

**POLE LINES**  
**MINIMUM CIRCUMFERENCES AT CRITICAL SECTION**  
**8400 POUND FIBER STRENGTH**  
**ALL STORM LOADING AREAS**  
**ALL POLE LENGTHS**

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. MINIMUM CIRCUMFERENCES . . . . .	1
3. TABLES OF MINIMUM CIRCUMFERENCES AT CRITICAL SECTION . . . . .	2
Table A: Class AA and Class JB Lines . . . . .	2
Table B: Class A Lines . . . . .	3
Table C: Class B Lines . . . . .	4
Table D: Class C Lines . . . . .	5
Table E: Class R Lines . . . . .	6
Table F: Class JC Lines . . . . .	7

**1. GENERAL**

**1.01** This section describes the use of the tables of minimum circumferences at the critical section for the several classes of lines for poles having an assigned fiber stress of 8400 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 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 of 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 — 8400 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	12.5	14.0	15.0	16.0	17.0	17.0	18.0	18.0	19.0	19.0	20.0
20	15.0	16.0	18.0	19.0	20.0	21.0	22.0	23.5	23.5	24.5	25.5
30	16.0	18.0	20.0	21.0	22.0	23.5	25.5	25.5	26.5	27.5	28.5
40	18.0	20.0	22.0	23.5	25.5	26.5	27.5	28.5	29.5	30.5	32.0
50	19.0	21.0	23.5	25.5	26.5	28.5	29.5	30.5	32.0	33.0	34.0
60	20.0	22.0	25.5	26.5	28.5	29.5	30.5	33.0	34.0	35.0	36.0
70	21.0	23.5	26.5	28.5	29.5	32.0	33.0	34.0	35.0	36.0	37.0
80	22.0	24.5	27.5	29.5	32.0	33.0	34.0	36.0	37.0	38.0	39.0
90	23.5	25.5	28.5	30.5	33.0	34.0	36.0	37.0	38.0	39.0	41.5
100	24.5	26.5	29.5	32.0	34.0	35.0	37.0	38.0	39.0	41.5	42.5
125	25.5	28.5	32.0	34.0	36.0	38.0	40.0	41.5	42.5	44.5	45.5
150	26.5	30.5	34.0	36.0	38.0	40.0	42.5	43.5	45.5	46.5	47.5
175	28.5	32.0	35.0	38.0	40.0	42.5	44.5	46.5	47.5	49.5	51.0
200	29.5	34.0	37.0	40.0	42.5	44.5	46.5	47.5	49.5	52.0	53.0
225	30.5	35.0	38.0	41.5	43.5	46.5	48.5	49.5	52.0	54.0	55.0
250	32.0	36.0	39.0	42.5	45.5	47.5	49.5	52.0	54.0	55.0	57.0
275	33.0	37.0	41.5	44.5	46.5	49.5	52.0	54.0	55.0	57.0	58.0
300	34.0	38.0	42.5	45.5	47.5	51.0	53.0	55.0	57.0	58.0	60.5
325	35.0	39.0	43.5	46.5	49.5	52.0	54.0	56.0	58.0	60.5	62.5
350	36.0	40.0	44.5	47.5	51.0	53.0	56.0	58.0	60.5	61.5	
375	36.0	41.5	45.5	48.5	52.0	54.0	57.0	59.5	61.5		
400	37.0	42.5	46.5	49.5	53.0	56.0	58.0	60.5	62.5		
425	38.0	43.5	47.5	51.0	54.0	57.0	59.5	61.5			
450	38.0	43.5	47.5	52.0	55.0	58.0	60.5	62.5			
475	39.0	44.5	48.5	53.0	56.0	59.5	61.5				
500	39.0	45.5	49.5	54.0	57.0	60.5	62.5				
525	40.0	46.5	51.0	55.0	58.0	60.5					
550	41.5	46.5	52.0	55.0	58.0	61.5					
575	41.5	47.5	52.0	56.0	59.5	62.5					
600	42.5	48.5	53.0	57.0	60.5						

TABLE B — 8400 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	11.0	12.0	12.5	13.5	14.5	14.5	15.5	15.5	16.5	16.5	17.5
20	12.5	13.5	15.5	16.5	17.5	18.0	19.0	20.0	20.0	21.0	22.0
30	13.5	15.5	17.5	18.0	19.0	20.0	22.0	22.0	22.5	23.5	24.5
40	15.5	17.5	19.0	20.0	22.0	22.5	23.5	24.5	25.5	26.5	27.5
50	16.5	18.0	20.0	22.0	22.5	24.5	25.5	26.5	27.5	28.0	29.0
60	17.5	19.0	22.0	22.5	24.5	25.5	26.5	28.0	29.0	30.0	31.0
70	18.0	20.0	22.5	24.5	25.5	27.5	28.0	29.0	30.0	31.0	32.0
80	19.0	21.0	23.5	25.5	27.5	28.0	29.0	31.0	32.0	32.5	33.5
90	20.0	22.0	24.5	26.5	28.0	29.0	31.0	32.0	32.5	33.5	35.5
100	21.0	22.5	25.5	27.5	29.0	30.0	32.0	32.5	33.5	35.5	36.5
125	22.0	24.5	27.5	29.0	31.0	32.5	34.5	35.5	36.5	38.0	39.0
150	22.5	26.5	29.0	31.0	32.5	34.5	36.5	37.5	39.0	40.0	41.0
175	24.5	27.5	30.0	32.5	34.5	36.5	38.0	40.0	41.0	42.5	43.5
200	25.5	29.0	32.0	34.5	36.5	38.0	40.0	41.0	42.5	44.5	45.5
225	26.5	30.0	32.5	35.5	37.5	40.0	42.0	42.5	44.5	46.5	47.5
250	27.5	31.0	33.5	36.5	39.0	41.0	42.5	44.5	46.5	47.5	49.0
275	28.0	32.0	35.5	38.0	40.0	42.5	44.5	46.5	47.5	49.0	50.0
300	29.0	32.5	36.5	39.0	41.0	43.5	45.5	47.5	49.0	50.0	52.0
325	30.0	33.5	37.5	40.0	42.5	44.5	46.5	48.0	50.0	52.0	53.5
350	31.0	34.5	38.0	41.0	43.5	45.5	48.0	50.0	52.0	52.5	54.5
375	31.0	35.5	39.0	42.0	44.5	46.5	49.0	51.0	52.5	54.5	55.5
400	32.0	36.5	40.0	42.5	45.5	48.0	50.0	52.0	53.5	55.5	57.5
425	32.5	37.5	41.0	43.5	46.5	49.0	51.0	52.5	54.5	56.5	58.0
450	32.5	37.5	41.0	44.5	47.5	50.0	52.0	53.5	55.5	57.5	59.0
475	33.5	38.0	42.0	45.5	48.0	51.0	52.5	54.5	56.5	58.0	60.0
500	33.5	39.0	42.5	46.5	49.0	52.0	53.5	55.5	57.5	59.0	61.0
525	34.5	40.0	43.5	47.5	50.0	52.0	54.5	56.5	58.0	60.0	62.0
550	35.5	40.0	44.5	47.5	50.0	52.5	55.5	57.5	59.0	61.0	62.5
575	35.5	41.0	44.5	48.0	51.0	53.5	56.5	58.0	60.0	62.0	
600	36.5	42.0	45.5	49.0	52.0	54.5	57.5	59.0	61.0	62.5	

TABLE C — 8400 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	9.5	10.5	11.0	12.0	12.5	12.5	13.5	13.5	14.5	14.5	15.0
20	11.0	12.0	13.5	14.5	15.0	16.0	16.5	17.5	17.5	18.5	19.0
30	12.0	13.5	15.0	16.0	16.5	17.5	19.0	19.0	20.0	20.5	21.5
40	13.5	15.0	16.5	17.5	19.0	20.0	20.5	21.5	22.0	23.0	24.0
50	14.5	16.0	17.5	19.0	20.0	21.5	22.0	23.0	24.0	24.5	25.5
60	15.0	16.5	19.0	20.0	21.5	22.0	23.0	24.5	25.5	26.0	27.0
70	16.0	17.5	20.0	21.5	22.0	24.0	24.5	25.5	26.0	27.0	28.0
80	16.5	18.5	20.5	22.0	24.0	24.5	25.5	27.0	28.0	28.5	29.5
90	17.5	19.0	21.5	23.0	24.5	25.5	27.0	28.0	28.5	29.5	31.0
100	18.5	20.0	22.0	24.0	25.5	26.0	28.0	28.5	29.5	31.0	32.0
125	19.0	21.5	24.0	25.5	27.0	28.5	30.0	31.0	32.0	33.5	34.0
150	20.0	23.0	25.5	27.0	28.5	30.0	32.0	32.5	34.0	35.0	35.5
175	21.5	24.0	26.0	28.5	30.0	32.0	33.5	35.0	35.5	37.5	38.0
200	22.0	25.5	28.0	30.0	32.0	33.5	35.0	35.5	37.5	39.0	39.5
225	23.0	26.0	28.5	31.0	32.5	35.0	36.5	37.5	39.0	40.5	41.5
250	24.0	27.0	29.5	32.0	34.0	35.5	37.5	39.0	40.5	41.5	43.0
275	24.5	28.0	31.0	33.5	35.0	37.5	39.0	40.5	41.5	43.0	43.5
300	25.5	28.5	32.0	34.0	35.5	38.0	39.5	41.5	43.0	43.5	45.5
325	26.0	29.5	32.5	35.0	37.5	39.0	40.5	42.0	43.5	45.5	47.0
350	27.0	30.0	33.5	35.5	38.0	39.5	42.0	43.5	45.5	46.0	47.5
375	27.0	31.0	34.0	36.5	39.0	40.5	43.0	44.5	46.0	47.5	48.5
400	28.0	32.0	35.0	37.5	39.5	42.0	43.5	45.5	47.0	48.5	50.0
425	28.5	32.5	35.5	38.0	40.5	43.0	44.5	46.0	47.5	49.0	51.0
450	28.5	32.5	35.5	39.0	41.5	43.5	45.5	47.0	48.5	50.0	51.5
475	29.5	33.5	36.5	39.5	42.0	44.5	46.0	47.5	49.0	51.0	52.5
500	29.5	34.0	37.5	40.5	43.0	45.5	47.0	48.5	50.0	51.5	53.0
525	30.0	35.0	38.0	41.5	43.5	45.5	47.5	49.0	51.0	52.5	54.0
550	31.0	35.0	39.0	41.5	43.5	46.0	48.5	50.0	51.5	53.0	55.0
575	31.0	35.5	39.0	42.0	44.5	47.0	49.0	51.0	52.5	54.0	55.5
600	32.0	36.5	39.5	43.0	45.5	47.5	50.0	51.5	53.0	55.0	57.0

TABLE D — 8400 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	9.0	10.0	10.5	11.5	12.0	12.0	13.0	13.0	13.5	13.5	14.5
20	10.5	11.5	13.0	13.5	14.5	15.0	16.0	16.5	16.5	17.5	18.0
30	11.5	13.0	14.5	15.0	16.0	16.5	18.0	18.0	19.0	19.5	20.5
40	13.0	14.5	16.0	16.5	18.0	19.0	19.5	20.5	21.0	22.0	22.5
50	13.5	15.0	16.5	18.0	19.0	20.5	21.0	22.0	22.5	23.5	24.0
60	14.5	16.0	18.0	19.0	20.5	21.0	22.0	23.5	24.0	25.0	25.5
70	15.0	16.5	19.0	20.5	21.0	22.5	23.5	24.0	25.0	25.5	26.5
80	16.0	17.5	19.5	21.0	22.5	23.5	24.0	25.5	26.5	27.0	28.0
90	16.5	18.0	20.5	22.0	23.5	24.0	25.5	26.5	27.0	28.0	29.5
100	17.5	19.0	21.0	22.5	24.0	25.0	26.5	27.0	28.0	29.5	30.0
125	18.0	20.5	22.5	24.0	25.5	27.0	28.5	29.5	30.0	31.5	32.5
150	19.0	22.0	24.0	25.5	27.0	28.5	30.0	31.0	32.5	33.0	34.0
175	20.5	22.5	25.0	27.0	28.5	30.0	31.5	33.0	34.0	35.5	36.0
200	21.0	24.0	26.5	28.5	30.0	31.5	33.0	34.0	35.5	37.0	37.5
225	22.0	25.0	27.0	29.5	31.0	33.0	34.5	35.5	37.0	38.5	39.0
250	22.5	25.5	28.0	30.0	32.5	34.0	35.5	37.0	38.5	39.0	40.5
275	23.5	26.5	29.5	31.5	33.0	35.5	37.0	38.5	39.0	40.5	41.5
300	24.0	27.0	30.0	32.5	34.0	36.0	37.5	39.0	40.5	41.5	43.0
325	25.0	28.0	31.0	33.0	35.5	37.0	38.5	40.0	41.5	43.0	44.5
350	25.5	28.5	31.5	34.0	36.0	37.5	40.0	41.5	43.0	44.0	45.5
375	25.5	29.5	32.5	34.5	37.0	38.5	40.5	42.5	44.0	45.5	46.0
400	26.5	30.0	33.0	35.5	37.5	40.0	41.5	43.0	44.5	46.0	47.5
425	27.0	31.0	34.0	36.0	38.5	40.5	42.5	44.0	45.5	47.0	48.5
450	27.0	31.0	34.0	37.0	39.0	41.5	43.0	44.5	46.0	47.5	49.0
475	28.0	31.5	34.5	37.5	40.0	42.5	44.0	45.5	47.0	48.5	50.0
500	28.0	32.5	35.5	38.5	40.5	43.0	44.5	46.0	47.5	49.0	50.5
525	28.5	33.0	36.0	39.0	41.5	43.0	45.5	47.0	48.5	50.0	51.5
550	29.5	33.0	37.0	39.0	41.5	44.0	46.0	47.5	49.0	50.5	52.0
575	29.5	34.0	37.0	40.0	42.5	44.5	47.0	48.5	50.0	51.5	53.0
600	30.0	34.5	37.5	40.5	43.0	45.5	47.5	49.0	50.5	52.0	54.5

TABLE E — 8400 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	8.5	9.5	10.0	11.0	11.5	11.5	12.5	12.5	13.0	13.0	13.5
20	10.0	11.0	12.5	13.0	13.5	14.5	15.0	16.0	16.0	16.5	17.5
30	11.0	12.5	13.5	14.5	15.0	16.0	17.5	17.5	18.0	19.0	19.5
40	12.5	13.5	15.0	16.0	17.5	18.0	19.0	19.5	20.0	21.0	21.5
50	13.0	14.5	16.0	17.5	18.0	19.5	20.0	21.0	21.5	22.5	23.0
60	13.5	15.0	17.5	18.0	19.5	20.0	21.0	22.5	23.0	24.0	24.5
70	14.5	16.0	18.0	19.5	20.0	21.5	22.5	23.0	24.0	24.5	25.5
80	15.0	16.5	19.0	20.0	21.5	22.5	23.0	24.5	25.5	26.0	26.5
90	16.0	17.5	19.5	21.0	22.5	23.0	24.5	25.5	26.0	26.5	28.0
100	16.5	18.0	20.0	21.5	23.0	24.0	25.5	26.0	26.5	28.0	29.0
125	17.5	19.5	21.5	23.0	24.5	26.0	27.0	28.0	29.0	30.5	31.0
150	18.0	21.0	23.0	24.5	26.0	27.5	29.0	29.5	31.0	32.0	32.5
175	19.5	21.5	24.0	26.0	27.5	29.0	30.5	32.0	32.5	34.0	34.5
200	20.0	23.0	25.5	27.5	29.0	30.5	32.0	32.5	34.0	35.5	36.0
225	21.0	24.0	26.0	28.0	29.5	32.0	33.0	34.0	35.5	37.0	37.5
250	21.5	24.5	26.5	29.0	31.0	32.5	34.0	35.5	37.0	37.5	39.0
275	22.5	25.5	28.0	30.5	32.0	34.0	35.5	37.0	37.5	39.0	39.5
300	23.0	26.0	29.0	31.0	32.5	34.5	36.0	37.5	39.0	39.5	41.0
325	24.0	26.5	29.5	32.0	34.0	35.5	37.0	38.5	39.5	41.0	42.5
350	24.5	27.5	30.5	32.5	34.5	36.0	38.5	39.5	41.0	42.0	43.5
375	24.5	28.0	31.0	33.0	35.5	37.0	39.0	40.5	42.0	43.5	44.0
400	25.5	29.0	32.0	34.0	36.0	38.5	39.5	41.0	42.5	44.0	45.5
425	26.0	29.5	32.5	34.5	37.0	39.0	40.5	42.0	43.5	44.5	46.0
450	26.0	29.5	32.5	35.5	37.5	39.5	41.0	42.5	44.0	45.5	47.0
475	26.5	30.5	33.0	36.0	38.5	40.5	42.0	43.5	44.5	46.0	47.5
500	26.5	31.0	34.0	37.0	39.0	41.0	42.5	44.0	45.5	47.0	48.5
525	27.5	32.0	34.5	37.5	39.5	41.0	43.5	44.5	46.0	47.5	49.0
550	28.0	32.0	35.5	37.5	39.5	42.0	44.0	45.5	47.0	48.5	50.0
575	28.0	32.5	35.5	38.5	40.5	42.5	44.5	46.0	47.5	49.0	50.5
600	29.0	33.0	36.0	39.0	41.0	43.5	45.5	47.0	48.5	50.0	52.0

TABLE F — 8400 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	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	39.5	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