

NATIONAL GRADING RULE FOR DIMENSION LUMBER

120. NATIONAL GRADING RULE for DIMENSION LUMBER.

120-a. INTRODUCTION. Product Standard 20-99 “American Softwood Lumber Standard” published by the U.S. Department of Commerce, stipulates that a National Grading Rule Committee composed of members competent in the field of lumber technology shall “establish, maintain and make fully and fairly available nomenclature and descriptions of grades for dimension lumber.” It provides further that “grading rules of an agency shall not be certified as conforming to the American Softwood Lumber Standard if the Board of Review determines that the dimension lumber rules therein fail to conform to the provisions of the National Grading Rule for dimension lumber” established in conformance with Section 11 of PS20-99. The National Grading Rule applies to all species of softwood lumber which are covered by grading rules developed and approved under PS20-99.

120-b. SCOPE. For purposes of the National Grading Rule for Dimension Lumber, “dimension” is limited to surfaced softwood lumber of nominal thicknesses from 2 through 4 inches and nominal widths 2 inches and wider; and which is designed for use as framing members such as joists, planks, rafters and studs. (For Redwood, dimension is further classified as consisting only of structural and stud grades.) It does not apply to those grades that are segregated for special uses but which are sometimes manufactured to the “dimension” sizes provided that descriptions for such special grades are included in the applicable agency grading rules.

Lumber grades provide standard specifications for segregating the lumber cut from logs into appropriate use categories. Use categories may be developed based on appearance, structural capacity, suitability for secondary manufacturing, or a combination of these. The grade specifications in the National Grading Rule for Dimension Lumber are based primarily on structural performance. Limitations for appearance characteristics are established principally to ensure good suitability and utility of the material in covered structural or industrial framing uses.

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The following are examples of special products excluded from the National Grading Rule for Dimension Lumber:

Crossarms	Ladder Stock	Ship Decking and Plank Stock
Factory and Shop Lumber	Laminating Stock	Stadium Plank
Finish (Selects)	Railroad Stock	Worked Lumber
Foundation Lumber	Rough Lumber	
Industrial Clears	Scaffold Planks	

120-c. CLASSIFICATION. The National Grading Rule for Dimension Lumber classifies dimension into 3 width categories and 4 use categories. Dimension up to 4" wide is classified as "Structural Light Framing" and "Light Framing." Dimension 2" and wider is classified as "Studs." Dimension 5" and wider is classified as "Structural Joists and Planks."

The basic grade descriptions for Dimension lumber provide good structural capacity, serviceability, and general good appearance, however sometimes, structural grades with a higher appearance level are desired. An Appearance classification is also available that provides standard specifications for such uses. The Appearance category provides the same level of structural performance as the applicable NGR grade, but with added restrictions on manufacture, wane, skip, and warp. Any NGR grade may be graded or ordered with "Appearance" limitations. "Appearance" shall be designated by either including the term "Appearance" or the abbreviation "App" on the grade stamp or by specifically identifying "Appearance" in the purchase and shipping documents.

**NATIONAL GRADING RULE
FOR
DIMENSION LUMBER**

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2-4" Thick, 2-4" Wide
STRUCTURAL LIGHT FRAMING

Grade Name (and abbreviation)

Select Structural (Sel. Str.)

1

2

3

LIGHT FRAMING

Grade Name (and abbreviation)

Construction (Const)

Standard (Stand)

Utility (Util)

2-4" Thick, 2" & Wider

STUDS

Grade Name

Stud

2-4" Thick, 5" & Wider

STRUCTURAL JOISTS & PLANKS

Grade Name (and abbreviation)

Select Structural (Sel. Str.)

1

2

3

Appearance

Grade Name (and abbreviation)

NGR grade name and Appearance

(NGR grade name plus APP)

Applicable to all NGR grades

DIMENSION UP TO 4" WIDE

Structural Light Framing grades are designed to fit those engineered applications where higher design values are needed. There are four grades included in this category. Light Framing grades are designed to provide dimension of good appearance at lower design values for all those uses where high design values coupled with high appearance are not needed. A single Stud grade is also provided.

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DIMENSION 5" AND WIDER

Structural Joist and Plank grades are designed especially to fit engineering applications for lumber 5 inches and wider. There are four grades in this category. A single stud grade is also provided.

120-d. GENERAL. The major characteristics encountered in grading of softwood lumber are listed for each grade herein. Not all the listed characteristics will occur in lumber of any particular grade. When characteristics unique to a single species are encountered which are not included in the grade description, the characteristics shall be assessed in comparison to the most similar characteristic listed, and permitted to the same degree. All grade descriptions set forth the major limiting characteristics that occur in lumber in each grade. Hence, the rules describe the poorest pieces permitted in a grade. All or nearly all of the permissible characteristics of a grade are rarely present in maximum size or number in any one piece.

Any piece with a combination of characteristics which are judged to be more severe than the maximum characteristics permitted in the grade, even though each if taken individually is permitted, shall be excluded from the grade. The grading of lumber cannot be considered an exact science because it is based on a visual inspection of each piece and the judgment of the grader and/or on the results of a method of mechanically determining the strength characteristics of structural lumber. The National Grading Rule for Dimension Lumber establishes a maximum of 5 percent below grade as the tolerance allowed between graders.

Knots, checks, shakes and slope of grain in visually graded lumber shall be measured in accordance with the provisions of ASTM D245 except that no increase in slope of grain or size of knots is permitted outside the middle one-third of the length. Except as otherwise provided herein, knots appearing on narrow faces are limited to the same displacement as knots specified at edges of wide faces. The limitations on knot sizes and other characteristics governing strength shall not be exceeded. Compression wood shall be limited in effect to other appearance or strength reducing characteristics permitted in the grade.

STUDS ALL WEST COAST SPECIES

2" to 4" Thick, 2" and Wider

121. There is only one grade of Studs: "STUD."

121-c. "STUD." See base design values and width adjustments shown in Tables 4 & 6 (a&b), Para. 200. For measurement of knots, see Para. 201-b.

Characteristics permitted and limiting provisions shall be:

Checks - Seasoning checks not limited. Through checks at ends are limited as splits.

Knots - Not limited as to quality but are well spaced and are permitted in the following sizes or their equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Holes* (Any cause)
2"	3/4"	3/4"	3/4"
3"	1-1/4"	1-1/4"	1-1/4"
4"	1-3/4"	2-1/2"	1-1/2"
5"	2-1/4"	3"	1-3/4"
6"	2-3/4"	3-3/4"	2"
8"	3-1/2"	4-1/2"	2-1/2"
10"	4-1/2"	5-1/2"	3"
12"	5-1/2"	6-1/2"	3-1/2"

*One hole or equivalent smaller holes per 1 linear ft.

Manufacture - Standard "F". See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Shake - if through at ends, limited as splits. Elsewhere through shakes 1/3 the length.

Skips - hit or miss on any face, with a maximum of 10% of the pieces containing heavy skips on wide faces only. See Paras. 720 (e) and (g).

Slope of grain - 1 in 4.

Splits - equal in length to twice the width of the piece.

STUDS - ALL WEST COAST SPECIES

Stain - stained sapwood. Firm heart stain or firm red heart.

Unsound wood - must not destroy nailing edge. See Paragraph 710(e). In spots or streaks limited to 1/3 the cross section at any point along the length.

Wane - 1/3 the thickness and 1/2 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness and 3/4 the width for up to 1/4 the length. See Para. 750.

Warp - 1/2 medium. See Para. 752.

White speck and honeycomb - firm.

LIGHT FRAMING ALL WEST COAST SPECIES

2" to 4" Thick, 2" to 4" Wide
Random Length

3

122. There are four grades of Light Framing: "CONSTRUCTION," "STANDARD," "UTILITY" and "ECONOMY." These grades are stress rated except "ECONOMY," with appropriate design values shown in Tables 6a, 6b and 6c, Para. 200. Tabulated design values for Utility grade apply to 4" widths only. For widths less than 4", Utility grade design values must be adjusted as indicated in the footnote. For measurement of knots. See Para. 201-b.

122-b. "CONSTRUCTION" - LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - surface seasoning checks, not limited.

Through checks at ends are limited as splits.

Knots - sound, firm, encased and pith, must be tight and are permitted in the following sizes or their equivalent displacement:

Nominal Width	Anywhere on Wide Face	Unsound or Loose Knots and Holes (Any cause)	
2"	3/4"	5/8"	One hole or equivalent smaller holes per 3 lin. ft.
3"	1-1/4"	3/4"	
4"	1-1/2"	1"	

Manufacture - Standard "E." See Para. 722 (e).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Shake - If through at ends, limited as splits. Surface shakes up to 2' long.

Skips - hit and miss skips in a maximum of 10% of the pieces. See Para. 720 (f).

Slope - 1 in 6.

Splits - equal in length to the width of the piece.

FRAMING – ALL SPECIES (NATIONAL GRADES)

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Stain - stained sapwood. Firm heart stain or firm red heart.

Wane - 1/4 the thickness and 1/4 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness or 1/3 the width for up to 1/4 the length. See Para. 750.

Warp - 1/2 of medium. See Para. 752.

122-c. “STANDARD” - LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - not restricted as to quality and are permitted in the following sizes or their equivalent displacement:

Nominal Width	Anywhere on Wide Face	Holes (Any cause)	One hole or equivalent smaller holes per 2 lin. ft.
2"	1"	3/4"	
3"	1-1/2"	1"	
4"	2"	1-1/4"	

Manufacture - Standard “F.” See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets -pitch or bark - not limited.

Shake - If through at ends, limited as splits. Away from ends through shakes up to 2' long, well separated. If not through, single shakes shall not exceed 3' long or 1/4 the length, whichever is greater.

Skips - hit and miss, with a maximum of 5% of the pieces containing hit or miss or heavy skip 2' or less in length. See Para. 720 (e), (f) and (g).

Slope of grain - 1 in 4.

Splits - equal in length to 1-1/2 times the width of the piece.

Stain - stained sapwood. Firm heart stain or firm red heart. Not limited.

FRAMING – ALL SPECIES (NATIONAL GRADES)

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Unsound wood - Small spots or streaks of firm honeycomb or peck are limited to 1/6 the width. In 2" lumber, any other unsound wood is limited to a spot 1-1/2 the width and 2" in length or equivalent smaller.

Wane - 1/3 the thickness and 1/3 the width full length, or equivalent on each face, provided that wane not exceed 2/3 the thickness or 1/2 the width for up to 1/4 the length. See Para. 750.

Warp - light. See Para. 752.

White speck - firm, 1/3 the face or equivalent.

122-d. "UTILITY" - LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - not restricted as to quality and are permitted in the following sizes or their equivalent displacement:

Nominal Width	Anywhere on Wide Face	Holes (Any cause)	One hole or equivalent smaller holes per 1 lin. ft.
2"	1-1/4"	1"	
3"	2"	1-1/4"	
4"	2-1/2"	1-1/2"	

Manufacture - Standard "F." See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Shake - surface shakes permitted. If through at edges or ends, limited as splits. Elsewhere through shakes 1/3 the length, scattered along the length.

Skips - hit or miss, with a maximum of 10% of the pieces containing heavy skips. See Para. 720(e) and (g).

FRAMING – ALL SPECIES (NATIONAL GRADES)

Slope of grain - 1 in 4.

Splits - equal to 1/6 the length of the piece.

Stain - stained wood, not limited.

Unsound wood - Must not destroy the nailing edge.

Spots or streaks limited to 1/3 the cross section at any point along the length. See Para. 710(e).

Wane - 1/2 the thickness and 1/2 the width full length, or equivalent on each face, provided that wane not exceed 7/8 the thickness or 3/4 the width for up to 1/4 the length. See Para. 750.

Warp - medium. See Para. 752.

White speck and honeycomb - firm.

122-e. "ECONOMY" - LIGHT FRAMING. (WCLIB).

2" to 4" Thick

2" and Wider

Lumber of this grade is suitable for crating, bracing, dunnage and temporary construction. Short lengths of higher grade material may often be obtained from this grade by crosscutting.

All characteristics which do not interfere with use of the piece full length are permitted. In pieces over 8' long, characteristics which interfere with use of the piece full length are permitted if not located within 2' of either end; at least 75% of such a piece, shall be usable after it has been cut into two or three pieces. Pieces 8' and shorter are usable full length.

It is permissible at the shipper's option to ship "ECONOMY" Light Framing in mixed West Coast species.

On any order calling for one of these species, any combination may be shipped unless the order specifically excludes the other species.

STRUCTURAL JOISTS AND PLANKS ALL WEST COAST SPECIES

2" to 4" Thick, 5" and Wider

3

123. There are four grades of Structural Joists and Planks: "SELECT STRUCTURAL," "NO. 1," "NO. 2" and "NO. 3." All of these grades are stress rated with appropriate base design values and width adjustments, shown in tables 4 and 5 (a, b, c), Para. 200.

For measurement of knots, see Para. 201-b.

123-aa. "DENSE SELECT STRUCTURAL" - JOISTS AND PLANKS (Douglas fir only). Conforms to all the provisions of Para. 123-a with the additional requirement of density as defined in Para. 204-c.

123-a. "SELECT STRUCTURAL" - JOISTS AND PLANKS.

Characteristics permitted and limiting provision shall be:

Checks - surface seasoning checks, not limited.

Through checks at ends are limited as splits.

Knots - sound, firm, encased, and pith knots, if tight and well spaced, are permitted in sizes not to exceed the following, or equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Unsound or Loose Knots and Holes* (Any Cause)
5"	1"	1-1/2"	7/8"
6"	1-1/8"	1-7/8"	1"
8"	1-1/2"	2-1/4"	1-1/4"
10"	1-7/8"	2-5/8"	1-1/4"
12"	2-1/4"	3"	1-1/4"
14"	2-3/8"	3-1/4"	1-1/4"
16"	2-3/8"	3-3/8"	1-1/4"
18"	2-1/2"	3-1/2"	1-1/4"

*One hole or equivalent smaller holes per 4 lin. ft.

FRAMING - ALL SPECIES (NATIONAL GRADES)

- Manufacture - Standard "E." See Para. 722(e).
- Pitch and pitch streaks - not limited.
- Pockets - itch or bark - not limited.
- Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.
- Shake - If through at ends, limited as splits. Surface shakes up to 2' long.
- Skips - hit and miss skips in a maximum of 10% of the pieces. See Para. 720(f).
- Slope of grain - 1 in 12.
- Splits - equal in length to the width of the piece.
- Stain - stained sapwood. Firm heart stain or firm red heart limited to 10% of the piece.
- Wane - 1/4 the thickness and 1/4 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness or 1/3 the width for up to 1/4 the length.
See Para. 750.
- Warp - 1/2 of medium. See Para. 752.

123-bb. "DENSE NO. 1" - STRUCTURAL JOISTS and PLANKS (Douglas fir only). Conforms to all the provisions of Para. 123-b with the additional requirement of density as defined in Para. 204-c.

123-b. "NO. 1" - STRUCTURAL JOISTS and PLANKS. For an explanation of No. 1 & Better design values see Para. 754.

Characteristics permitted and limiting provision shall be:

- Checks - surface seasoning checks, not limited.
Through checks at ends are limited as splits.
- Knots - sound, firm, encased, and pith knots, if tight and well spaced, are permitted in sizes not to exceed the following or equivalent displacement:

**FRAMING - ALL SPECIES
(NATIONAL GRADES)**

Nominal Width	At Edge Wide Face	Centerline Wide Face	Unsound or Loose Knots and Holes* (Any Cause)
5"	1-1/4"	1-7/8"	1-1/8"
6"	1-1/2"	2-1/4"	1-1/4"
8"	2"	2-3/4"	1-1/2"
10"	2-1/2"	3-1/4"	1-1/2"
12"	3"	3-3/4"	1-1/2"
14"	3-1/8"	4"	1-1/2"
16"	3-1/4"	4-1/2"	1-1/2"
18"	3-3/8"	4-5/8"	1-1/2"

*One hole or equivalent smaller holes per 3 lin. ft.

Manufacture - Standard "E." See Para. 722 (e).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.

Shake - If through at ends, limited as splits. Surface shakes up to 2' long.

Skips - hit and miss skips in a maximum of 10% of pieces. See Para. 720(f).

Slope of grain - 1 in 10.

Splits - equal in length to width of the piece.

Stain - stained sapwood. Firm heart stain or firm red heart.

Wane - 1/4 the thickness and 1/4 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness or 1/3 the width for up to 1/4 the length. See Para. 750.

Warp - 1/2 of medium. See Para. 752.

123-cc. "DENSE NO. 2" - STRUCTURAL JOIST and PLANKS (Douglas fir only). Conforms to all the provisions of Para. 123-c with the additional requirement of density as defined in Para. 204-c.

FRAMING - ALL SPECIES (NATIONAL GRADES)

123-c. "NO. 2" - STRUCTURAL JOISTS and PLANKS.

Characteristics permitted and limiting provision shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - well spaced knots of any quality are permitted in sizes not to exceed the following or equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Holes* (Any Cause)
5"	1-5/8"	2-3/8"	1-3/8"
6"	1-7/8"	2-7/8"	1-1/2"
8"	2-1/2"	3-1/2"	2"
10"	3-1/4"	4-1/4"	2-1/2"
12"	3-3/4"	4-3/4"	3"
14"	4-1/8"	5-1/4"	3-1/2"
16"	4-1/4"	5-3/4"	4"
18"	4-3/8"	5-7/8"	4-1/2"

*One hole or equivalent smaller holes per 2 lin. ft.

Manufacture - Standard "F." See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.

Shake - If through at ends, limited as splits. Away from ends through shakes up to 2' long, well separated. If not through, single shakes shall not exceed 3' long or 1/4 the length, whichever is greater.

Skips - hit and miss, with a maximum of 5% of the pieces containing hit or miss or heavy skip 2' or less in length. See Para. 720(e), (f) and (g).

Slope of grain - 1 in 8.

Splits - equal in length to 1-1/2 times the width of the piece.

FRAMING - ALL SPECIES (NATIONAL GRADES)

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Stain - stained sapwood. Firm heart stain or firm red heart not limited.

Unsound wood (excluding white speck) - not permitted in thicknesses over 2". In 2" lumber, small spots or streaks of firm honeycomb or peck are limited to 1/6 the width. Any other unsound wood is limited to a spot 1/12 the width and 2" in length or equivalent smaller.

Wane - 1/3 the thickness and 1/3 the width full length, or equivalent on each face, provided that wane not exceed 2/3 the thickness or 1/2 the width for up to 1/4 the length.
See Para. 750.

Warp - light. See Para. 752.

White speck - firm, 1/3 the face or equivalent.

123-d. "NO. 3" - STRUCTURAL JOISTS and PLANKS.

Characteristics permitted and limiting provisions shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - well spaced knots of any quality are permitted in the following sizes or their equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Holes* (Any Cause)
5"	2-1/4"	3"	1-7/8"
6"	2-3/4"	3-3/4"	2"
8"	3-1/2"	4-1/2"	2-1/2"
10"	4-1/2"	5-1/2"	3"
12"	5-1/2"	6-1/2"	3-1/2"
14"	6"	7"	4"
16"	6-3/8"	8"	4-1/2"
18"	6-1/2"	8-1/4"	5"

*One hole or equivalent smaller holes per 1 lin. ft.

FRAMING - ALL SPECIES (NATIONAL GRADES)

- Manufacture - Standard "F." See Para. 722(f).
- Pitch and pitch streaks - not limited.
- Pockets - pitch or bark - not limited.
- Shake - surface shakes permitted. If through at edges or ends, limited as splits. Elsewhere through shakes $1/3$ the length, scattered along the length.
- Skips - hit or miss, with a maximum of 10% of pieces containing heavy skips. See Para. 720(e) and (g).
- Slope of grain - 1 in 4.
- Splits - equal to $1/6$ the length of the piece.
- Stain - stained wood, not limited.
- Unsound wood - Must not destroy the nailing edge.
(Spots or streaks limited to $1/3$ the cross section at any point along the length.) See Para. 710(e).
- Wane - $1/2$ the thickness and $1/2$ the width full length, equivalent on each face, provided that wane not exceed $7/8$ the thickness or $3/4$ the width for up to $1/4$ the length. See Para. 750.
- Warp - medium. See Para. 752.
- White speck and honeycomb - firm.

STRUCTURAL LIGHT FRAMING ALL WEST COAST SPECIES

2" to 4" Thick, 2" to 4" Wide

124. There are four grades of Structural Light Framing: SELECT STRUCTURAL," NO. 1," "NO. 2" and "NO. 3." All of these grades are stress rated, with appropriate base design values and width adjustments shown in Tables 4 and 5 (a,b,c&d), Para. 200.

For measurement of knots, see Para. 201-b.

124-aa. "DENSE SELECT STRUCTURAL" - STRUCTURAL LIGHT FRAMING (Douglas fir only) Conforms to all the provisions of 124-a with the additional requirement of density as defined in Para. 204-c.

124-a. "SELECT STRUCTURAL" - STRUCTURAL LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - surface seasoning checks, not limited.

Through checks at ends are limited as splits.

Knots - sound, firm, encased, and pith knots, if tight and well spaced, are permitted in sizes not to exceed the following, or equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Unsound or Loose Knots and Holes* (any cause)
2"	3/8"	3/8"	3/8"
3"	1/2"	1/2"	1/2"
4"	3/4"	7/8"	3/4"

*One hole or equivalent smaller holes per 4 lin. ft.

Manufacture - standard "E." See Para. 722(e).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.

Shake - If through at ends, limited as splits. Surface shakes up to 2' long.

FRAMING - ALL SPECIES (NATIONAL GRADES)

Skips - hit and miss skips in a maximum of 10% of the pieces. See Para. 720f.

Slope of grain - 1 in 12.

Splits - equal in length to the width of the piece.

Stain - stained sapwood. Firm heart stain or firm red heart limited to 10% of the piece.

Wane - 1/4 the thickness and 1/4 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness or 1/3 the width for up to 1/4 the length.
See Para. 750.

Warp - 1/2 of medium. See Para. 752.

124-bb. "DENSE NO. 1" - STRUCTURAL LIGHT FRAMING (Douglas fir only). Conforms to all the provisions of Para. 124-b with the additional requirement of density as defined in Para. 204c.

124-b. "NO. 1" - STRUCTURAL LIGHT FRAMING. For an explanation of No. 1 & Better design values see Para. 754.

Characteristics permitted and limiting provisions shall be:

Checks - surface seasoning checks, not limited.
Through checks at ends are limited as splits.

Knots - sound, firm, encased, and pith knots, if tight and well spaced, are permitted in sizes not to exceed the following, or equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Unsound or Loose Knots and Holes* (any cause)
2"	1/2"	1/2"	1/2"
3"	3/4"	3/4"	3/4"
4"	1"	1-1/2"	1"

*One hole or equivalent smaller holes per 3 lin. ft.

FRAMING - ALL SPECIES (NATIONAL GRADES)

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Manufacture - standard "E." See Para. 722(e).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.

Shake - if through at ends, limited as splits. Surface shakes up to 2' long.

Skips - hit and miss skips in a maximum of 10% of pieces. See Para. 720(f).

Slope of grain - 1 in 10.

Splits - equal in length to the width of the piece.

Stain - stained sapwood. Firm heart stain or firm red heart.

Wane - 1/4 the thickness and 1/4 the width full length, or equivalent on each face, provided that wane not exceed 1/2 the thickness or 1/3 the width for up to 1/4 the length. See paragraph 750.

Warp - 1/2 of medium. See Para. 752.

124-cc. "DENSE NO. 2" - STRUCTURAL LIGHT FRAMING (Douglas fir only). Conforms to all the provisions of Para. 124-c with the additional requirement of density as defined in Para. 204-c.

124-c. "NO. 2" - STRUCTURAL LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - well spaced knots of any quality are permitted in sizes not to exceed the following or equivalent displacement:

Nominal Width	At Edge Wide Face	Centerline Wide Face	Holes* (any cause)
2"	5/8"	5/8"	5/8"
3"	7/8"	7/8"	7/8"
4"	1-1/4"	2"	1-1/4"

**One hole or equivalent smaller holes per 2 lin. ft.*

FRAMING - ALL SPECIES (NATIONAL GRADES)

Manufacture - standard "F." See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Rate of growth - limited to medium grain in Douglas fir only. See Para. 204-a.

Shake - if through at ends, limited as splits. Away from ends through shakes up to 2' long, well separated. If not through, single shakes shall not exceed 3' long or 1/4 the length, whichever is greater.

Skips - hit and miss, with a maximum of 5% of the pieces containing hit or miss or heavy skip 2' or less in length. See Para. 720(e), (f) and (g).

Slope of grain - 1 in 8.

Splits - equal in length to 1-1/2 times the width of the piece.

Stain - stained sapwood. Firm heart stain or firm red heart. Not limited.

Unsound wood (excluding white speck) - Not permitted in thicknesses over 2". In 2" lumber, small spots or streaks of firm honeycomb or peck are limited to 1/6 the width. Any other unsound wood is limited to a spot 1/12 the width and 2" in length or equivalent smaller.

Wane - 1/3 the thickness and 1/3 the width full length, or equivalent on each face, provided that wane not exceed 2/3 the thickness or 1/2 the width for up to 1/4 the length. See Para. 750.

Warp - light. See Para. 752.

White speck - firm, 1/3 the face or equivalent.

124-d. "NO. 3" - STRUCTURAL LIGHT FRAMING.

Characteristics permitted and limiting provisions shall be:

Checks - seasoning checks not limited. Through checks at ends are limited as splits.

Knots - well spaced knots of any quality are permitted in the following sizes or their equivalent displacement:

FRAMING - ALL SPECIES (NATIONAL GRADES)

Nominal Width	At Edge Wide Face	Centerline Wide Face	Holes* (any cause)
2"	3/4"	3/4"	3/4"
3"	1-1/4"	1-1/4"	1-1/4"
4"	1-3/4"	2-1/2"	1-3/4"

**One hole or equivalent smaller holes per 1 lin. ft.*

Manufacture - standard "F." See Para. 722(f).

Pitch and pitch streaks - not limited.

Pockets - pitch or bark - not limited.

Shake - surface shakes permitted. If through at edges or ends, limited as splits. Elsewhere through shakes 1/3 the length, scattered along the length.

Skips - hit or miss, with a maximum of 10% of the pieces containing heavy skips. See Para. 720(e) and (g).

Slope of grain - 1 in 4.

Splits - equal to 1/6 the length of the piece.

Stain - stained wood - not limited.

Unsound wood - Must not destroy the nailing edge.

Spots or streaks limited to 1/3 the cross section at any point along the length. See Para. 710(e).

Wane - 1/2 the thickness and 1/2 the width full length, or equivalent on each face, provided that wane not exceed 7/8 the thickness or 3/4 the width for up to 1/4 the length.

See Para. 750.

Warp - medium. See Para. 752.

White speck and honeycomb - firm.

FRAMING - ALL SPECIES (NATIONAL GRADES)

125. APPEARANCE There is only one category of Appearance. "Appearance" provides the same level of structural performance as the applicable NGR grade, but with added restrictions on manufacture, wane, skip, and warp. Any NGR grade may be graded or ordered with "Appearance" limitations. "Appearance" shall be designated by either including the term "Appearance" or the abbreviation "App" on the grade stamp or by specifically identifying "Appearance" in the purchase and shipping documents.

125a. APPEARANCE Conforms to all provisions of the applicable NGR grade. In addition, the following limitations shall apply:

Manufacture - standard "E." See Para. 722.

Skip - hit and miss skips in a maximum of 10% of pieces. See Para. 720(f).

Wane - 1/4 the thickness and 1/6 the width for up to 1/4 the length. Omit Para. 750.

Warp - 1/2 of medium. See Para. 752.

EXTERIOR DECKING ALL WEST COAST SPECIES

ROUGH OR SURFACED

K.D., A.D., or Unseasoned
5/4" to 2" Thickness, 4" and Wider

Recommended for flatwise load application where spans are limited to 24" on center for nominal 6" and wider, and 16" on center for all other widths. Western Juniper spans limited to 16" on center spans for nominal 5" up to nominal 8" widths and 24" spans for widths greater than nominal 8".

Approved by the American Lumber Standard Committee Board of Review. Species graded under this rule are span rated in accordance with the requirements of the American Lumber Standard Committee Policy for Evaluation of Recommended Spans for Span Rated Decking Products.

126. Exterior Decking is recommended for flatwise use, where it's decorative appearance makes it highly suitable for outdoor applications such as patio and poolside decks, benches, boardwalks, planter boxes, and many garden uses.

Exterior Decking is run to standard sizes with the option of radius edges per buyer's specification.

There are two grades of Exterior Decking: "SELECT DEX" and "COMMERCIAL DEX."

126-a. "SELECT DEX" Characteristics permitted and limiting provisions shall be:

Medium stained sapwood, heart stain firm.

Short splits.

Medium seasoning checks.

Medium bark pockets, small pitch pockets.

Light shake - several along length, none through; if through at ends, limited as splits.

Medium raised or torn grain.

Pin holes - limited.

Holes - pin to small size, equivalent to chipped knots.

**EXTERIOR DECKING
ALL WEST COAST SPECIES**

Knots - Sound and tight.

Nominal Width	Knot Size	Span Rating
4"	1-1/2"	16" O.C.
5"	2"	16" O.C.
6"	2-1/2"	24" O.C.
8"	3"	24" O.C.
10"	3-1/2"	24" O.C.
12"	4"	24" O.C.

Spike knots or narrow face knots equivalent displacement.

Chipped knots - not to exceed 1/3 thickness, 2 per 12'.

Pitch streaks - medium or equivalent.

Skip - very light, 1 per 12'; light on reverse face and edges.

Warp - light.

Slope of grain - 1 in 8.

Unless otherwise specified, reverse face may contain characteristics one grade lower (Exterior Commercial Decking). In addition, pieces may contain wane 1/2 the thickness by 1/3 the width or equivalent on each face; in cedar species, peck permitted in small spots or streaks limited to 1/6 width.

126-b. "COMMERCIAL DEX"

Characteristics permitted and limiting provisions shall be:

Stained wood.

Medium splits.

Season checks.

Large bark pockets, medium pitch pockets.

Manufacture - standard "F."

Medium shake - 1/4 length, none through; if through at ends limited as splits.

Torn or raised grain.

EXTERIOR DECKING ALL WEST COAST SPECIES

Pin holes.

Knots:

Nominal Width	Sound & Tight Knots	Unsound, Loose Knots, Holes*	Span Rating
4"	1-7/8"	1"	16" O.C.
5"	2-1/2"	1"	16" O.C.
6"	3"	1-1/2"	24" O.C.
8"	4"	2"	24" O.C.
10"	5"	2"	24" O.C.
12"	6"	2"	24" O.C.

**Holes maximum one hole per 12' length.*

Spike knots or narrow face knots equivalent displacement.

Slope of grain - 1 in 8.

Skip - light on face, 2 per 12'; hit and miss 1/32 on reverse face, medium on edges.

Warp - medium.

White speck - firm 1/3 face area.

Unless otherwise specified, reverse face may contain characteristics 25% larger than face side. In addition: white speck, firm; unsound wood in small spots and streaks limited to 1/6 width; wane 1/2 the thickness by 1/3 the width, or equivalent on each face; in cedar species, peck permitted in spots or streaks limited to 1/3 width.

ALTERNATE DECKING GRADES ALL SPECIES

ROUGH OR SURFACED

K.D., A.D., or Unseasoned

Recommended for flatwise load applications where spans are either 16" or 24" on center.

126-r. Some manufacturers of decking products from species listed in this grade rule prefer to grade the material under the provisions of the Radius Edge Decking Special Product Rule of the Southern Pine Inspection Bureau which are published here. There are two grades of Radius Edge Decking, "PREMIUM DECKING" and STANDARD DECKING".

Species graded under this rule are span rated for either 16" or 24" in accordance with the requirements of the American Lumber Standard Policy for Span Rated Decking Products. Species only approved for a 16" span shall include the phrase "16" on center" in the grade stamp.

The standard radius for Radius Edge Decking products is 1/4". Decking manufactured with a different radius shall list the radius in the grade stamp.

Face knots are measured as the average of the maximum and minimum diameters. Knots occurring on the reverse face are measured by displacement. In no case shall knots on either face displace more than 45% of the cross section in Premium and 55% of the cross section in Standard.

For length mix specifications see Para. 260-r.

126-ra. "PREMIUM DECKING"

Characteristics permitted and limiting provisions shall be:

Checks - medium surface checks; through checks not over 1/32" wide are allowed if not longer than width of piece.

Compression Wood - prohibited if in readily identifiable and damaging form.

Firm Red Heart - not over 25% of face.

Holes - one medium allowed for each 4' of length.

ALTERNATE DECKING GRADES ALL SPECIES

Knots - sound, firm, encased and pith knots, if tight and well spaced, in sizes as listed; decayed knots on same basis if smooth across the surface or if evidencing only minor surface pits or cavities; decayed knots containing serious pits or cavities limited to one-half the sound knot size.

Nominal Width	Knot Sizes
4"	1"
5"	1-1/4"
6"	1-1/2"

Note: the sum of diameters of all face knots in any 4' of length must not exceed twice the diameter of the maximum size knot allowed.

Manufacture - standard "E" manufacture.

Pitch - medium.

Pitch pockets - medium.

Pitch streaks - medium.

Pith - not limited.

Shakes - slight (not over 1/32" wide), if through at end limited as splits.

Skips - very light face and edge skip (not over 1/64" deep) if not longer than 6" for full width or equivalent area if less than full width.

Slope to grain - 1" in 8".

Splits - short (not longer than width of piece).

Stain - medium.

Wane - not to exceed 1/8" deep or 1/2" wide.

Warp - medium.

(Reverse side not lower than Standard except wane - not over 1/2" deep and 1" wide and pitch pockets - large.)

126-rb. "STANDARD DECKING"

Characteristics permitted and limiting provisions shall be:

Checks - checks except through checks limited as splits.

ALTERNATE DECKING GRADES ALL SPECIES

Compression Wood - prohibited if in readily identifiable and damaging form.

Firm Red Heart - not limited.

Holes - up to 1/4" through holes well scattered.

Knots - sound, firm, encased and pith, if tight and well spaced are limited to the size as listed; decayed knots on same basis if smooth across surface or if evidencing only minor surface pits or cavities; decayed knots containing serious surface pits or cavities are limited to Premium size knots; hollow knots limited by Premium knot size and through opening in them limited to 1/4".

Nominal Width	Knot Sizes
4"	1-1/2"
5"	1-3/4"
6"	2-1/2"

Manufacture - standard "E" manufacture.

Pitch - medium.

Pitch pockets - medium.

Pitch streaks - medium.

Pith - not limited.

Shakes - medium (not over 1/8" wide), if through at ends limited as splits.

Skips - light skip allowed not to exceed 10% of face, hit or miss on edges.

Slope of grain - 1" in 8".

Splits - medium splits.

Stain - medium stain.

Wane - not to exceed 1/8" deep or 1/2" wide.

Warp - heavy.

(Reverse side shall be free of defects which might prevent its use as decking. Streaks of heart-center decay not over 1/3 the width or thickness or the equivalent in unsound red heart allowed. Wane not over 1/2" deep and 1" wide.)