

# INDUSTRIAL CLEARS WESTERN RED CEDAR

VG, FG, AND/OR MG

Rough or Surfaced  
KD, AD or Unseasoned  
2" and Thinner, 3" and Wider

**149.** Western red cedar Industrial Clears, if ordered surfaced and unless otherwise specified, are finished to the sizes shown in the tables of Para. 250.

Grade descriptions are based on a piece 8" wide and 12' long.

Pieces 5" and narrower are graded from best face and both edges; pieces 6" and wider from best face and one edge.

There are three grades of Western red cedar Industrial Clears: "B and BETTER", "C" and "D."

**149-b. "B and BETTER" CEDAR INDUSTRIAL CLEARS.** A supreme grade recommended and widely used for interior and exterior trim, cabinet work, doors and similar uses, where the finest finish is important.

Pieces of this grade shall average not less than 6 annual rings per inch at either one end or the other.

Characteristics which may appear on pieces in this grade and their limiting provisions are:

Checks - 4, small - no limit to number in rough stock.

Slope of grain - not to exceed 1 in 8.

Splits - short, in 5% of the pieces.

Torn or raised grain - very light.

Warp - very light in occasional pieces.

Knots - on reverse face, 3 sound tight small.

Skips - on reverse face, occasional light.

**149-c. "C" CEDAR INDUSTRIAL CLEARS.** This grade is recommended and widely used for interior and exterior trim, cabinet work, doors and similar uses where a high quality finish is important.

Characteristics which may appear on pieces in this grade and their limiting provisions are:

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Checks - 4, small - no limit to number in rough stock.

Skips - occasional very light on face; light on edges and reverse side.

Slope of grain - 1 in 6.

Splits - short, in 5% of the pieces.

Sap stain - medium.

Torn or raised grain - light.

Warp - light in occasional pieces.

Knots - 3 sound tight 1", or 5 equivalent smaller or 4 not firmly fixed or unsound 1/2 the size of sound and tight knots.

10% of the pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' and longer.

**149-d. "D" CEDAR INDUSTRIAL CLEARS.** A grade recommended and widely used where general utility purposes are of more importance than appearance. Characteristics on reverse face may be approximately 25% larger or more numerous.

Characteristics which may appear on pieces in this grade and their limiting provisions are:

Checks.

Knots - 4, approximately 1" or 8 equivalent smaller.

Pin holes - limited.

Skips - hit and miss; approximately 1/8" scant on edge.

Splits - short.

Sap stain.

Torn or raised grain.

Wane - 1/8 the width, 1/4 the length or equivalent, 1/4 the thickness, 50% more on reverse face.

White specks - firm, 1/4 the width or equivalent.

Warp - medium.

20% of pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' and longer.

# INDUSTRIAL CLEARS WESTERN RED CEDAR

VG, FG, AND/OR MG

Rough or Surfaced  
KD, AD or Unseasoned  
2-1/4" and Thicker, 3" and Wider

**150.** Industrial Clears, if ordered surfaced and unless otherwise specified, are finished to the sizes shown in the tables of Para. 250-d.

Grade descriptions are based on a piece 8" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

The grade is determined from the better face with the upper half of the edges considered as part of the face, and lower half of the edges as part of the reverse face, the reverse face being approximately one grade lower.

There are three grades of Industrial Clears: "B and BETTER", "C" and "D."

**150-b. "B and BETTER" CEDAR INDUSTRIAL CLEARS.** A supreme quality grade recommended and widely used for interior and exterior trim, cabinet work, doors and similar uses, where the finest finish is important.

Pieces in this grade shall average not less than 6 annual rings per inch at either one end or the other of the piece.

Characteristics which may appear on pieces in this grade and their limiting provisions are:

Checks - four small - no limit to number in rough stock.

Slope of grain - not to exceed 1 in 8.

Splits - short, in 5% of the pieces.

Torn or raised grain - very light.

Warp - very light in occasional pieces.

Knots, on reverse face - three sound tight 1" in 2-1/4" thicknesses to three 2" in 12" thicknesses.

**150-c. "C" CEDAR INDUSTRIAL CLEARS.** This grade is recommended and widely used for interior and exterior trim, cabinet work, garage doors and similar uses where a high quality finish is important.

## INDUSTRIAL CLEARS WESTERN RED CEDAR

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Characteristics which may appear on pieces in this grade and their limiting provisions are:

Checks - four small - no limit to number in rough stock.

Skips - occasional very light on face; light on edges and back.

Slope of grain - 1 in 6.

Splits - short, in 5% of the pieces.

Sap stain - medium.

Torn or raised grain - light.

Warp - light in occasional pieces.

Knots - four sound tight 1" or five equivalent smaller in 2-1/4" thickness to four 2" or five equivalent smaller in 12" thicknesses or four not firmly fixed or unsound 1/2 the size of sound and tight knots.

10% of pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' and longer.

**150-d. "D" CEDAR INDUSTRIAL CLEARS.** A grade recommended and widely used where general utility purposes are of more importance than appearance. Reverse face must be of reasonably clear type, allowing characteristics approximately 25% larger or more numerous.

Characteristics which may appear on pieces in this grade and their limiting provisions are:

Checks.

Pin holes - limited.

Skips - hit and miss; approximately 1/8" scant on edge.

Splits - short.

Sap stain.

Torn or raised grain.

Wane - 1/8 the width, 1/4 the length or equivalent, 1/4 the thickness; 50% more on reverse side.

Warp - medium.

White specks - 1/4 the width or equivalent.

Knots - five 1" or seven equivalent smaller in 2-1/4" thicknesses, to five 2" or seven equivalent smaller in 12" thicknesses.

# INDUSTRIAL CLEARS ALL WEST COAST SPECIES (EXCEPT CEDAR)

VG, FG, AND/OR MG

Rough or Surfaced  
KD, AD or Unseasoned  
2" and Thinner, 3" and Wider

20% of pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' and longer.

**151.** Industrial Clears, if ordered surfaced, and unless otherwise specified, are finished to the sizes shown in the tables, Para. 250. Bright sapwood is admitted without limit in all grades except "B&BTR" INDUSTRIAL. The restrictions on bright sapwood prescribed in the "B & BTR" INDUSTRIAL grade do not apply if the lumber is kiln dried or air dried or treated with anti-stain solution.

Grade descriptions are based on a piece 8" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

Pieces 5" and narrower are graded from the best face and both edges; pieces 6" and wider are graded from the best face and one edge.

There are three grades of Industrial Clears: "B & BTR", "C" and "D."

In addition to the following specific provisions applicable to Industrial Clears, the appropriate provisions in all other paragraphs of the rules apply.

**151-b. "B & BTR" INDUSTRIAL.** Pieces of this grade are of sound wood and are recommended for and widely used as trim, cabinet work, garage doors and other similar uses where finest appearance is important.

Pieces of this grade have an average of 6 or more rings of annual growth per inch on either one end or the other. Pieces are entirely clear or have only a few minor and unimportant characteristics, such as:

Bright sapwood - 1/3 width or equivalent in flat grain and 1/3 width or equivalent on both faces in vertical grain.

Short splits in not more than 5% of the pieces.

Four small seasoning checks.

**INDUSTRIAL CLEARS  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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Very light torn or raised grain.

Slope of grain not to exceed 1 in 8.

Three very small pitch or bark pockets or their equivalent.

Very light warp in occasional pieces.

Occasional light skips on reverse face.

**151-c. "C" INDUSTRIAL.** Pieces of this grade are of sound wood and are recommended for and widely used as trim, cabinet work, garage doors and other similar uses where excellent appearance is important.

Pieces may have one or more characteristics which are of such size or number that the piece is not of "B & BTR" grade.

Pieces may have:

Sap stain, medium - 25% of piece or greater area of lighter stain.

Heart stain, firm.

Short splits in not more than 5% of the pieces.

Small seasoning checks, well scattered.

Light torn or raised grain.

Occasional very light skips on face, light skips on edges and reverse side.

Light warp in occasional pieces.

With the above, one of the following or its equivalent:

Two small sound, tight knots or equivalent smaller.

Four small pitch or bark pockets.

Small pitch streak on resinous species.

The reverse side of an occasional piece may contain a shallow manufacturing mar.

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ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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**151-d. "D" INDUSTRIAL.** Pieces of this grade are recommended for use where excellent serviceability is required but appearance is not of primary importance.

Pieces may have one or more characteristics which are of such size or number that the piece is not of "C" grade. Pieces may contain characteristics which have no important effect on the utility of the piece such as:

Stained wood.

Occasional short splits.

Medium seasoning checks, scattered.

Limited pin holes.

Medium torn or raised grain in scattered spots.

Medium pitch streak.

Hit and miss skips.

Rough edges not more than 1/8" scant.

Medium chip marks.

Medium warp.

Four knots approximately 1" or their equivalent smaller.

Four medium pitch or bark pockets or their equivalent.

Firm white specks, 1/4 of width or equivalent.

Wane - 1/4 the thickness and 1/8 the width for 1/4 the length.

A 3" cutout, 3' or more from either end of pieces 12' and longer, is permissible in 10% of the shipment.

Characteristics on reverse side may be slightly in excess of above.

All or nearly all of the permissible characteristics of the grade are never present in maximum size or number in any one piece. Any piece with an unusual combination of characteristics which seriously affects normal serviceability is excluded from the grade.

# INDUSTRIAL CLEARS ALL WEST COAST SPECIES (EXCEPT CEDAR)

VG, FG, AND/OR MG

Rough or Surfaced  
KD, AD or Unseasoned  
2-1/4" and Thicker, 3" and Wider

**152.** Industrial Clears, if ordered surfaced, and unless otherwise specified, are finished to the sizes shown in the tables, Para. 250. Bright sapwood is permitted without limit in all grades except "B & BTR" INDUSTRIAL. The restrictions on bright sapwood prescribed in the "B & BTR" INDUSTRIAL grade do not apply if the lumber is kiln dried or air dried or treated with anti-stain solution.

Grade descriptions are based on a piece 8" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece. In determining the grade of pieces of these thicknesses, the upper half of the edges is considered a part of the face; the lower half of the edges is considered a part of the reverse face. Characteristics on the reverse face may be slightly in excess of those allowed on the better face, but in no case are they more than one grade lower except as otherwise specified.

There are three grades of Industrial Clears: "B & BTR", "C" and "D."

In addition to the following specific provisions applicable to Industrial Clears, the appropriate provisions in all other paragraphs in the rules apply.

**152-b. "B & BTR" INDUSTRIAL.** Pieces of this grade are of sound wood and have an average of 6 or more rings of annual growth on either one end or the other. Pieces are entirely clear or have only a few minor and unimportant characteristics such as:

Bright sapwood - 1/3 width or equivalent in flat grain and 1/3 width or equivalent on both faces in vertical grain.

Short splits in not more than 5% of the pieces.

Four small seasoning checks.

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Very light torn or raised grain.

Slope of grain not to exceed 1 in 8.

Three 4" pitch or bark pockets in 2-1/4" thickness to three 6" pockets in 4" and thicker stock.

Very light warp in occasional pieces.

Occasional light skips on reverse face.

**152-c. "C" INDUSTRIAL.** Pieces of this grade are of sound wood. Pieces may have one or more characteristics which are of such size or number that the piece is not of "B&BTR" grade.

Pieces may have:

Sap stain, medium - 25% of face or greater area of lighter stain.

Heart stain - firm.

Short splits in not more than 5% of the pieces.

Small seasoning checks, well scattered.

Light torn or raised grain.

Occasional very light skips on face, light skips on reverse side.

Light warp in occasional pieces.

With the above, one of the following or its equivalent:

Three sound, tight 1" knots in 2-1/4" thickness to three 2" in 12" thickness.

Four 6" pitch or bark pockets or equivalent smaller.

In 4" and thicker stock, an occasional pocket may be 25% larger.

Medium pitch streak.

The reverse side of an occasional piece may contain a shallow manufacturing mar.

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ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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**152-d. "D" INDUSTRIAL.** Pieces may have one or more characteristics which are of such size or number that the piece is not of "C" grade. Pieces may contain characteristics which have no important effect on the utility of the piece such as:

Stained wood.

Occasional short splits.

Medium seasoning checks, scattered.

Limited pin holes.

Medium torn or raised grain.

Medium pitch streak.

Hit and miss skips.

Medium warp.

Four 1" knots in 2-1/4" thickness to four 2" in 12" thickness.

Four 8" pitch or bark pockets or equivalent smaller.  
An occasional pocket may be 25% larger.

Firm white specks, 1/4 of width or equivalent.

Wane - 1/4 the thickness, 1/8 the width for 1/4 the length.

A 3" cutout 3' or more from either end of pieces 12' and longer is permissible in 10% of the shipment.

All or nearly all of the permissible characteristics of the grade are never present in maximum size or number in any one piece. Any piece with an unusual combination of characteristics which seriously affects normal serviceability is excluded from the grade.

# STRUCTURAL TENSION LAMINATIONS ALL SPECIES

## ROUGH OR SURFACED

2" Net or Thinner when Surfaced  
3" and Wider

**153.** There are three grades of Structural Tension Laminations. These grades are designated 302-24, 302-22, and 302-20.

The following general restrictions and limiting provisions apply to all grades and sizes of lumber used as individual laminations for structural glued laminated lumber.

Cross-section - a 1' length of a lamination shall be considered as a cross section.

Density - for Douglas fir, each piece shall meet the provisions for Dense. See Para. 204 (c) full length.

Specific gravity - pieces shall have near or above average specific gravity for the species. The minimum specific gravity adjusted to oven dry weight and volume at 12% moisture content basis shall be .45 for Douglas fir and .39 for Hem-Fir. For other species, see paragraph 200.

Moisture content - moisture content is subject to special agreement.

Knots - knots may be sound, unsound or not firmly fixed.

Knot measurement - a knot is measured by the area of the cross section it occupies.

Knot spacing - a knot of the permitted size may be anywhere on the faces.

Knot holes - knot holes are interchangeable with knots in size and spacing. Other holes permitted if no more damaging in effect than the allowable knot hole.

Splits and shakes - splits and shakes are permitted if extending from wide faces into the thickness at an angle of 45 degrees or more from the wide face.

Warp - crook or twist, light.

## STRUCTURAL TENSION LAMINATIONS ALL SPECIES

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Torn grain - medium torn grain. Spots of heavy torn grain around knot areas or equivalent.

Heart stain - firm.

Compression wood - isolated streaks up to 5% of the cross section permitted when limits are clearly definable. Compression wood cumulative with other characteristics limited by displacement.

Checks - seasoning.

Pitch pockets - medium, scattered.

Pitch streaks - not exceeding 1/6 width.

Manufacture - shall be well manufactured.

Surfacing - edges may be hit or miss when ordered surfaced.

Wane - per purchaser's specification. Limited on all edges to 1/6 of wide face.

In addition to the following specific provisions applicable to lumber for laminating purposes, the appropriate provisions of all other paragraphs in the rules apply.

### **153-a. 302-24 STRUCTURAL TENSION LAMINATION.**

Characteristics and limiting provisions are:

Knots shall not occupy more than 1/5 of the cross section.

Maximum size single strength reducing characteristics when not in the same horizontal projection must be at least two feet apart measured center to center.

Any cross section shall have at least 2/3 clear wood free of strength reducing characteristics with a slope of grain no steeper than 1 in 16.

Knots plus associated localized cross grain, or localized cross grain not associated with a knot, or a combination of the two may occupy up to 1/3 of the cross section.

General slope of grain shall not exceed 1 in 16.

Wide ringed or light weight pith associated wood at the ends of the piece shall not exceed 1/8 of the cross section.

## STRUCTURAL TENSION LAMINATIONS ALL SPECIES

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### 153-b. 302-22 STRUCTURAL TENSION LAMINATION.

Characteristics and limiting provisions are:

Knots shall not occupy more than 1/4 of the cross section.

Any cross section shall have at least 60% clear wood free of strength reducing characteristics with a slope of grain no steeper than 1 in 16.

Knots plus associated localized cross grain, or localized cross grain not associated with a knot, or a combination of the two may occupy up to 40% of the cross section.

General slope of grain shall not exceed 1 in 16.

Wide ringed or light weight pith associated wood at the ends of the piece shall not exceed 1/8 of the cross section.

### 153-c. 302-20 STRUCTURAL TENSION LAMINATION.

Characteristics and limiting provisions are:

Knots shall not occupy more than 1/4 of the cross section.

Any cross section shall have at least 50% clear wood free of strength reducing characteristics with a slope of grain no steeper than 1 in 12.

Knots plus associated localized cross grain, or localized cross grain not associated with a knot, or a combination of the two may occupy up to 1/2 of the cross section.

General slope of grain shall not exceed 1 in 12.

Wide ringed or light weight pith associated wood at the ends of the piece shall not exceed 1/8 of the cross section.

# STRUCTURAL LAMINATIONS ALL SPECIES

## ROUGH OR SURFACED

2" Net, or Thinner, When Surfaced  
3" and Wider

**154.** There are five grades of Structural Laminations: **“L1” DENSE LAMINATING, “L1-c” LAMINATING, “L2-d” DENSE LAMINATING, “L2” LAMINATING, and “L3” LAMINATING.**

The following general restrictions and limiting provisions apply to all grades and sizes of lumber used as individual laminations for structural glued laminated lumber.

Moisture Content - Moisture content is subject to special agreement.

Knots - Knots may be sound, unsound or not firmly fixed.

Knot Measurement - A knot is measured by the area of the cross section it occupies.

Knot Spacing - A knot of the permitted size may be anywhere on the faces. Knots must be spaced in accordance with Para. 201.

Knot Holes - Knot holes are interchangeable with knots in size and spacing. Other holes permitted if no more damaging in effect than the allowable knot hole.

Splits and Shake - Splits and shake are permitted if extending from wide faces into the thickness at an angle of 45 degrees or more from the wide face.

Warp - Crook or twist, light.

Torn Grain - Medium torn grain. Spots of heavy torn grain around knot areas or equivalent.

Heart Stain- Firm.

Checks - Seasoning.

Pitch Pockets - Medium, scattered.

Pitch Streaks - Not exceeding 1/6 width.

Manufacture - Shall be well manufactured.

Surfacing - Edges may be hit or miss when ordered surfaced.

## STRUCTURAL LAMINATIONS ALL SPECIES

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In addition to the following specific provisions applicable to lumber for laminating purposes, the appropriate provisions of all other paragraphs in the rules apply.

### 154-aa. "L1" LAMINATING STRUCTURAL LAMINATIONS.

Characteristics and limiting provisions are:

Light stained sapwood.

Dense grain in Douglas Fir. Medium grain for all other species.

Basic slope of grain not to exceed 1 in 14 full length of piece.

Nominal Width	Knots, Sound Unsound, Loose Approximately	Nominal Width	Knots, Sound Unsound, Loose Approximately
4"	7/8"	10"	2-3/8"
6"	1-3/8"	12"	2-7/8"
8"	1-7/8"	14"	3-3/8"

Spike and narrow face knots are permitted if judged to have no more effect on strength than other knots.

### 154-a. "L1-c" LAMINATING STRUCTURAL LAMINATIONS.

Characteristics and limiting provisions are:

Light stained sapwood.

Close grain.

Basic slope of grain not to exceed 1 in 12 full length of piece.

Knots conform to provisions of Para. 154-aa.

### 154-bb. "L2-d" DENSE LAMINATING STRUCTURAL LAMINATIONS.

Limited to Douglas Fir only. Conforms to all the provisions of Para. 154-b except that Dense material is required.

## STRUCTURAL LAMINATIONS ALL SPECIES

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### 154-b. "L2" LAMINATING STRUCTURAL LAMINATIONS.

Characteristics and limiting provisions are:

Medium stained sapwood.

Medium grain.

Basic slope of grain not to exceed 1 in 12 full length of piece.

Wane per purchaser's specifications.

Firm white specks. A combination of white speck and a knot in the same cross section shall occupy not more than 1/3 the width or equivalent.

Nominal Width	Knots, Sound Unsound, Loose Approximately	Nominal Width	Knots, Sound Unsound, Loose Approximately
4"	1-1/8"	10"	3-1/8"
6"	1-7/8"	12"	3-3/4"
8"	2-3/8"	14"	4-3/8"

Spike and narrow face knots are permitted if judged to have no more effect on strength than other knots.

### 154-c. "L3" LAMINATING STRUCTURAL LAMINATIONS.

Characteristics and limiting provisions are:

Medium stained sapwood.

Medium grain.

Basic slope of grain not to exceed 1 in 8 full length of piece.

Wane per purchaser's specifications.

Firm white specks. A combination of white speck and a knot in the same cross section shall occupy not more than 1/2 the width or equivalent.

## STRUCTURAL LAMINATIONS ALL SPECIES

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Nominal Width	Knots, Sound Unsound, Loose Approximately	Nominal Width	Knots, Sound Unsound, Loose Approximately
4"	1-3/4"	10"	4-5/8"
6"	2-3/4"	12"	5-5/8"
8"	3-5/8"	14"	6-5/8"

Spike and narrow face knots are permitted if judged to have no more effect on strength than other knots.

# E-RATED STRUCTURAL LAMINATIONS ALL SPECIES

2" Net, or Thinner, When Surfaced  
3" and Wider

**154-d.** Conforms to all provisions for Paragraph 154 except for knot spacing. Knots, knot holes, burls, and distorted grain occurring at the edges of the wide faces shall be measured and limited in conformance with the Visual Grading Requirements of Paragraph 206-b, Mechanically Stress Rated Lumber. When specific gravity of the grade (based on oven-dry weight and volume at 12% moisture content) exceeds the value for the species average and is initially qualified by the Bureau and subsequently controlled by the mill as part of the daily quality control program, the higher specific gravity may be assigned to the grade. This grade qualified specific gravity may also be used to assign allowable design values for Fv and Fc in accordance with the provisions of paragraph 206. The ends of lumber not tested by the stress grading equipment shall be limited as follows:

Edge Knots - as limited above.

Non-Edge Knots - equal to the largest non-edge knots in the tested portion of the piece or the next larger edge knot, whichever is greater.

Cross-Section Knots - displacement of all knots in the same cross section must not exceed the size of the permitted non-edge knot.

Slope of Grain - the general slope of grain in the untested end portion shall not exceed:

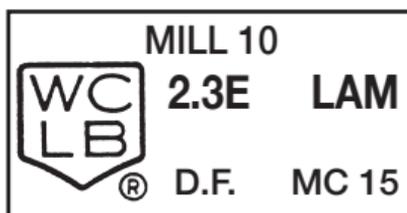
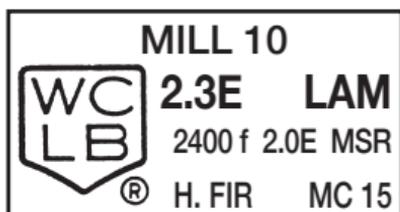
Slope	Edge Knot Category
1 in 12	1/6 and smaller
1 in 10	>1/6 to 1/4
1 in 8	>1/4

All E-rated Structural Laminations shall be identified with a West Coast grade stamp containing mill identification, species, seasoning, and the E grade designation followed by the word LAM. The E designation shall be the average long span E of the grade as determined by qualification test and maintained by quality control.

## E-RATED STRUCTURAL LAMINATIONS ALL SPECIES

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The grade stamp may also contain the applicable Machine Stress Rated grade in accordance with provisions of Paragraph 206.



# FACTORY LUMBER ALL WEST COAST SPECIES (EXCEPT CEDAR)

**155.** Grades as described under FACTORY are valued for cutting qualities only and based on the percentage of cuttings.

Factory lumber is measured for the percentage of cuttings that can be obtained with the grade work carried to each cutting piece.

In Factory lumber 1-3/8" and thicker, which shows on both sides, the grade is determined from the poorer face and by the quantity of suitable cuttings obtained from each piece.

In addition to the following specific provisions applicable to Factory lumber, the appropriate provisions in all other paragraphs in the rules apply.

## ONE-INCH SHOP

### 155-a. SIZES 1" SHOP

Nominal Thickness Inches		Finished Thickness S2S Inches	Normal Width
1"	cut full size	3/4" & 13/16"	4" and Wider

Lengths 4' and longer, not to exceed 25% 8' and shorter. Multiples of one foot.

### 155-b. SIZE AND GRADE OF CUTTINGS

- (a) Cuttings 9-1/4" wide or wider and 18" or longer are clear on both sides - bright sap admitted.
- (b) Cuttings 4" and wider or 5" and wider, 3' or longer have a face equal to B & BTR INDUSTRIAL CLEARS (except that any amount of bright sap is admitted). Panel stock cuttings are graded under (a) above and are full to width ordered.

**155-c. SELECT SHOP.** Each piece contains 70% or more of 9-1/4" wide or wider cuttings, 18" long or longer or 5" wide or wider, 3' long or longer of (a) or (b) cuttings or both.

**155-d. NO. 1 SHOP.** Each piece contains 50% to 70% of 9-1/4" wide or wider cuttings, 18" long or longer or 4" wide or wider, 3' long or longer of (a) or (b) cuttings or both.

**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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**155-e. NO. 2 SHOP.** Each piece contains 33-1/3% to 50% of 9-1/4" wide or wider cuttings, 18" long or longer or 4" wide or wider, 3' long or longer of (a) or (b) cuttings or both.

**155-f. NO. 3 SHOP.** No. 3 shop is of factory lumber type admitting all pieces below the grade of No. 2 Shop that contains approximately 10% or more of mixed (a) and/or (b) cuttings and 30% or more of mixed sash cuttings or 50% of sash cuttings.

**DOOR STOCK**

**156. SIZES 1-3/8" and THICKER.**

Nominal Thickness Inches		Finished Thickness S2S Inches	Lengths
1-3/8"	cut full size	1-5/32"	<b>6' and longer multiples of 1'</b>
1-5/8"	cut full size	1-13/32"	
2"	cut full size	1-25/32"	
2-1/2"	cut full size	2-9/32"	
3"	cut full size	2-3/4"	
4"	cut full size	3-3/4"	

**156-a.** Rough 5" widths are not more than 1/8" scant in width when dry.

**156-b. DOOR CUTTINGS.** Stiles, for purposes of computing percentages of cuttings, are figured as 5" or 6" wide by 6'8" to 7'7" by odd inches in length, for 1-3/8" and 1-5/8" Shop; and 6'9" to 8'1", for 2" and thicker Shop.

Rails, 5", 6", 9", 10" or 12" in width, are figured in lengths from 23" to 37" in odd inches for 1-3/8" and 1-5/8" Shop and 25" to 47" for 2" and thicker Shop.

Muntins are 5" or 6" wide and from 3'6" to 4' in length.

In the following table, the board feet shown for each group of lengths is approximate and only for use by inspector when computing percentage of cuttings in a piece and is sufficiently accurate for all practical purposes:

**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

**STILES**

5" WIDTHS

6'8" to 6'10" — 2-3/4" 6'11" to 7'6" — 3'	7'7" to 8'1" — 3-1/4'
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6" WIDTHS

6'8" — 3-1/4' 6'9" to 7'3" — 3-1/2'	7'4" to 7'8" — 3-3/4' 7'9" to 8'1" — 4'
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**BOTTOM RAILS**

9" WIDTHS

1'11" to 2'2" — 1-1/2' 2'3" to 2'5" — 1-3/4' 2'6" to 2'10" — 2' 2'11" to 3'2" — 2-1/4'	3'3" to 3'6" — 2-1/2' 3'7" to 3'10" — 2-3/4' 3'11" and 4'0" — 3'
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10" WIDTHS

1'11" — 1-1/2' 2'0" to 2'3" — 1-3/4' 2'4" to 2'6" — 2' 2'7" to 2'10" — 2-1/4'	2'11" to 3'1" — 2-1/2' 3'2" to 3'5" — 2-3/4' 3'6" to 3'9" — 3' 3'10" to 4'0" — 3-1/4'
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12" WIDTHS

1'11" to 2'1" — 2' 2'2" to 2'4" — 2-1/4' 2'5" to 2'7" — 2-1/2' 2'8" to 2'10" — 2-3/4' 2'11" to 3'1" — 3'	3'2" to 3'4" — 3-1/4' 3'5" to 3'7" — 3-1/2' 3'8" to 3'10" — 3-3/4' 3'11" and 4'0" — 4'
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**MUNTINS**

5" WIDTHS

3'6" to 3'10" — 1-1/2'	3'11" and 4'0" — 1-3/4'
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6" WIDTHS

3'6" to 3'9" — 1-3/4'	3'10" to 4'0" — 2'
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**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

**TOP RAILS**

5" WIDTHS

1'11" to 2'1" — 3/4'	3'4" to 3'10" — 1-1/2'
2'2" to 2'8" — 1'	3'11" and 4'0" — 1-3/4'
2'9" to 3'3" — 1-1/4'	

6" WIDTHS

1'11" to 2'2" — 1'	3'3" to 3'8" — 1-3/4'
2'3" to 2'9" — 1-1/4'	3'9" to 4'0" — 2'
2'10" to 3'2" — 1-1/2'	

**DOOR CUTTINGS**

**157.** In determining the percentage of door cuttings in 1-3/8" and thicker stock, consideration is given to the fact that stock is to be ripped full length before crosscutting, in such manner as will yield the highest grade and largest percentage of door cuttings, except in such cases where stock will yield a higher value by first being crosscut for rails. In instances where stock is crosscut for rails and some of the stock so obtained contains stiles or muntins or top rails, which can be obtained by ripping this crosscut stock, the door cuttings so obtained are figured in when determining percentages. Where cutout knots occur, the computation of cuttings commences 1" from the nearest edge of knot. Imperfections, other than knots that will machine out, are permissible.

**157-a.** When 8" widths are ordered, the width of cuttings permitted in a grade is 7" to 8" instead of 5" to 6" for the purpose of computing percentages.

**157-b.** Three grades of Door Cuttings only are recognized: NO. 1, NO. 2 and NO. 3.

**157-c. NO. 1 CUTTINGS** have at least 8 annual growth rings per inch, excepting Sitka spruce. Slope of grain not to exceed 1 in 8. Will admit:

Light pink color.

Pitch or bark pocket - one small, not through.

**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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**157-d. NO. 2 CUTTINGS** have at least 6 annual growth rings per inch, excepting Sitka spruce. Slope of grain not to exceed 1 in 8. Will admit:

Firm stained wood and one of the following:

- (a) One small pocket, not through.
- (b) Two small pockets, not through, in a stile, if located within 20" of the ends.
- (c) One or more seasoning checks, none through, with a combined length of not more than 6".
- (d) Very light torn grain (1/64") on one side of piece.
- (e) Light pitch or pitch streaks that are not pronounced.

**157-e. NO. 3 CUTTINGS** will permit one of the following:

- (a) One 6" pocket, not through, for each 20" of length or equivalent of seasoning checks.
- (b) Medium pitch streaks.
- (c) Firm stain, other than black.
- (d) Light torn grain (1/32").

**SASH CUTTINGS**

**157-f. SASH CUTTINGS** contain at least 6 annual growth rings per inch and may have light pink color as well as very light (1/64") torn grain.

SASH CUTTINGS are 2-1/2", 3-1/2" and 4-1/2" wide by 28" and over in length.

**157-g. FACTORY SELECT.** Each piece contains 70% or more NO. 1 DOOR CUTTINGS.

Sizes and grades of cutting admissible in any combination are as follows:

- 5" and 6" Widths - Any number of No. 1 Stiles; one only No. 1 Top Rail; in pieces requiring three Stiles to get the necessary percentage of cuttings, one No. 2 Stile is allowed. Muntins are not permitted in this grade.

**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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10" and 12" Widths - Any number of No. 1 Stiles, one No. 1 Top Rail and two only No. 1 Bottom Rails are allowed. In pieces requiring three Stiles to get the necessary percentage of cuttings, one No. 2 Stile is allowed. Muntins are not permitted in this grade.

**157-h. NO. 1 SHOP.** Each piece contains 50% to 70% of Door Cuttings.

Sizes and grades of cuttings admissible are any of the following or combination thereof:

- (1) any number of No. 1 Stiles; (2) any number of No. 1 Rails 9", 10" and 12" wide; (3) two only No. 1 Muntins or No. 1 Top Rails; (4) one only No. 2 Stile allowed. Each 5" or 6" piece of this grade contains at least one Stile.

**157-i. NO. 2 SHOP.** Each piece contains not less than 25% No. 1 Door Cuttings, or 40% No. 2 Door Cuttings, or 60% No. 3 Door Cuttings, or 33 1/3% of No. 1 and No. 2 Door Cuttings combined. Any combination of Stiles, Rails or Muntins admissible except No. 1 Top Rails are figured as No. 2.

**157-j. NO. 3 SHOP or SASH** is of factory type lumber admitting all pieces below the grade of No. 2 Shop that contain approximately: 10% or more of mixed Door Cuttings and 30% or more of mixed Sash Cuttings, 50% of Sash Cuttings, or 40% No. 3 Door Cuttings.

**158-a. CUT DOOR STOCK - KD.** Cut to lengths and widths.

	Nominal Thicknesses Inches	Finished Thicknesses, 2S2 - Inches
	1-3/8" 1-5/8" 2"	1-5/32" 1-13/32" 1-25/32"
	Lengths	Widths
<b>Stiles</b> <b>Bottom Rails</b> <b>Top Rails</b> <b>Muntins</b>	6'7" to 8'1" 23" to 48" 23" to 48" 3'6" to 4"	5" to 8" 9" to 12" 5" and 6" 5" and 6"

**FACTORY LUMBER  
ALL WEST COAST SPECIES  
(EXCEPT CEDAR)**

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5" and 6" widths rough are not more than 1/8" scant in width when dry. Imperfections on faces and edges that will stick, tenon or sand out are permitted. Door stock shows on two sides, therefore the grade is determined from the poorer face.

**STILES, RAILS, TOP RAILS, NARROW  
LOCK RAILS AND MUNTINS**

**158-b. NO. 1** - Will admit:

Torn grain - very light (1/64") and one of the following: (see Notes)

Pitch or bark pockets - one 3" not through thickness nor into edge.

NOTE: In Stiles, pocket located 35" or less from end of Stile.

NOTE: In top and narrow lock rails and muntins, no pockets admitted.

**158-c. NO. 2** - Will admit:

Torn grain - very light (1/64") and one of the following or equivalent:

Seasoning checks - one or more with a combined length of not over 8".

Bark or pitch pockets - two 4", not through thickness nor into edge.

Pitch streak - small.

Stain - light, not over 50% of one side of piece.

**158-d. NO. 3** - Will admit:

Torn grain - light (1/32") and one of the following or equivalent:

Seasoning checks - one or more with a combined length of not over 8".

Bark or pitch pockets - two, not over 6" in length.

Pitch - light.

# FACTORY LUMBER WESTERN RED CEDAR SHOP

**159.** Factory lumber shall be measured for the percentage of cuttings which can be obtained from a piece of lumber by ripping or cross-cutting or both to obtain clear or virtually clear cuttings for use in joining or similar factory work.

## DRESSED THICKNESSES

**159-a.** The following thicknesses shall be considered standard. All other thicknesses shall be considered special.

Nominal Thickness Inches		Finished Thickness S2S Inches	Lengths
1"	cut full size	25/32"	<b>Lengths 4" and longer multiples of 1" Not more than 25% 8" and shorter</b>
1-3/8"	cut full size	1-5/32"	
1-5/8"	cut full size	1-13/32"	
2"	cut full size	1-25/32"	
2-1/2"	cut full size	2-9/32"	
3"	cut full size	2-3/4"	
4"	cut full size	3-3/4"	

## WIDTHS

Standard widths shall be 5" and wider, but permitting narrow widths if specified. Shop Lumber is usually shipped in random widths although specified widths may be supplied. Widths 6" and narrower shall not be more than 1/8" scant when dry; 8" and wider widths shall not be more than 1/4" scant when dry.

## SIZE OF CUTTINGS

- (a) 9-1/2" or wider, 18" or longer.
- (b) 5" or wider, 3' or longer.
- (c) A strip 2" or wider the length of the piece, or 12' or longer.
- (d) Full width cuttings only in 2", 3" and 4"—3' and longer.

**FACTORY LUMBER  
WESTERN RED CEDAR**

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**159-b. GRADE OF CUTTINGS**

No. 1 Cuttings in 1" and thicker stock shall be clear on both sides of the piece.

No. 2 Cuttings shall be the same size as No. 1, but will admit one of the following:

Checks - 1 or more small, whose combined length does not exceed 8".

Torn or raised grain - very light, on one side only.

Knots - one, tight 5/8".

**159-c. "SELECT SHOP."** Each piece contains 70% or more of No. 1 Cuttings.

**159-d. "NO. 1 SHOP."** No. 1 Shop shall be cutting stock containing not less than 50% of No. 1 Cuttings, or not less than 70% of No. 1 and No. 2 Cuttings of which there shall be not less than 25% of No. 1 Cuttings in each piece.

**159-e. "NO. 2 SHOP."** No. 2 Shop shall be cutting stock falling below No. 1 Shop and containing not less than 35% of No. 1 Cuttings, or not less than 55% of No. 2 Cuttings, or 45% of No. 1 and No. 2 Cuttings combined.

**159-f. "NO. 3 SHOP."** No. 3 Shop shall be of cutting stock admitting all pieces below the grade of No. 2 Shop that contain approximately 25% of No. 1 Cuttings, or 45% of No. 2 Cuttings, or 35% of No. 1 and No. 2 Cuttings combined.

## MOULDING STOCK ALL WEST COAST SPECIES

**161.** This grade to consist of stock developed in the making of other standard grades, each piece to be a type suitable for ripping into strips one inch and wider, 10 feet and longer.

Each piece to contain not less than  $\frac{2}{3}$  of its area of such rips of the grade permissible in standard mouldings.

Up to 10% of stock 6' to 9' may be included, provided each piece contains  $\frac{2}{3}$  of its area or more of full length moulding rips.

Wane, stain, skips in dressing or other characteristics that will surface off in making mouldings of standard size are admissible in computing the percentage of obtainable rips.

In rough  $\frac{4}{4}$  Moulding Stock, up to 10% of the material may be less than  $\frac{7}{8}$ " thick, provided  $\frac{5}{8}$ " mouldings can be manufactured from the thinner stock.

Rough Moulding Stock  $\frac{5}{4}$ " and thicker shall be the same thickness as other grades of Clears as provided in Para. 250 with reference to the table of surfaced sizes shown in Para. 250-e.

Moulding Stock thinner than these minimums shall be included and tallied as of the next lower thickness.

Excessive waste caused by massed pitch, shake, rot or wane due to improper trimming or edging, which creates a total loss of 10% or more of the area of the piece to the nearest square foot, shall be scaled off and such scale-off shall be marked on the piece.

**162.** Moulding grade description is based on a piece 1"x 2"-12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece. Standard lengths of Mouldings are 3' to 16' or longer in multiples of one foot with not over 15% under 8' in any one item. Each length under 8' is bundled separately.

There is only one grade of Mouldings: "MOULDINGS."

In addition to the following specific provisions applicable to Mouldings, the appropriate provisions in all other paragraphs in the rules apply.

## MOULDINGS, KD ALL WEST COAST SPECIES

**162-a. "MOULDINGS."** Mouldings of this grade are of sound wood and pieces are entirely clear or have only a few minor and unimportant characteristics, such as:

Medium stained wood, if otherwise high line.

Light torn or raised grain.

A short seasoning check.

Some pieces may have, in addition to the above, one of the following or its equivalent:

A small pitch streak. Two small pitch or bark pockets.

Two pin knots or one small knot.

Characteristics that will not show when the piece is laid are not given the same consideration as characteristics elsewhere.

Not more than 10% of the pieces in an item may have one cutout: any characteristic not larger than 4" at least 3' from either end which can be trimmed out of the piece is admissible if otherwise high line in random length shipments.

Stop patterns 7' in length shall be considered long lengths when figuring percentage of shorts.

The above paragraphs will apply to all finger-joint shipments. Patching and/or filling is allowed in finger-joint Mouldings if same produces a good paintable surface.

# LADDER AND POLE STOCK DOUGLAS FIR, WESTERN HEMLOCK (HEM-FIR) AND SITKA SPRUCE ROUGH OR SURFACED

**163.** Ladder and Pole Stock is well manufactured to the sizes ordered.

There is only one grade of Ladder and Pole Stock: "LADDER and POLE STOCK." The grade description is based on a piece 4" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

Lumber of this grade has not less than 6 annual rings per inch. The slope of grain may not exceed 1 in 15 except that 15% may have a slope of grain not to exceed 1 in 12.

In addition to the following specific provisions applicable to Ladder and Pole Stock, the appropriate provisions in all other paragraphs in the rules apply.

**163-a. "LADDER and POLE STOCK."** Most pieces of this grade are entirely clear or have only minor and unimportant characteristics such as:

Three very small pitch or bark pockets.

Burls - not over 1/4" in diameter.

Very light torn or raised grain.

## LADDER SIZES

Thickness Nominal	Thickness Surfaced	Widths Nominal	Widths Surfaced
1-1/4" to 1-1/2"	3/16" off	2-1/2" to 4"	3/8" off
1-5/8" to 1-3/4"	1/4" off	over 4"	1/2" off
2" to 4"	3/8" off		

Ladder Rails are customarily furnished in Douglas fir, Western hemlock (Hem-Fir) and Sitka spruce as ordered, but when specified, any other West Coast species may be graded under these rules.

**164.** Ladder Rails are well manufactured to sizes ordered and are practically straight, permitting only very light crook or bow in occasional pieces. Limitations on compression wood in these grades apply to the type that

# LADDER RAILS

## SEASONED AND SURFACED FOUR SIDES

is readily identifiable by visual inspection. Ladder Rails are dried to a maximum of 15% moisture content. Grade descriptions are based on a piece 3" wide. The number of characteristics in wider or narrower pieces may vary accordingly.

There are three grades of Ladder Rails: "VG LADDER RAILS," "FG or MG LADDER RAILS" and "LADDER RAIL STOCK."

In addition to the following specific provisions for Ladder Rails, the appropriate provisions in all other paragraphs in the rules apply.

**164-a. "VG LADDER RAILS."** Pieces of this grade are vertical grain and have an average rate of growth of 6 or more annual rings per inch. Slope of grain is limited to 1 in 12. Most pieces are entirely clear or have only minor or unimportant characteristics such as:

Torn grain - very light.

Burls - less than 1/2" in diameter.

Seasoning checks - small, one in any 3 linear feet.

Compression wood - a streak 1/2" wide or equivalent narrower streaks.

Pitch or bark pockets - very small, one in any 3 linear feet.

**164-b. "FG or MG LADDER RAILS."** Pieces of this grade may be Vertical, Flat or Mixed Grain at shipper's option unless otherwise specified. Slope of grain is limited to 1 in 12 and the rate of growth averages 6 or more rings per inch. Most pieces are clear or have only minor or unimportant characteristics such as:

Torn grain - very light.

Burls - less than 1/2" in diameter.

Seasoning checks - small, one in any 3 linear feet.

Compression wood - a streak 1/2" wide or equivalent narrower streaks.

Pitch or bark pockets - very small, one in any 3 linear feet.

## LADDER RAILS

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Pin knots, sound and tight, less than 1/2" in diameter and located 1/2" or more from the edges, are permitted on wide faces if not more frequent than one in any 3 linear feet.

**164-c. "LADDER RAIL STOCK" (VG, FG or MG)**  
Pieces of this grade have one or more characteristics which are of size or number that the pieces are not of the "LADDER RAIL" grade, but are suitable for use in shorter components.

Characteristics and limiting provisions are:

Torn grain - light.

Very light skips on occasional pieces.

Seasoning checks - two small (6") in any 3 linear feet.

Splits - short in 5% of the pieces.

Stained wood - firm, medium.

Slope of grain - 1 in 10.

Compression wood - narrow streaks, with the aggregate not to exceed 1/4 the volume of the piece.

Burls - less than 1/2" in diameter.

Pitch or bark pockets - small, one in any 3 linear feet.

Pin knots, sound and tight, less than 1/2" in diameter and located 1/2" or more from the edges are permitted on wide faces if not more frequent than one in any 3 linear feet.

A 3" cutout is permissible in 10% of the shipment if the resultant pieces are 3' long or longer and meet the provisions of "LADDER RAIL STOCK."

All or nearly all of the permissible characteristics of the grade are never present in maximum size or number in any one piece. Any piece with an unusual combination of characteristics which seriously affects normal serviceability is excluded from the grade.

## TANK STOCK DOUGLAS FIR AND WESTERN RED CEDAR

**167.** Tank Stock is well manufactured to full sizes ordered. Edges do not contain characteristics that will prevent a watertight joint when worked. The slope of grain is not more than 1 in 8. Pieces average 8 or more annual growth rings per inch at either one end or the other.

No sapwood is permitted in any thickness.

There are two grades of Tank Stock: "UNDER FOUR INCH" and "FOUR INCH and THICKER."

Grade descriptions are based on a piece 6" wide and 12' long, FG and/or VG. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

In addition to the following specific provisions applicable to Tank Stock, the appropriate provisions in all other paragraphs in the rules apply.

**167-a. "UNDER FOUR INCH" - TANK STOCK.** Most pieces of this grade are entirely clear or have only a few minor and unimportant characteristics, such as:

Medium seasoning checks, none through.

Two small pitch or bark pockets, none through.

Two small, sound, tight knots, none through.

One additional pocket and/or knot for each two additional inches in width.

**167-b. "FOUR INCH and THICKER" - TANK STOCK.** Pieces of this size may have a few characteristics which do not affect utility, such as:

Medium seasoning checks, none through.

Three medium pitch or bark pockets, none through.

Three sound, tight knots, 1" in 4" thickness to four 2" in 12" thickness.

One additional pocket and/or knot for each two additional inches in width.

## TANK STOCK DOUGLAS FIR AND WESTERN RED CEDAR

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Reverse side and corresponding half of narrow face may have:

Four sound, tight knots, 1" in size in 4" thickness to three 2" in 12" thickness. Through knots are intergrown on one face.

Four medium pitch or bark pockets, none through.

### PIPE STAVE STOCK DOUGLAS FIR

**168.** Douglas fir Pipe Stave Stock is well manufactured to full sizes ordered. Edges do not contain characteristics that will prevent a watertight joint when worked.

There is only one grade of Pipe Stave Stock: "PIPE STAVE STOCK."

Grade descriptions are based on a piece 2" by 6" by 12', FG and/or VG. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

In addition to the following specific provisions applicable to Pipe Stave Stock, the appropriate provisions in all other paragraphs in the rules apply.

**168-a. "PIPE STAVE STOCK."** Pieces may have a few minor and unimportant characteristics such as:

Bright sapwood for not more than one-half the thickness from the inside of the piece.

Sound, tight 1" knots, none through.

Small pitch pockets, none through.

# TRANSMISSION CROSSARMS, PLANKS AND TIMBERS DOUGLAS FIR

3" to 8" Thick  
6" and Wider

**169.** There is only one grade of Transmission Crossarms, Planks and Timbers: "SELECT STRUCTURAL."

## **169-a. "SELECT STRUCTURAL" - TRANSMISSION CROSSARMS, PLANKS and TIMBERS.**

Characteristics and limiting provisions are:

Stained sapwood.

FOHC (side cut) as specified in Para. 714-c.

Warp - 1/2" per 10' of length permitted.

Very short splits.

Seasoning checks 1/4 the thickness of piece if not opposite each other; if opposite, combinations equal to above depth.

Medium torn grain.

Close grain as specified in Para. 204-b.

Slope of grain, spiral or diagonal, as specified in Para. 203:

Plank sizes (3" and 4" thickness):

1 in 12 full length of piece.

Timber sizes (5" and thicker):

1 in 15 in center 2/3 of length.

1 in 12 at ends.

Skips in dressing - light if not opposite each other.

Medium pitch pockets.

Medium pitch streaks.

Wane approximately 1/16 of any face.

Knot holes and/or tool cuts approximately 1/2" in 4" to 6" widths; 3/4" in 8" and wider.

Knots, sound, tight and well spaced if not in clusters. When two or more knots on a face occur in the same cross section (opposite each other), the sum of the diameters shall not exceed the size of the maximum size knot permitted.

**TRANSMISSION CROSSARMS,  
PLANKS AND TIMBERS  
DOUGLAS FIR**

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**ALLOWABLE KNOT SIZES**

Dimension Sizes: (3" and 4" Planks only)

Nominal Width of Face	On Narrow Face	At Edge of Wide Face, Middle 1/2 of Length	Elsewhere
3"	5/8"		
4"	3/4"		
6"		1"	1-1/2"
8"		1-3/8"	1-7/8"
9"		1-3/4"	2-1/4"
10"		1-3/4"	2-1/4"
12"		2"	2-1/2"

**6** Timber Sizes: (5" and thicker only)

Nominal Width of Face	On Narrow Face Full Length. At Edge of Wide Face, Middle 1/2 of Length	Elsewhere
5"	1"	
6"	1-1/4"	
8"	1-1/2"	1-7/8"
9"		2-1/4"
10"		2-1/4"
12"		2-1/2"

Increase in knot sizes:

The size of knots specified at the edge of the wide face in the middle 1/2 of the length may increase proportionately toward the center of the width of the piece and toward the ends to the size permitted along the center line of the wide face.

Measurement of knots:

**General** – The sum of the diameters of all knots in any 6" of length must not exceed twice the diameter of the largest knot permitted. More than one knot of maximum permissible size must not be in the same 6" of length.

**TRANSMISSION CROSSARMS,  
PLANKS AND TIMBERS  
DOUGLAS FIR**

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**Method of Measurement** – Knots extending from narrow faces to the adjacent 1/4 width of the wide faces are measured on the wide face only. If extending past the adjacent 1/4 the width of the wide face, the knot is measured both on the narrow face and the wide face. All knots to be measured on the least dimension of the knot.

**CROSSARMS, DOUGLAS FIR AND  
WESTERN HEMLOCK (HEM-FIR)  
ROUGH OR SURFACED**

**170.** Rough stock must be sawn full to sizes ordered, free of heart centers (FOHC) and close grain. Grade descriptions are based on 3"x4" to 4"x6" by 8' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece. The best narrow face shall be considered the top of the arm.

There is only one grade of Crossarms:  
“CROSSARMS.”

In addition to the following specific provisions applicable to “CROSSARMS,” the appropriate provisions in all other paragraphs in the rules apply.

**170-a. “CROSSARMS.”**

Characteristics and limiting provisions are:

Crook or bow - 1/2".

Medium stained sapwood.

Seasoning checks - small on top of arm, medium on other faces.

Pin holes - scattered, 10% of girth.

Medium torn grain.

Slope of grain limited to 1 in 12 except that 20% of the pieces may have a slope of grain not to exceed 1 in 10.

Medium pitch streak.

Skips - one light or equivalent very light.

Knots - pin knots - 3/8" or less not considered.

## CROSSARMS, DOUGLAS FIR AND WESTERN HEMLOCK (HEM-FIR)

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Top of arm - two 3/4" knots or equivalent smaller, well spaced.

Other faces - four 1" knots or equivalent smaller, well spaced.

Occasional pieces may have one additional knot, and knots may be 25% larger.

Pitch or bark pockets.

Top of arm - two small or equivalent smaller.

Other faces - three medium or equivalent smaller.

Wane - 1" on rough, 1/2" on S4S, measured across corner.

Minor surface characteristics equivalent to 1/3 the size of knots are permitted.

Cutouts - an occasional piece 18' or longer may contain one large characteristic which can be removed by crosscutting. The shortest piece of Crossarms grade will be 8' or longer. Limit of waste is 2 lineal feet.

# SCAFFOLD PLANK DOUGLAS FIR

1-1/4" to 3" Thick 8" and Wider

Sitka spruce, Western hemlock, and HEM-FIR may also be graded under these rules. Appropriate stress values are provided in Para. 200.

**171.** Douglas fir Scaffold Plank is well manufactured. The grade is determined from the poorer face. On wide faces, the average of the maximum and minimum dimensions of the end section of a knot shall be used in measuring the size except that knots located at the edges of wide faces and spiked across the adjacent narrow face are measured between lines parallel to the edge on the wide face. Pieces are FOHC (side cut).

There are two grades of Scaffold Plank: "PREMIUM" and "SELECT STRUCTURAL."

In addition to the following specific provisions applicable to Scaffold Plank, the appropriate provisions in all other paragraphs in the rules apply.

For stress values, see Table 8, Para. 200.

**171-aa. "DENSE PREMIUM" - SCAFFOLD PLANK** (Douglas fir only). Conforms to all the provisions of Para. 171-a with the additional requirement of density as defined in Para. 204-c.

**171-a. "PREMIUM" - SCAFFOLD PLANK.**

Characteristics and limiting provisions are:

Very short splits.

Surface seasoning checks. If through at ends, equivalent to splits.

Close grain.

Slope of grain not more than 1 in 15.

Small pitch pockets, well scattered.

Small pitch streaks.

Medium stained sapwood.

## SCAFFOLD PLANK DOUGLAS FIR

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Knots, sound, tight and well spaced, are permitted in the following approximate sizes:

Face Width	Knot Size
8"	1"
9"	1"
10"	1-1/4"
12"	1-1/2"

Knots occurring within 1/4 the width from the edge on wide faces and extending into the adjacent narrow face are considered as wide face knots. Otherwise, knots showing on narrow faces are not permitted.

**171-bb. "DENSE SELECT STRUCTURAL" - SCAFFOLD PLANK** (Douglas fir only). Conforms to all the requirements of Para. 171-b. with the additional requirement of density as defined in Para. 204-c.

**171-b. "SELECT STRUCTURAL" - SCAFFOLD PLANK.**

Characteristics and limiting provisions are:

Very short splits.

Surface seasoning checks. If through at ends, equivalent to splits.

Close grain.

Slope of grain not more than 1 in 12.

For nominal 2" scaffold surfaced to standard ALS sizes, slope of grain cannot be more than 1 in 14.

Medium pitch pockets.

Medium pitch streaks.

Medium stained sapwood.

## SCAFFOLD PLANK DOUGLAS FIR

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Knots, sound, tight and well spaced, may be present in the following approximate sizes:

Face Width	Knot Size
8"	1-5/8"
9"	1-3/4"
10"	1-7/8"
12"	2-3/8"
14"	2-1/2"
16"	2-5/8"

Knots on narrow faces are permitted if displacing no more of the cross section than knots permitted on wide faces. Knots spiked across the width are not permitted.

Chipped or sloughed knots on a wide face extending into or across a narrow face are permitted if not larger than 1" in size and if not through the thickness. One wide face must be free of holes on the corners.

# STADIUM PLANKS ALL WEST COAST SPECIES

## ROUGH OR SURFACED

1-1/4" to 3" Thick, 4" and Wider

**172.** Lumber of this grade is recommended and widely used for outdoor seating and walkway boards for bleachers and stadiums.

It is recommended that Stadium Planks furnished in resinous species such as Douglas fir and Sitka spruce be kiln dried. Temperatures used in kiln schedules should be sufficient to set the pitch, preventing any bleeding of resin in use.

Stadium Planks are well manufactured and are FOHC.

Except for characteristics affecting strength, the grade is determined from the best face and best edge; the reverse side and edge may contain characteristics as noted.

Wood plugs and fillers as described in Para. 736 are permitted.

For flatwise bending values, see Table 9, Para. 200.

There is only one grade of Stadium Planks:  
"STADIUM PLANKS."

### **172-a. "STADIUM PLANKS."**

Characteristics and limiting provisions are:

Short splits.

Medium stained sapwood. Heart stain firm.

Medium seasoning checks. If through at ends, limit as splits.

Medium torn or raised grain.

Medium grain.

Slope of grain not to exceed 1 in 10 (1 in 14 if specified).

Medium bark or pitch pockets.

Small pitch streak.

Warp - light.

Knots, sound, tight and well spaced, are limited to the following approximate sizes:

## STADIUM PLANKS ALL WEST COAST SPECIES

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Face Width	Knot Size
4"	1"
6"	1-1/2"
8"	2"
10"	2-1/2"
12" and wider	3"

Knots on narrow faces and spike knots are permitted if displacing no more of the cross section than knots specified on wide faces.

One wide face and edge must be free of holes, skip and wane; the other face and edge may contain sloughed knots if not through, wane 1" wide and 1/2 the thickness, hit and miss skips, large seasoning checks and pockets, heavy torn or raised grain.

Under these rules, "STADIUM PLANKS" are not grade stamped. Certificates of inspection will be furnished on request, clearly stating the conditions of seasoning and the limitation applied on slope of grain.

## BARGE FRAMING, PLANKING AND DECKING DOUGLAS FIR

**173.** Douglas fir Barge Framing, Planking and Decking are well manufactured and square edged.

There are two grades of Barge Framing, Planking and Decking: "BARGE FRAMING" and "BARGE PLANKING and DECKING."

Where stock is run with caulking seam, caulking stock is beveled  $\frac{3}{32}$ " by a depth of  $\frac{1}{3}$  thickness of piece, thus providing for a caulking seam of  $\frac{3}{16}$ ", unless otherwise specified.

In addition to the following specific provisions applicable to Barge Framing and Barge Planking and Decking, the appropriate provisions in all other paragraphs in the rules apply.

### **173-a. "BARGE FRAMING."**

Characteristics and limiting provisions are:

Seasoning checks.

Medium pitch pockets.

Bright sapwood limited to approximately  $\frac{1}{4}$  the width and not to exceed  $\frac{1}{4}$  the thickness.

Knots, sound, tight, approximately:

Face Width	Knot Size
6"	1-1/2"
8"	2"
10"	2-1/2"
12"	3"
14"	3-1/2"
16"	4"
Over 16"	4-1/2"

Knots extending into caulking seam are intergrown on one surface of the piece.

**BARGE FRAMING, PLANKING  
AND DECKING  
DOUGLAS FIR**

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**173-b. "BARGE PLANKING and DECKING."** 4"  
and less in thickness is FOHC (side cut).

Characteristics and limiting provisions are:

Seasoning checks.

Medium pitch pockets.

Bright sapwood limited to approximately 1/4 the width and not to exceed 1/4 the thickness. Knots, sound, tight, approximately:

Face Width	Knot Size
3"	1"
4"	1"
6"	1-1/4"
8"	1-1/2"
10"	2"
12" and wider	2-1/2"

Knots extending into caulking seam are intergrown on one surface of the piece.

## SHIP DECKING DOUGLAS FIR

**175.** Douglas fir Ship Decking is full sawn and free from knots on face and upper half of edges. Flat sizes are VG on broad face.

Grade descriptions are based on a piece 4" wide. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There are two grades of Ship Decking: "SHIP DECKING" and "C SHIP DECKING."

In addition to the following specific provisions applicable to Ship Decking, the appropriate provisions in all other paragraphs in the rules apply.

### **175-a. "SHIP DECKING."**

Characteristics and limiting provisions are:

Slope of grain not more than 1 in 10.

One pitch pocket not to exceed 3" in length for each 12 lineal feet.

Bright sapwood on face side, 1/4 the width or equivalent and 1/2 the thickness on narrow face.

Reverse side and lower half of edges may have:

Sound, tight knots - 1" or less in diameter, and/or small pitch pockets.

### **175-b. "C SHIP DECKING."**

Characteristics and limiting provisions are:

Three small pitch pockets to each 12 lineal feet.

Bright sapwood approximately 1/3 width on either or both faces.

Reverse side and lower half of edges may have:

Sound, tight knots - 1-1/2" or less in diameter, and/or small to medium pitch pockets.

Up to 20% of the pieces 20' or longer in a shipment may contain one cutout which can be eliminated by wasting not more than 5% of the length of such piece with resulting pieces being 8' or longer.

## MARGIN PLANK DOUGLAS FIR

**176.** Douglas fir Margin Plank is full sawn and free from knots on wide face and corresponding half of thickness of narrow faces. Pieces are VG for at least 70% of width of face.

The grade description is based on a piece 8" wide and 12' long.

The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There is only one grade of Margin Plank: "MARGIN PLANK."

In addition to the following specific provisions applicable to Margin Plank, the appropriate provisions in all other paragraphs in the rules apply.

### **176-a. "MARGIN PLANK."**

Characteristics and limiting provisions are:

Slope of grain not more than 1 in 10.

Two small pitch pockets.

Bright sapwood approximately 1/4 width of face and corresponding 1/2 the thickness of narrow face.

Reverse side and corresponding half of thickness of narrow faces may have:

Knots - 1" or less in diameter and/or medium pitch pockets.

## SHIP PLANK DOUGLAS FIR ROUGH

**177.** Douglas fir Ship Plank is used for outboard planking, garboards, wales, clamps, rails and similar purposes. Pieces 4" and less in thickness are FOHC (side cut).

There is only one grade of Ship Plank: "SHIP PLANK."

In addition to the following specific provisions applicable to Ship Plank, the appropriate provisions in all other paragraphs in the rules apply.

## SHIP PLANK DOUGLAS FIR

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### 177-a. "SHIP PLANK."

Characteristics and limiting provisions are:

Small pitch pockets not extending through the piece.

Small, sound, tight knots not extending into caulking seam edge.

Bright sapwood on face side, 1/4 width or its equivalent and 1/2 the thickness.

Characteristics are considered in connection with size and length of piece and its quality otherwise.

## MAST, SPAR AND BOAT LUMBER SITKA SPRUCE

**178.** Sitka spruce Mast, Spar and Boat Lumber, FG and/or VG, is well manufactured and FOHC. The grade description is based on a piece 8" wide and 12' long. Averages not less than five rings of annual growth to the inch on either one end or the other of the piece. Slope of grain not to exceed 1 in 10.

In addition to the following specific provisions applicable to Mast, Spar and Boat Lumber, the appropriate provisions in all other paragraphs in the rules apply.

### 178-a. "ONE TO TWO INCH."

Characteristics and limiting provisions are:

Four small seasoning checks.

Three very small pitch pockets.

Bright sapwood 1/3 width or equivalent in flat grain, and 1/3 width on both faces in vertical grain or equivalent.

Short splits in not more than 5% of the pieces.

And on reverse side:

Four small pitch pockets or equivalent slightly larger.

Two small knots or equivalent pin knots.

## MAST, SPAR AND BOAT LUMBER SITKA SPRUCE

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**178-b. TWO AND ONE-FOURTH INCH AND THICKER.** Characteristics and limiting provisions on wide face and corresponding half of narrow faces are the following or equivalent:

Six small seasoning checks in 2-1/4" thickness to six medium in 6" and thicker.

Three small pitch pockets in 2-1/4" thickness to four in 4" and thicker.

Bright sapwood 1/3 width or equivalent in flat grain and 1/3 width on both faces in vertical grain or equivalent.

Short splits in not more than 5% of pieces.

And on reverse side and corresponding half of narrow faces:

Three 1" knots in 2-1/4" thickness to three 2" knots in 12" thickness.

Four medium pitch pockets.

# RAILWAY AND CAR MATERIAL DOUGLAS FIR FRAMING AND TIMBERS ROUGH OR SURFACED

2" and Thicker  
3" and Wider

**182.** In sizes 4" or less in thickness, round or oval knots on wide faces are measured on the least dimension of the end section of the knot. Narrow face knots are permitted if displacing no more of the cross section than knots permitted on wide faces. Spike knots are permitted if judged to have no more effect than other knots. In sizes 5" and thicker, knots are measured as illustrated in Para. 201-c and 201-d.

**182-a. "SELECT STRUCTURAL" - FRAMING and TIMBERS.** Are of sound wood and free of wane.

Characteristics and limiting provisions are:

Medium stained sapwood, approximately 25% of face.

Seasoning checks.

Medium torn grain.

Close grain.

Slope of grain not more than 1 in 15.

Occasional light skips, not opposite each other.

Medium pitch pockets.

Knots, sound and tight, not in clusters, approximately:

Face Width	Knot Size
3"	1"
4"	1"
6"	1-1/4"
8"	1-1/2"
10"	1-3/4"
12"	2"
Over 12"	2-1/2"

## RAILWAY AND CAR MATERIAL DOUGLAS FIR

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### 182-b. "SELECTED" - FRAMING and TIMBERS.

Are of sound wood and free of wane. Pieces of this grade may have characteristics such as:

Medium stained sapwood, 25% of face.

Seasoning checks.

Medium torn grain.

Occasional light skips, not opposite each other.

Medium pitch pockets.

Knots, sound and tight, not in clusters, approximately:

Face Width	Knot Size
3"	1"
4"	1"
6"	1-1/4"
8"	1-1/2"
10"	1-3/4"
12"	2"
Over 12"	2-1/2"

**182-c. "NO. 1" - FRAMING and TIMBERS.** Are of sound wood. Pieces of this grade may have characteristics such as:

Medium stained sapwood. Heart stain firm.

Seasoning checks.

Torn grain.

Occasional light skips, not opposite each other.

Short splits.

Pitch pockets.

Slight wane.

## RAILWAY AND CAR MATERIAL DOUGLAS FIR

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Knots, sound and tight, not in clusters, approximately:

Face Width	Knot Size
3"	1-1/2"
4"	1-1/2"
6"	1-3/4"
8"	2"
10"	2-1/2"
12"	3"
Over 12"	3-1/2"

# CAR DECKING DOUGLAS FIR

## ROUGH OR SURFACED

1-1/2" to 4" Thick  
4" to 12" Wide

**183.** Douglas fir Car Decking is well manufactured. Surfaced sizes and patterns are subject to special contract.

Grade descriptions are based on a piece 1-1/2" by 6" by 9'. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There are four grades of Car Decking: "B&BTR", "C", "SELECTED" and "NO. 1."

In addition to the following specific provisions applicable to Car Decking, the appropriate provisions in all other paragraphs in the rules apply.

**183-b. "B & BTR" CAR DECKING, VG or FG.** If specified VG, angle of grain is not more than 45 degrees from vertical.

Pieces of this grade may have characteristics such as:

Light stained wood.

Light torn grain.

With the above, one of the following or its equivalent:

Three small seasoning checks, none through.

Three small pitch pockets or one medium, none through.

Occasional light skips on back if specified S2S.

**183-c. "C" CAR DECKING, VG or FG.** If specified VG, angle of grain is not more than 45 degrees from vertical.

Pieces of this grade may have characteristics such as:

Medium stained wood. Heart stain firm.

Medium torn grain.

Very light skips.

With the above, one of the following or its equivalent:

Small seasoning checks or a few 8" checks, none through.

Five small pitch pockets or equivalent larger, none through.

## CAR DECKING DOUGLAS FIR

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Four small, sound, intergrown knots.

Occasional light skips on back if specified S2S.

### **183-d. “SELECTED” (grain tight) CAR DECKING, see Para. 713.**

Pieces of this grade may have characteristics such as:

Stained wood.

Seasoning checks.

Medium torn grain.

Very light skips.

Medium pitch pockets, none through.

Sound, intergrown knots, approximately 1/4 the width of piece.

Occasional light skips on back if specified S2S.

### **6 183-e. “NO. 1” CAR DECKING.**

Pieces of this grade may have characteristics such as:

Stained wood.

Seasoning checks.

Heavy torn grain.

Very light skips.

Large pitch pockets, none through.

Sound and tight knots approximately 1/3 width of piece.

Occasional light skips on back if specified S2S.

## CAR FRAMING DOUGLAS FIR

1" to 2" Thick  
VG and/or FG

**184.** If specified VG, angle of grain is not more than 45 degrees from vertical.

If Air Dried or Kiln Dried must be so specified.

Grade descriptions are based on a piece 6" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There are two grades of 1" and 2" thick Car Framing: "B&BTR" and "C."

In addition to the following specific provisions applicable to Car Framing, the appropriate provisions in all other paragraphs in the rules apply.

### **184-b. "B & BTR" CAR FRAMING.**

Pieces of this grade may have characteristics such as:

Bright sapwood 1/3 the width of face in unseasoned stock.

Very light torn grain.

With the above, one of the following or its equivalent:

Three small seasoning checks.

Three small pitch pockets, none through.

Three sound, intergrown pin knots.

Occasional light skips on back if specified S2S.

### **184-c. "C" CAR FRAMING.**

Pieces of this grade may have characteristics such as:

Medium stained wood, 25% of face.

Light torn grain.

With the above, one of the following or its equivalent:

Small seasoning checks.

Five small pitch pockets or equivalent slightly larger.

Small pitch streak.

Three sound and tight 1" knots or equivalent pin knots.

Occasional light skips on back if specified S2S.

## CAR FRAMING DOUGLAS FIR

2-1/2" and Thicker  
VG and/or FG

**185.** If specified VG, angle of grain is not more than 45 degrees from vertical.

If Air Dried or Kiln Dried must be so specified.

Grade descriptions are based on a piece 6" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There are two grades of 2-1/2" and thicker Car Framing: "B&BTR" and "C."

In addition to the following specific provisions applicable to Car Framing, the appropriate provisions in all other paragraphs apply.

### **185-b. "B & BTR" CAR FRAMING.**

Pieces of this grade may have characteristics such as:

Bright sapwood 1/3 the width of face in unseasoned stock.

Light torn grain.

With the above will admit on face and adjacent half of edges one of the following or equivalent:

Three small seasoning checks.

Three 6" pitch pockets or equivalent smaller, none through.

Three small, sound and tight knots.

Occasional light skips on back if specified S2S.

### **185-c. "C" CAR FRAMING.**

Pieces of this grade may have characteristics such as:

Medium stained wood, 25% of face.

Light torn grain.

With the above will admit on face and adjacent half of edges one of the following or equivalent:

Small seasoning checks.

Five 6" pitch pockets or equivalent smaller.

Medium pitch streak.

## CAR FRAMING DOUGLAS FIR

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Three medium sound and tight knots or equivalent smaller knots.

Occasional light skips on back if specified S2S.

## CAR LINING DOUGLAS FIR

VG and/or FG

**186.** If specified VG, angle of grain is not more than 45 degrees from vertical.

If Air Dried or Kiln Dried must be so specified.

Grade descriptions are based on a piece 4" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

There are three grades of Car Lining: "B&BTR", "C" and "SELECTED."

In addition to the following specific provisions applicable to Car Lining, the appropriate provisions in all other paragraphs of the rules apply.

### **186-b. "B & BTR" CAR LINING, VG or FG.**

Pieces of this grade may have characteristics such as:

Light stained wood.

Very light torn or raised grain.

Warp - light.

With the above, one of the following or its equivalent:

## CAR LINING DOUGLAS FIR

VG and/or FG

Four small seasoning checks, none through.

Four small pitch or bark pockets, none through.

Three sound, intergrown pin knots.

Occasional light skips on back if specified S2S.

### 186-c. "C" CAR LINING, VG or FG.

Pieces of this grade may have characteristics such as:

Medium stained sapwood. Heart stain firm.

Medium torn or raised grain.

Very light skips.

Warp - light.

With the above, one of the following or its equivalent:

Small seasoning checks.

Five small to medium pitch or bark pockets, none open through.

Three small, sound intergrown knots or equivalent pin knots.

Occasional light skips on back if specified S2S.

**186-d. "SELECTED" (grain tight) CAR LINING, see Para. 713.** Pieces of this grade may have the following characteristics or their equivalent:

Stained wood.

Seasoning checks.

Torn grain.

Very light skips.

Medium pitch or bark pocket, none open through.

Warp - light.

Sound, intergrown knots approximately 1" in 4" widths and 1-1/2" in 6" widths.

Occasional light skips on back if specified S2S.

## **RUNNING BOARD DOUGLAS FIR**

VG and/or FG

**191.** If specified VG, angle of grain is not more than 60 degrees from vertical.

Running Boards are usually shipped unseasoned. If Air Dried or Kiln Dried must be so specified.

Grade descriptions are based on a piece 6" wide and 12' long. The number of characteristics in larger or smaller pieces may vary in proportion to the size of the piece.

Running Boards ordered SIS are graded from the rough face.

There are two grades of Running Boards: "B&BTR" and "C."

In addition to the following specific provisions applicable to Running Boards, the appropriate provisions in all other paragraphs in the rules apply.

**191-b. "B & BTR" RUNNING BOARDS, VG or FG.**

Pieces of this grade may have characteristics such as:

Sapwood - 25% of the face.

With the above, one of the following or its equivalent:

Three small seasoning checks.

Three small pitch pockets.

**191-c. "C" RUNNING BOARDS, VG or FG.**

Pieces of this grade may have characteristics such as:

Medium stained sapwood.

With the above, one of the following or its equivalent:

Three small seasoning checks.

Five small pitch pockets.

Three sound, tight 1" knots, if located away from edges.

## RAILROAD TIES ALL WEST COAST SPECIES

**192.** Railroad Ties are of sound wood and are well manufactured.

There are three grades of Railroad Ties: "SELECT", "NO. 1" and "NO. 2."

In addition to the following specific provisions applicable to Railroad Ties, the appropriate provisions in all other paragraphs of the rules apply.

**192-a. "SELECT" RAILROAD TIES.** They are square edged. Pieces shall have not less than 6 annual rings per inch, on any radius from the pith, over the top 1/4 of the tie.

Pieces of this grade may have characteristics such as:

Seasoning checks.

Pitch pockets.

Stained wood.

Sound and tight knots, approximately 1/4 the width of face.

Tolerance in size 1/8" under or 1/2" over.

Tolerance in length 1" under or over.

**192-b. "NO. 1" RAILROAD TIES.**

Pieces of this grade may have characteristics such as:

Stained wood.

Seasoning checks.

Pitch pockets.

Wane which does not reduce face width more than 1" or equivalent.

Sound, tight knots approximately 1/3 the width of face.

Tolerance in size 1/8" under or 1/2" over.

Tolerance in length 1" under or over.

**RAILROAD TIES**  
**ALL WEST COAST SPECIES**

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**192-c. "NO. 2" RAILROAD TIES.** Pieces of this grade are free of decay and suitable for side track purposes and may have characteristics such as:

Stained wood.

Seasoning checks.

Pitch pockets.

Shake.

Wane which does not reduce face width more than 2" or equivalent.

Large knots.

Tolerance in size 1/2" under or over.

Tolerance in length 2" under or over.