

**GENERAL VISUAL GRADING RULES FOR TIMBERS (See attachment for Measurement of Characteristics)**

**A. BEAMS AND STRINGERS – 5" and Thicker, Width more than 2" greater than thickness.**

**SELECT STRUCTURAL**

<u>Width, or Thickness</u>	<u>Narrow Face &amp; Edge Knots Middle 1/3 of Beam</u>	<u>Centerline Knots</u>	<u>Slope of Grain, Checks, Shakes, and Splits</u>
5"	1-1/4"		Checks
6"	1-1/2"		Single or opposite, sum total ¼ thickness
8"	1-7/8"	2"	Slope of Grain
10"	2"	2-5/8"	1:15 Middle 1/3
12"	2-1/8"	3-1/8"	1:12 Ends
14"	2-3/8"	3-3/8"	Shakes
16"	2-1/2"	3-5/8"	1/6 the thickness on end
18"	2-5/8"	3-3/4"	Splits
20"	2-7/8"	4"	Equal in length to half the thickness
22"		4-1/4"	
24"		4-3/8"	

**NO.1**

<u>Width, or Thickness</u>	<u>Narrow Face &amp; Edge Knots Middle 1/3 of Beam</u>	<u>Centerline Knots</u>	<u>Slope of Grain, Checks Shakes, and Splits</u>
5"	1-7/8"		Checks
6"	2-1/4"		Single or opposite, sum total ¼ thickness
8"	2-5/8"	3"	Slope of Grain
10"	2-7/8"	3-3/4"	1:11 Middle 1/3
12"	3-1/4"	4-1/2"	1:8 Ends
14"	3-1/2"	4-7/8"	Shakes
16"	3-3/4"	5-1/4"	1/6 the thickness on end
18"	3-7/8"	5-5/8"	Splits
20"	4-1/8"	5-7/8"	Equal in length to half the thickness
22"		6-1/8"	
24"		6-3/8"	

**NO.2**

<u>Width, or Thickness</u>	<u>Narrow Face &amp; Edge Knots Middle 1/3 of Beam</u>	<u>Centerline Knots</u>	<u>Slope of Grain, Checks Shakes, and Splits</u>
5"	2-5/8"		Checks
6"	3-1/4"		Seasoning
8"	4-1/2"	4-1/2"	Slope of Grain
10"	5-5/8"	5-5/8"	1:6 whole piece
12"	6-7/8"	6-7/8"	Shakes
14"	8-1/8"	7-5/8"	1/2 the length, ½ thickness, if through ends limited as splits
16"	9-1/8"	8-1/8"	Splits
18"	9-5/8"	8-5/8"	Medium
20"	10"	9-1/8"	
22"		9-5/8"	
24"		10"	

**B. POSTS and TIMBERS – 5"x5" and larger, Width not more than 2" greater than thickness.**

**SELECT STRUCTURAL**

Width,  
or Thickness

5"

6"

8"

10"

12"

14"

16"

18"

Knot Size

1"

1-1/4"

1-5/8"

2"

2-3/8"

2-1/2"

2-3/4"

3"

Slope of Grain, Checks, Shakes,  
and Splits

Checks - Seasoning checks,  
single or opposite with  
sum equal to 1/2 thickness

Slope of Grain - 1:12

Shake - 1/3 the thickness on  
the end

Splits - Medium

**NO.1**

Width,  
or Thickness

5"

6"

8"

10"

12"

14"

16"

18"

Knot Size

1-1/2"

1-7/8"

2-1/2"

3-1/8"

3-3/4"

4"

4-1/4"

4-1/2"

Slope of Grain, Checks, Shakes,  
and Splits

Checks - Seasoning checks,  
single or opposite with  
sum equal to 1/2 thickness

Slope of Grain - 1:10

Shake - 1/3 the thickness  
on end

Splits – Equal in length to  
thickness, or = to end checks

**NO.2**

Width,  
or Thickness

5"

6"

8"

10"

12"

14"

16"

18"

Knot Size

2-1/4"

2-3/4"

3-3/4"

4-3/4"

5-3/4"

6-3/4"

7-3/4"

8-3/4"

Slope of Grain, Checks, Shakes,  
and Splits

Checks - Seasoning checks,

Slope of Grain - 1:6

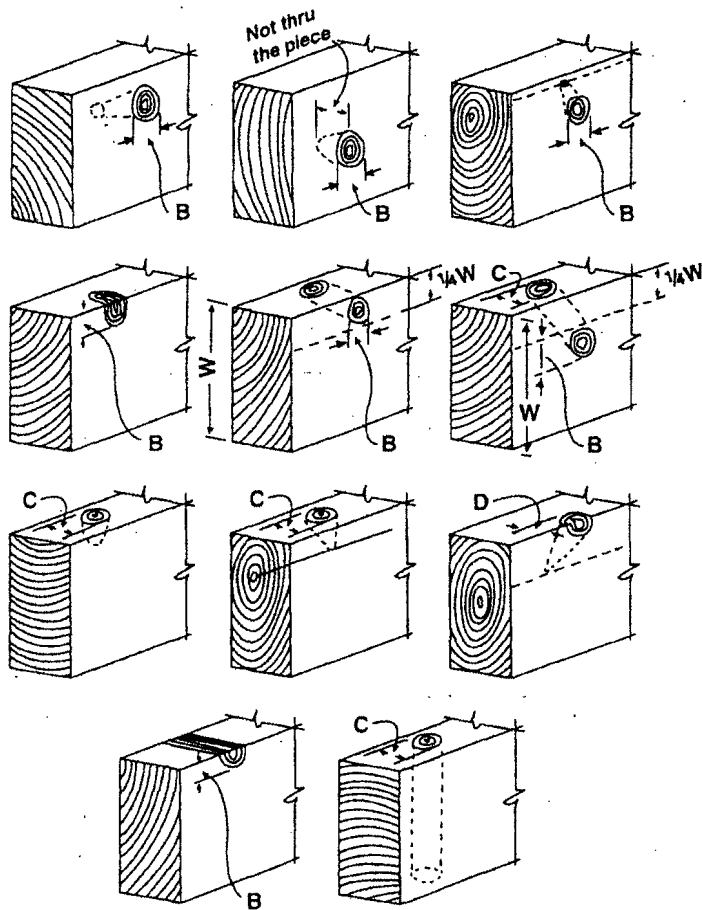
Shake - 1/2 length, 1/2 thickness.  
If through ends, limited as  
splits

Splits – Equal in length to  
thickness, or = to end checks

# MEASUREMENT OF CHARACTERISTICS

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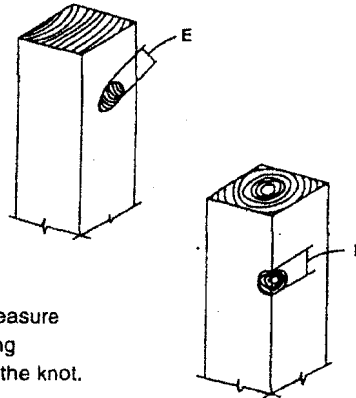
41.2 BEAM and STRINGER KNOTS (212.00 WWPA)  
 5" and Thicker Lumber  
 Width More than 2" Greater Than Thickness



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- B — Measure least dimension
- C — Measure between line parallel with the edges
- D — Measure from edge of narrow face to line parallel with the edge.

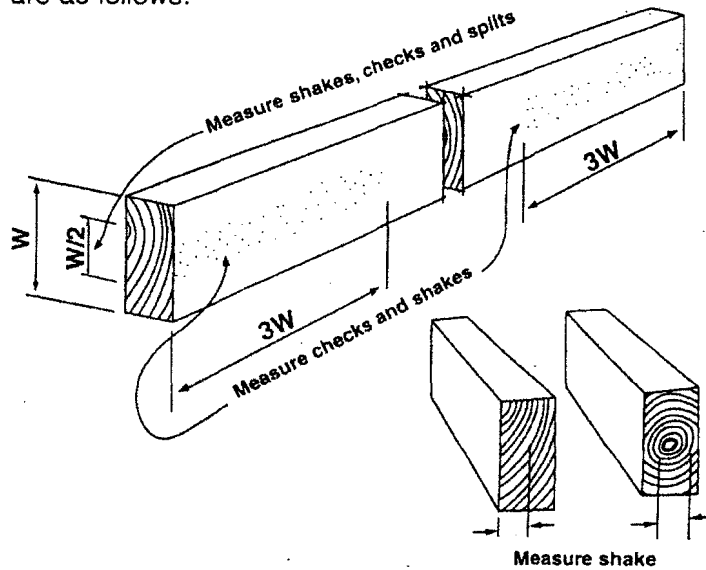
**41.3 POST and TIMBER KNOTS (213.00 WWPA)  
5" X 5" and Larger Lumber  
Width Not More Than 2" Greater Than Thickness**



E—Measure least dimension.  
F—Measure along corner or measure size most nearly representing diameter of branch causing the knot.

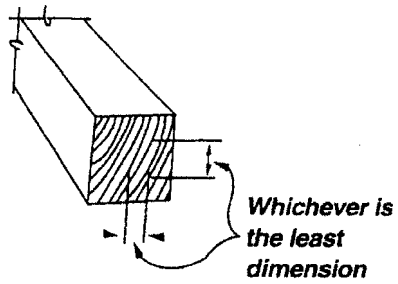
**42.0 SHAKES, CHECKS AND SPLITS (220.00 WWPA)**

In all grades of Beams and Stringers, these characteristics are measured only in the middle half of the width. Restrictions on checks apply for a distance from the ends equal to three times the width of the wide face. Shake is measured at the end between lines enclosing the shake and parallel to the wide face. Illustrations of how these characteristics are measured are as follows:

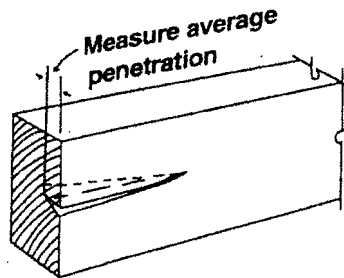


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**42.1 SHAKES** in Posts and Timbers are measured at the ends of pieces, between lines parallel with the two faces that give the least dimension. (221.00 WWPA)

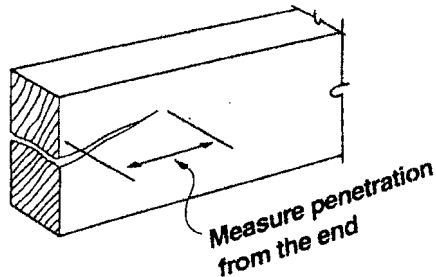


**42.2 CHECKS** are measured as an average of the penetration perpendicular to the wide face. Where two or more checks appear on the same face, only the deepest one is measured. Where two checks are directly opposite each other, the sum of their depths is considered. (222.00 WWPA)



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**42.3 SPLITS** are measured as the penetration of a split from the end of the piece and parallel to the edges of the piece. (223.00 WWPA)



#### 43.0 SLOPE OF GRAIN (230.00 WWPA)

Slope of grain is the deviation of the wood fiber from a line parallel to the edges of a piece. The deviation is expressed as a ratio such as a slope of grain of 1 in 8, etc.

In the lumber 2" nominal and thicker and 4" nominal and wider, slope of grain is measured over a sufficient length and area to be representative of the general slope of fibers. Local deviations around knots and elsewhere are disregarded in the general slope measurement.

In thinner or narrower lumber, areas of local slope of grain exceeding the slope of grain provisions of the grade shall be graded like knots. Such areas are limited to the permitted knot displacement for the grade.

In lumber less than 1" net in thickness, the average slope of grain anywhere in the length shall not pass completely through the thickness of the piece in a length less than the allowable slope.

