.0	50.0	52.0	53.0
250	30.5	34.5	37.5	40.5	43.5	46.0	48.0	50.0	52.0	53.0	55.0
275	31.5	35.5	39.5	42.5	45.0	48.0	50.0	52.0	53.0	55.0	56.0
300	32.5	36.5	40.5	43.5	46.0	49.0	51.0	53.0	55.0	56.0	58.0
325	33.5	37.5	41.5	45.0	48.0	50.0	52.0	54.0	56.0	58.0	60.0
350	34.5	38.5	42.5	46.0	49.0	51.0	54.0	56.0	58.0	59.0	61.0
375	34.5	39.5	43.5	47.0	50.0	52.0	55.0	57.0	59.0	61.0	62.0
400	35.5	40.5	45.0	48.0	51.0	54.0	56.0	58.0	60.0	62.0	64.0
425	36.5	41.5	46.0	49.0	52.0	55.0	57.0	59.0	61.0	63.0	65.0
450	36.5	41.5	46.0	50.0	53.0	56.0	58.0	60.0	62.0	64.0	66.0
475	37.5	42.5	47.0	51.0	54.0	57.0	59.0	61.0	63.0	65.0	67.0
500	37.5	43.5	48.0	52.0	55.0	58.0	60.0	62.0	64.0	66.0	68.0
525	38.5	45.0	49.0	53.0	56.0	58.0	61.0	63.0	65.0	67.0	69.0
550	39.5	45.0	50.0	53.0	56.0	59.0	62.0	64.0	66.0	68.0	70.0
575	39.5	46.0	50.0	54.0	57.0	60.0	63.0	65.0	67.0	69.0	
600	40.5	47.0	51.0	55.0	58.0	61.0	64.0	66.0	68.0	70.0	

TABLE C — 6000 POUND FIBER STRESS FOR CLASS B LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	10.5	11.5	12.5	13.5	14.0	14.0	15.0	15.0	16.0	16.0	17.0
20	12.5	13.5	15.0	16.0	17.0	18.0	18.5	19.5	19.5	20.5	21.5
30	13.5	15.0	17.0	18.0	18.5	19.5	21.5	21.5	22.0	23.0	24.0
40	15.0	17.0	18.5	19.5	21.5	22.0	23.0	24.0	25.0	26.0	26.5
50	16.0	18.0	19.5	21.5	22.0	24.0	25.0	26.0	26.5	27.5	28.5
60	17.0	18.5	21.5	22.0	24.0	25.0	26.0	27.5	28.5	29.5	30.0
70	18.0	19.5	22.0	24.0	25.0	26.5	27.5	28.5	29.5	30.0	31.0
80	18.5	20.5	23.0	25.0	26.5	27.5	28.5	30.0	31.0	32.0	33.0
90	19.5	21.5	24.0	26.0	27.5	28.5	30.0	31.0	32.0	33.0	34.5
100	20.5	22.0	25.0	26.5	28.5	29.5	31.0	32.0	33.0	34.5	35.5
125	21.5	24.0	26.5	28.5	30.0	32.0	34.0	34.5	35.5	37.5	38.0
150	22.0	26.0	28.5	30.0	32.0	34.0	35.5	36.5	38.0	39.0	40.0
175	24.0	26.5	29.5	32.0	34.0	35.5	37.5	39.0	40.0	42.0	42.5
200	25.0	28.5	31.0	34.0	35.5	37.5	39.0	40.0	42.0	43.5	44.5
225	26.0	29.5	32.0	34.5	36.5	39.0	41.0	42.0	43.5	45.5	46.0
250	26.5	30.0	33.0	35.5	38.0	40.0	42.0	43.5	45.5	46.0	48.0
275	27.5	31.0	34.5	37.5	39.0	42.0	43.5	45.5	46.0	48.0	49.0
300	28.5	32.0	35.5	38.0	40.0	42.5	44.5	46.0	48.0	49.0	50.5
325	29.5	33.0	36.5	39.0	42.0	43.5	45.5	47.0	49.0	50.5	52.5
350	30.0	34.0	37.5	40.0	42.5	44.5	47.0	49.0	50.5	51.5	53.5
375	30.0	34.5	38.0	41.0	43.5	45.5	48.0	50.0	51.5	53.5	54.0
400	31.0	35.5	39.0	42.0	44.5	47.0	49.0	50.5	52.5	54.0	56.0
425	32.0	36.5	40.0	42.5	45.5	48.0	50.0	51.5	53.5	55.0	57.0
450	32.0	36.5	40.0	43.5	46.0	49.0	50.5	52.5	54.0	56.0	58.0
475	33.0	37.5	41.0	44.5	47.0	50.0	51.5	53.5	55.0	57.0	58.5
500	33.0	38.0	42.0	45.5	48.0	50.5	52.5	54.0	56.0	58.0	59.5
525	34.0	39.0	42.5	46.0	49.0	50.5	53.5	55.0	57.0	58.5	60.5
550	34.5	39.0	43.5	46.0	49.0	51.5	54.0	56.0	58.0	59.5	61.5
575	34.5	40.0	43.5	47.0	50.0	52.5	55.0	57.0	58.5	60.5	62.0
600	35.5	41.0	44.5	48.0	50.5	53.5	56.0	58.0	59.5	61.5	64.0

TABLE D — 6000 POUND FIBER STRESS FOR CLASS C LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	10.0	11.0	12.0	12.5	13.5	13.5	14.5	14.5	15.0	15.0	16.0
20	12.0	12.5	14.5	15.0	16.0	17.0	17.5	18.5	18.5	19.5	20.5
30	12.5	14.5	16.0	17.0	17.5	18.5	20.5	20.5	21.0	22.0	23.0
40	14.5	16.0	17.5	18.5	20.5	21.0	22.0	23.0	23.5	24.5	25.5
50	15.0	17.0	18.5	20.5	21.0	23.0	23.5	24.5	25.5	26.0	27.0
60	16.0	17.5	20.5	21.0	23.0	23.5	24.5	26.0	27.0	28.0	28.5
70	17.0	18.5	21.0	23.0	23.5	25.5	26.0	27.0	28.0	28.5	29.5
80	17.5	19.5	22.0	23.5	25.5	26.0	27.0	28.5	29.5	30.5	31.0
90	18.5	20.5	23.0	24.5	26.0	27.0	28.5	29.5	30.5	31.0	33.0
100	19.5	21.0	23.5	25.5	27.0	28.0	29.5	30.5	31.0	33.0	34.0
125	20.5	23.0	25.5	27.0	28.5	30.5	32.0	33.0	34.0	35.5	36.5
150	21.0	24.5	27.0	28.5	30.5	32.0	34.0	34.5	36.5	37.0	38.0
175	23.0	25.5	28.0	30.5	32.0	34.0	35.5	37.0	38.0	39.5	40.5
200	23.5	27.0	29.5	32.0	34.0	35.5	37.0	38.0	39.5	41.5	42.0
225	24.5	28.0	30.5	33.0	34.5	37.0	39.0	39.5	41.5	43.0	44.0
250	25.5	28.5	31.0	34.0	36.5	38.0	39.0	41.5	43.0	44.0	45.5
275	26.0	29.5	33.0	35.5	37.0	39.5	41.5	43.0	44.0	45.5	46.5
300	27.0	30.5	34.0	36.5	38.0	40.5	42.0	44.0	45.5	46.5	48.0
325	28.0	31.0	34.5	37.0	39.5	41.5	43.0	44.5	46.5	48.0	50.0
350	28.5	32.0	35.5	38.0	40.5	42.0	44.5	46.5	48.0	49.0	50.5
375	28.5	33.0	36.5	39.0	41.5	43.0	45.5	47.5	49.0	50.5	51.5
400	29.5	34.0	37.0	39.5	42.0	44.5	46.5	48.0	50.0	51.5	53.0
425	30.5	34.5	38.0	40.5	43.0	45.5	47.5	49.0	50.5	52.5	54.0
450	30.5	34.5	38.0	41.5	44.0	46.5	48.0	50.0	51.5	53.0	55.0
475	31.0	35.5	39.0	42.0	44.5	47.5	49.0	50.5	52.5	54.0	55.5
500	31.0	36.5	39.5	43.0	45.5	48.0	50.0	51.5	53.0	55.0	56.5
525	32.0	37.0	40.5	44.0	46.5	48.0	50.5	52.5	54.0	55.5	57.5
550	33.0	37.0	41.5	44.0	46.5	49.0	51.5	53.0	55.0	56.5	58.0
575	33.0	38.0	41.5	44.5	47.5	50.0	52.5	54.0	55.5	57.5	59.0
600	34.0	39.0	42.0	45.5	48.0	50.5	53.0	55.0	56.5	58.0	61.0

TABLE E — 6000 POUND FIBER STRESS FOR CLASS R LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	9.5	10.5	11.5	12.0	13.0	13.0	13.5	13.5	14.5	14.5	15.5
20	11.5	12.0	13.5	14.5	15.5	16.0	17.0	18.0	18.0	18.5	19.5
30	12.0	13.5	15.5	16.0	17.0	18.0	19.5	19.5	20.0	21.0	22.0
40	13.5	15.5	17.0	18.0	19.5	20.0	21.0	22.0	22.5	23.5	24.0
50	14.5	16.0	18.0	19.5	20.0	22.0	22.5	23.5	24.0	25.0	26.0
60	15.5	17.0	19.5	20.0	22.0	22.5	23.5	25.0	26.0	26.5	27.5
70	16.0	18.0	20.0	22.0	22.5	24.0	25.0	26.0	26.5	27.5	28.5
80	17.0	18.5	21.0	22.5	24.0	25.0	26.0	27.5	28.5	29.0	30.0
90	18.0	19.5	22.0	23.5	25.0	26.0	27.5	28.5	29.0	30.0	31.5
100	18.5	20.0	22.5	24.0	26.0	26.5	28.5	29.0	30.0	31.5	32.5
125	19.5	22.0	24.0	26.0	27.5	29.0	30.5	31.5	32.5	34.0	34.5
150	20.0	23.5	26.0	27.5	29.0	30.5	32.5	33.0	34.5	35.5	36.5
175	22.0	24.0	26.5	29.0	30.5	32.5	34.0	35.5	36.5	38.0	39.0
200	22.5	26.0	28.5	30.5	32.5	34.0	35.5	36.5	38.0	39.5	40.5
225	23.5	26.5	29.0	31.5	33.0	35.5	37.0	38.0	39.5	41.0	42.0
250	24.0	27.5	30.0	32.5	34.5	36.5	38.0	39.5	41.0	42.0	43.5
275	25.0	28.5	31.5	34.0	35.5	38.0	39.5	41.0	42.0	43.5	44.5
300	26.0	29.0	32.5	34.5	36.5	39.0	40.5	42.0	43.5	44.5	46.0
325	26.5	30.0	33.0	35.5	38.0	39.5	41.0	43.0	44.5	46.0	47.5
350	27.5	30.5	34.0	36.5	39.0	40.5	43.0	44.5	46.0	47.0	48.5
375	27.5	31.5	34.5	37.0	39.5	41.0	43.5	45.0	47.0	48.5	49.5
400	28.5	32.5	35.5	38.0	40.5	43.0	44.5	46.0	47.5	49.5	51.0
425	29.0	33.0	36.5	39.0	41.0	43.5	45.0	47.0	48.5	50.0	51.5
450	29.0	33.0	36.5	39.5	42.0	44.5	46.0	47.5	49.5	51.0	52.5
475	30.0	34.0	37.0	40.5	43.0	45.0	47.0	48.5	50.0	51.5	53.5
500	30.0	34.5	38.0	41.0	43.5	46.0	47.5	49.5	51.0	52.5	54.0
525	30.5	35.5	39.0	42.0	44.5	46.0	48.5	50.0	51.5	53.5	55.0
550	31.5	35.5	39.5	42.0	44.5	47.0	49.5	51.0	52.5	54.0	55.5
575	31.5	36.5	39.5	43.0	45.0	47.5	50.0	51.5	53.5	55.0	56.5
600	32.5	37.0	40.5	43.5	46.0	48.5	51.0	52.5	54.0	55.5	58.0

TABLE F — 6000 POUND FIBER STRESS FOR CLASS JC LINES

MOMENT AT CRITICAL SECTION PER FOOT OF SPAN LENGTH (LBS FT)	SPAN LENGTH (FEET)										
	100	150	200	250	300	350	400	450	500	550	600
	MINIMUM CIRCUMFERENCE AT CRITICAL SECTION (INCHES)										
10	11.5	12.5	13.0	14.0	15.0	15.0	16.0	16.0	17.0	17.0	18.0
20	13.0	14.0	16.0	17.0	18.0	19.0	20.0	21.0	21.0	21.5	22.5
30	14.0	16.0	18.0	19.0	20.0	21.0	22.5	22.5	23.5	24.5	25.5
40	16.0	18.0	20.0	21.0	22.5	23.5	24.5	25.5	26.5	27.5	28.5
50	17.0	19.0	21.0	22.5	23.5	25.5	26.5	27.5	28.5	29.5	30.0
60	18.0	20.0	22.5	23.5	25.5	26.5	27.5	29.5	30.0	31.0	32.0
70	19.0	21.0	23.5	25.5	26.5	28.5	29.5	30.0	31.0	32.0	33.0
80	20.0	21.5	24.5	26.5	28.5	29.5	30.0	32.0	33.0	34.0	35.0
90	21.0	22.5	25.5	27.5	29.5	30.0	32.0	33.0	34.0	35.0	37.0
100	21.5	23.5	26.5	28.5	30.0	31.0	33.0	34.0	35.0	37.0	38.0
125	22.5	25.5	28.5	30.0	32.0	34.0	36.0	37.0	38.0	39.5	40.5
150	23.5	27.5	30.0	32.0	34.0	36.0	38.0	38.5	40.5	41.5	42.5
175	25.5	28.5	31.0	34.0	36.0	38.0	39.5	41.5	42.5	44.5	45.5
200	26.5	30.0	33.0	36.0	38.0	39.5	41.5	42.5	44.5	46.5	47.0
225	27.5	31.0	34.0	37.0	38.5	41.5	43.5	44.5	46.5	48.0	49.0
250	28.5	32.0	35.0	38.0	40.5	42.5	44.5	46.5	48.0	49.0	51.0
275	29.5	33.0	37.0	39.5	41.5	44.5	46.5	48.0	49.0	51.0	52.0
300	30.0	34.0	38.0	40.5	42.5	45.5	47.0	49.0	51.0	52.0	54.0
325	31.0	35.0	38.5	41.5	44.5	46.5	48.0	50.0	52.0	54.0	55.5
350	32.0	36.0	39.5	42.5	45.5	47.0	50.0	52.0	54.0	54.5	56.5
375	32.0	37.0	40.5	43.5	46.5	48.0	51.0	53.0	54.5	56.5	57.5
400	33.0	38.0	41.5	44.5	47.0	50.0	52.0	54.0	55.5	57.5	59.5
425	34.0	38.5	42.5	45.5	48.0	51.0	53.0	54.5	56.5	58.5	60.5
450	34.0	38.5	42.5	46.5	49.0	52.0	54.0	55.5	57.5	59.5	61.5
475	35.0	39.5	43.5	47.0	50.0	53.0	54.5	56.5	58.5	60.5	62.5
500	35.0	40.5	44.5	48.0	51.0	54.0	55.5	57.5	59.5	61.5	63.0
525	36.0	41.5	45.5	49.0	52.0	54.0	56.5	58.5	60.5	62.5	64.0
550	37.0	41.5	46.5	49.0	52.0	54.5	57.5	59.5	61.5	63.0	65.0
575	37.0	42.5	46.5	50.0	53.0	55.5	58.5	60.5	62.5	64.0	66.0
600	38.0	43.5	47.0	51.0	54.0	56.5	59.5	61.5	63.0	65.0	68.0