POLE LINES

MINIMUM CIRCUMFERENCES AT CRITICAL SECTION

6600 POUND FIBER STRENGTH

ALL STORM LOADING AREAS

ALL POLE LENGTHS

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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 6600 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 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 — 6600 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	15.0	16.0	17.0	18.5	18.5	19.5	19.5	20.5	20.5	22.0
20	16.0	17.0	19.5	20.5	22.0	23.0	24.0	25.0	25.0	26.5	27.5
30	17.0	19.5	22.0	23.0	24.0	25.0	27.5	27.5	28.5	30.0	31.0
40	19.5	22.0	24.0	25.0	27.5	28.5	30.0	31.0	32.0	33.5	34.5
50	20.5	23.0	25.0	27.5	28.5	31.0	32.0	33.5	34.5	35.5	36.5
60	22.0	24.0	27.5	28.5	31.0	32.0	33.5	35.5	36.5	38.0	39.0
70	23.0	25.0	28.5	31.0	32.0	34.5	35.5	36.5	38.0	39.0	40.0
80	24.0	26.5	30.0	32.0	34.5	35.5	36.5	39.0	40.0	41.5	42.5
90	25.0	27.5	31.0	33.5	35.5	36.5	39.0	40.0	41.5	42.5	44.5
100	26.5	28.5	32.0	34.5	36.5	38.0	40.0	41.5	42.5	44.5	46.0
125	27.5	31.0	34.5	36.5	39.0	41.5	43.5	44.5	46.0	48.0	49.5
150	28.5	33.5	36.5	39.0	41.5	43.5	46.0	47.0	49.5	50.5	51.5
175	31.0	34.5	38.0	41.5	43.5	46.0	48.0	50.5	51.5		
200	32.0	36.5	40.0	43.5	46.0	48.0	50.5	51.5			
225	33.5	38.0	41.5	44.5	47.0	50.5					
250	34.5	39.0	42.5	46.0	49.5	51.5					
275	35.5	40.0	44.5	48.0	50.5						
300	36.5	41.5	46.0	49.5	51.5						
325	38.0	42.5	47.0	50.5							
350	39.0	43.5	48.0	51.5							
375	39.0	44.5	49.5								
400	40.0	46.0	50.5								
425	41.5	47.0	51.5								
450	41.5	47.0	51.5								
475	42.5	48.0									
500	42.5	49.5									
525	43.5	50.5									
550	44.5	50.5									
575	44.5	51.5									
600	46.0										

TABLE B — 6600 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	15.0	16.0	16.0	16.5	16.5	17.5	17.5	18.5
20	14.0	15.0	16.5	17.5	18.5	19.5	20.5	21.5	21.5	22.5	23.5
30	15.0	16.5	18.5	19.5	20.5	21.5	23.5	23.5	24.5	25.5	26.5
40	16.5	18.5	20.5	21.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5
50	17.5	19.5	21.5	23.5	24.5	26.5	27.5	28.5	29.5	30.5	31.5
60	18.5	20.5	23.5	24.5	26.5	27.5	28.5	30.5	31.5	32.5	33.5
70	19.5	21.5	24.5	26.5	27.5	29.5	30.5	31.5	32.5	33.5	34.5
80	20.5	22.5	25.5	27.5	29.5	30.5	31.5	33.5	34.5	35.5	36.5
90	21.5	23.5	26.5	28.5	30.5	31.5	33.5	34.5	35.5	36.5	38.5
100	22.5	24.5	27.5	29.5	31.5	32.5	34.5	35.5	36.5	38.5	39.5
125	23.5	26.5	29.5	31.5	33.5	35.5	37.5	38.5	39.5	41.5	42.5
150	24.5	28.5	31.5	33.5	35.5	37.5	39.5	40.5	42.5	43.5	44.5
175	26.5	29.5	32.5	35.5	37.5	39.5	41.5	43.5	44.5	46.5	47.5
200	27.5	31.5	34.5	37.5	39.5	41.5	43.5	44.5	46.5	48.5	49.5
225	28.5	32.5	35.5	38.5	40.5	43.5	45.5	46.5	48.5	50.0	51.0
250	29.5	33.5	36.5	39.5	42.5	44.5	46.5	48.5	50.0	51.0	
275	30.5	34.5	38.5	41.5	43.5	46.5	48.5	50.0	51.0		
300	31.5	35.5	39.5	42.5	44.5	47.5	49.5	51.0			
325	32.5	36.5	40.5	43.5	46.5	48.5	50.0				
350	33.5	37.5	41.5	44.5	47.5	49.5					
375	33.5	38.5	42.5	45.5	48.5	50.0					
400	34.5	39.5	43.5	46.5	49.5						
425	35.5	40.5	44.5	47.5	50.0						
450	35.5	40.5	44.5	48.5	51.0						
475	36.5	41.5	45.5	49.5							
500	36.5	42.5	46.5	50.0							
525	37.5	43.5	47.5	51.0							
550	38.5	43.5	48.5	51.0							
575	38.5	44.5	48.5								
600	39.5	45.5	49.5								

TABLE C — 6600 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	11.0	12.0	13.0	14.0	14.0	14.5	14.5	15.5	15.5	16.5
20	12.0	13.0	14.5	15.5	16.5	17.0	18.0	19.0	19.0	20.0	20.5
30	13.0	14.5	16.5	17.0	18.0	19.0	20.5	20.5	21.5	22.5	23.0
40	14.5	16.5	18.0	19.0	20.5	21.5	22.5	23.0	24.0	25.0	26.0
50	15.5	17.0	19.0	20.5	21.5	23.0	24.0	25.0	26.0	26.5	27.5
60	16.5	18.0	20.5	21.5	23.0	24.0	25.0	26.5	28.0	28.5	29.5
70	17.0	19.0	21.5	23.0	24.0	26.0	26.5	27.5	28.5	29.5	30.0
80	18.0	20.0	22.5	24.0	26.0	26.5	27.5	29.5	30.0	31.0	32.0
90	19.0	20.5	23.0	25.0	26.5	27.5	29.5	30.0	31.0	32.0	33.5
100	20.0	21.5	24.0	26.0	27.5	28.5	30.0	31.0	32.0	33.5	34.5
125	20.5	23.0	26.0	27.5	29.5	31.0	32.5	33.5	34.5	36.0	37.0
150	21.5	25.0	27.5	29.5	31.0	32.5	34.5	35.5	37.0	38.0	38.5
175	23.0	26.0	28.5	31.0	32.5	34.5	36.0	38.0	38.5	40.5	41.5
200	24.0	27.5	30.0	32.5	34.5	36.0	38.0	38.5	40.5	42.0	43.0
225	25.0	28.5	31.0	33.5	35.5	38.0	39.5	40.5	42.0	44.0	44.5
250	26.0	29.5	32.0	34.5	37.0	38.5	40.5	42.0	44.0	44.5	46.5
275	26.5	30.0	33.5	36.0	38.0	40.5	42.0	44.0	44.5	46.5	47.5
300	27.5	31.0	34.5	37.0	39.0	41.5	43.0	44.5	46.5	47.5	49.0
325	28.5	32.0	35.5	38.0	40.5	42.0	44.0	45.5	47.5	49.0	51.0
350	29.5	32.5	36.0	38.5	41.5	43.0	45.5	47.5	49.0	50.0	51.5
375	29.5	33.5	37.0	39.5	42.0	44.0	46.5	48.0	50.0	51.5	
400	30.0	34.5	38.0	40.5	43.0	45.5	47.5	49.0	51.0		
425	31.0	35.5	38.5	41.5	44.0	46.5	48.0	50.0	51.5		
450	31.0	35.5	38.5	42.0	44.5	47.5	49.0	51.0			
475	32.0	36.0	39.5	43.0	45.5	48.0	50.0	51.5			
500	32.0	37.0	40.5	44.0	46.5	49.0	51.0				
525	32.5	38.0	41.5	44.5	47.5	49.0	51.5				
550	33.5	38.0	42.0	44.5	47.5	50.0					
575	33.5	38.5	42.0	45.5	48.0	51.0					
600	34.5	39.5	43.0	46.5	49.0	51.5					

TABLE D — 6600 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	10.5	11.5	12.5	13.0	13.0	14.0	14.0	14.5	14.5	15.5
20	11.5	12.5	14.0	14.5	15.5	16.5	17.0	18.0	18.0	19.0	19.5
30	12.5	14.0	15.5	16.5	17.0	18.0	19.5	19.5	20.5	21.5	22.0
40	14.0	15.5	17.0	18.0	19.5	20.5	21.5	22.0	23.0	23.5	24.5
50	14.5	16.5	18.0	19.5	20.5	22.0	23.0	23.5	24.5	25.5	26.0
60	15.5	17.0	19.5	20.5	22.0	23.0	23.5	25.5	26.0	27.0	28.0
70	16.5	18.0	20.5	22.0	23.0	24.5	25.5	26.0	27.0	28.0	28.5
80	17.0	19.0	21.5	23.0	24.5	25.5	26.0	28.0	28.5	29.5	30.5
90	18.0	19.5	22.0	23.5	25.5	26.0	28.0	28.5	29.0	30.5	32.0
100	19.0	20.5	23.0	24.5	26.0	27.0	28.5	29.5	30.5	32.0	32.5
125	19.5	22.0	24.5	26.0	28.0	29.5	31.0	32.0	32.5	34.5	35.0
150	20.5	23.5	26.0	28.0	29.5	31.0	32.5	33.5	35.0	36.0	37.0
175	22.0	24.5	27.0	29.5	31.0	32.5	34.5	36.0	37.0	38.5	39.0
200	23.0	26.0	28.5	31.0	32.5	34.5	36.0	37.0	38.5	40.0	41.0
225	23.5	27.0	29.5	32.0	33.5	36.0	37.5	38.5	40.0	41.5	42.5
250	24.5	28.0	30.5	32.5	35.0	37.0	38.5	40.0	41.5	42.5	44.0
275	25.5	28.5	32.0	34.5	36.0	38.5	40.0	41.5	42.5	44.0	45.0
300	26.0	29.5	32.5	35.0	37.0	39.0	41.0	42.5	44.0	45.0	46.5
325	27.0	30.5	33.5	36.0	38.5	40.0	41.5	43.5	45.0	46.5	48.0
350	28.0	31.0	34.5	37.0	39.0	41.0	43.5	45.0	46.5	47.5	49.0
375	28.0	32.0	35.0	37.5	40.0	41.5	44.0	46.0	47.5	49.0	50.0
400	28.5	32.5	36.0	38.5	41.0	43.5	45.0	46.5	48.0	50.0	51.5
425	29.5	33.5	37.0	39.0	42.0	44.0	46.0	47.5	49.0	50.5	
450	29.5	33.5	37.0	40.0	42.5	45.0	46.5	48.0	50.0	51.5	
475	30.5	34.5	37.5	41.0	43.5	46.0	47.5	49.0	50.5		
500	30.5	35.0	38.5	41.5	44.0	46.5	48.0	50.0	51.5		
525	31.0	36.0	39.0	42.5	45.0	46.5	49.0	50.5			
550	32.0	36.0	40.0	42.5	45.0	47.5	50.0	51.5			
575	32.0	37.0	40.0	43.5	46.0	48.0	51.0				
600	32.5	37.5	41.0	44.0	46.5	49.0	51.5				

TABLE E — 6600 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	10.0	11.0	11.5	12.5	12.5	13.5	13.5	14.0	14.0	15.0
20	11.0	11.5	13.5	14.0	15.0	15.5	16.5	17.0	17.0	18.0	19.0
30	11.5	13.5	15.0	15.5	16.5	17.0	19.0	19.0	19.5	20.5	21.0
40	13.5	15.0	16.5	17.0	19.0	19.5	20.5	21.0	22.0	22.5	23.5
50	14.0	15.5	17.0	19.0	19.5	21.0	22.0	22.5	23.5	24.0	25.0
60	15.0	16.5	19.0	19.5	21.0	22.0	22.5	24.0	25.0	26.0	26.5
70	15.5	17.0	19.5	21.0	22.0	23.5	24.0	25.0	26.0	26.5	27.5
80	16.5	18.0	20.5	22.0	23.5	24.0	25.0	26.5	27.5	28.0	29.0
90	17.0	19.0	21.0	22.5	24.0	25.0	26.5	27.5	28.0	29.0	30.5
100	18.0	19.5	22.0	23.5	25.0	26.0	27.5	28.0	29.0	30.5	31.5
125	19.0	21.0	23.5	25.0	26.5	28.0	29.5	30.5	31.5	33.0	33.5
150	19.5	22.5	25.0	26.5	28.0	29.5	31.5	32.0	33.5	34.5	35.0
175	21.0	23.5	26.0	28.0	29.5	31.5	33.0	34.5	35.0	36.5	37.5
200	22.0	25.0	27.5	29.5	31.5	33.0	34.5	35.0	36.5	38.5	39.0
225	22.5	26.0	28.0	30.5	32.0	34.5	36.0	36.5	38.5	40.0	40.5
250	23.5	26.5	29.0	31.5	33.5	35.0	36.5	38.5	40.0	40.5	42.0
275	24.0	27.5	30.5	33.0	34.5	36.5	38.5	40.0	40.5	42.0	43.0
300	25.0	28.0	31.5	33.5	35.0	37.5	39.0	40.5	42.0	43.0	44.5
325	26.0	29.0	32.0	34.5	36.5	38.5	40.0	41.5	43.0	44.5	46.0
350	26.5	29.5	33.0	35.0	37.5	39.0	41.5	43.0	44.5	45.5	47.0
375	26.5	30.5	33.5	36.0	38.5	40.0	42.0	44.0	45.5	47.0	47.5
400	27.5	31.5	34.5	36.5	39.0	41.5	43.0	44.5	46.0	47.5	49.0
425	28.0	32.0	35.0	37.5	40.0	42.0	44.0	45.5	47.0	48.5	50.0
450	28.0	32.0	35.0	38.5	40.5	43.0	44.5	46.0	47.5	49.0	51.0
475	29.0	33.0	36.0	39.0	41.5	44.0	45.5	47.0	48.5	50.0	51.5
500	29.0	33.5	36.5	40.0	42.0	44.5	46.0	47.5	49.0	51.0	
525	29.5	34.5	37.5	40.5	43.0	44.5	47.0	48.5	50.0	51.5	
550	30.5	34.5	38.5	40.5	43.0	45.5	47.5	49.0	51.0		
575	30.5	35.0	38.5	41.5	44.0	46.0	48.5	50.0	51.5		
600	31.5	36.0	39.0	42.0	44.5	47.0	49.0	51.0			

TABLE F — 6600 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	11.0	12.0	13.0	13.5	14.5	14.5	15.5	15.5	16.5	16.5	17.5
20	13.0	13.5	15.5	16.5	17.5	18.5	19.0	20.0	20.0	21.0	22.0
30	13.5	15.5	17.5	18.5	19.0	20.0	22.0	22.0	23.0	24.0	24.5
40	15.5	17.5	19.0	20.0	22.0	23.0	24.0	24.5	25.5	26.5	27.5
50	16.5	18.5	20.0	22.0	23.0	24.5	25.5	26.5	27.5	28.5	29.5
60	17.5	19.0	22.0	23.0	24.5	25.5	26.5	28.5	29.5	30.0	31.0
70	18.5	20.0	23.0	24.5	25.5	27.5	28.5	29.5	30.0	31.0	32.0
80	19.0	21.0	24.0	25.5	27.5	28.5	29.5	31.0	32.0	33.0	34.0
90	20.0	22.0	25.0	26.5	28.5	29.5	31.0	32.0	33.0	34.0	35.5
100	21.0	23.0	25.5	27.5	29.5	30.0	32.0	33.0	34.0	35.5	36.5
125	22.0	25.0	27.5	29.5	31.0	33.0	34.5	35.5	36.5	38.5	39.5
150	23.0	26.5	29.5	31.0	33.0	35.0	36.5	37.5	39.5	40.0	41.0
175	24.5	27.5	30.0	33.0	34.5	36.5	38.5	40.0	41.0	43.0	44.0
200	25.5	29.5	32.0	34.5	36.5	38.5	40.0	41.0	43.0	45.0	45.5
225	26.5	30.0	33.0	35.5	37.5	40.0	42.0	43.0	45.0	46.5	47.5
250	27.5	31.0	34.0	36.5	39.5	41.0	43.0	45.0	46.5	47.5	49.5
275	28.5	32.0	35.5	38.5	40.0	43.0	45.0	46.5	47.5	49.5	50.5
300	29.5	33.0	36.5	39.5	41.0	44.0	45.5	47.5	49.5	50.5	
325	30.0	34.0	37.5	40.0	43.0	45.0	46.5	48.5	50.5		
350	31.0	35.0	38.5	41.0	44.0	45.5	48.5	50.5			
375	31.0	36.0	39.5	42.0	45.0	46.5	49.5	51.0			
400	32.0	36.5	40.0	43.0	45.5	48.5	50.5				
425	33.0	37.5	41.0	44.0	46.5	49.5	51.0				
450	33.0	37.5	41.0	45.0	47.5	50.5					
475	34.0	38.5	42.0	45.5	48.5	51.0					
500	34.0	39.5	43.0	46.5	49.5						
525	34.5	40.0	44.0	47.5	50.5						
550	35.5	40.0	45.0	47.5	50.5						
575	35.5	41.0	45.0	48.5	51.0						
600	36.5	42.0	45.5	49.5							