



# **STANDARD GRADING RULES**

## **for**

# **CANADIAN LUMBER**

SUPERSEDES ALL EDITIONS,  
REVISIONS AND SUPPLEMENTS  
PREVIOUS TO JAN. 1, 2014

**Approved by**  
**American Lumber Standard Committee**  
**Board of Review**  
**and**  
**Canadian Lumber Standards**  
**Accreditation Board**

**Effective January 1, 2014**

© **National Lumber Grades Authority - 1971, 1973, 1975, 1978, 1979, 1980, 1984, 1987, 1990, 1991, 1993, 1994, 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007, 2010, 2014**

**“All rights reserved”** No part of this publication may be reproduced or stored in any material form (including photocopying, storing it in any medium by electronic means whether or not transiently or incidentally to such use of this publication) without the written permission of the copyright holder except in accordance with the provisions of the **Copyright Act**. Applications for the copyright holder’s written permission to produce any part of this publication must be addressed to the copyright holder.

**Warning:** *the doing of any unauthorized act in relation to a copyrighted work may result in both civil claim for damages and criminal prosecution.*

## PREFACE

---

The National Lumber Grades Authority (NLGA) was incorporated under Federal Charter on January 12, 1971, as the organization responsible for writing and maintaining Canadian lumber grading rules.

The NLGA rule is approved and enforced by the Canadian Lumber Standards Accreditation Board (CLSAB) and by the American Lumber Standard Committee (ALSC) Board of Review. This approval enables acceptance under Canadian and US building codes.

The National Grading Rule for all North American dimension lumber 2" to 4" thick, as developed by the National Grading Rule Committee\*, is incorporated into the NLGA Rule. The National Grading Rule establishes standard lumber grades and grade names, assuring users of uniform design and performance for all commercial species of dimension lumber.

**Note:** *The ALSC Board of Review does not approve design values for use in Canada and the Canadian Lumber Standards Accreditation Board does not approve design values for use in the U.S.A.*

The membership of NLGA consists of the lumber manufacturers' associations and independent grading agencies in Canada that have been accredited by the CLSAB and by the ALSC Board of Review. A list of members and facsimiles of their grade stamps are given on pages 232-237 inclusive.

*\* A committee authorized under the U.S. Department of Commerce Voluntary Product Standard 20 with Canadian representation.*

## SECTION INDEX

<b>GENERAL PROVISIONS</b> .....	Pages 7 - 20	<b>1</b>
<b>UPPERS</b> .....	Pages 22 - 33	<b>2</b>
<b>BOARDS</b> .....	Pages 35 - 59	<b>3</b>
<b>NATIONAL GRADING RULE</b> .....	Pages 61 - 75	<b>4</b>
<b>EXTERIOR PATIO DECKING, DECKING, MACHINE GRADED LUMBER, GLUED LUMBER, BEAMS &amp; STRINGERS, POSTS &amp; TIMBERS</b> .....	Pages 76 - 98	<b>5</b>
<b>SPECIALTY ITEMS</b> .....	Pages 100 - 152	<b>6</b>
<b>WESTERN RED CEDAR</b> .....	Pages 154 - 170	<b>7</b>
<b>STRESS GRADES</b> .....	Pages 172 - 173	<b>8</b>
<b>STRESS GRADE MEASUREMENTS</b> .....	Pages 174 - 181	<b>9</b>
<b>RE-INSPECTION</b> .....	Pages 184 - 193	<b>10</b>
<b>GLOSSARY</b> .....	Pages 195 - 212	<b>11</b>
<b>TABLES &amp; ABBREVIATIONS</b> .....	Pages 213 - 230	<b>12</b>
<b>GRADE STAMP FACSIMILES</b> .....	Pages 232 - 237	<b>13</b>
<b>PATTERNS</b> .....	Pages 239 - 246	<b>14</b>
<b>METRIC CONVERSION TABLES</b> .....	Page 247	<b>15</b>
<b>DESIGN VALUES FOR U.S.A</b> .....	Pages 249 - 272	<b>16</b>
<b>NLGA INTERPRETATIONS &amp; EU EXPORT ANNEX</b>		

## INDEX OF GRADES BY PARAGRAPH

	All Species	Douglas Fir	Red & White Pine	W. Hem Hem-Fir	WR Cedar	Yellow Cedar
Appearance	125	—	—	—	—	—
Beams & Stringers	130	—	—	—	—	—
<b>Boards</b>						
Interior	112	—	—	—	—	—
	113	—	—	—	—	—
Sheathing & Form	114	—	—	—	—	—
White & Red Pine	—	—	116	—	—	—
	—	—	117	—	—	—
	—	—	118	—	—	—
Stress Rated	115	—	—	—	—	—
Casing & Base	103	—	—	—	—	—
Ceiling & Siding	102	—	—	—	—	—
Crossarms	—	190	—	190	—	190
Decking	127	—	—	—	—	—
Glued Lumber	129	—	—	—	—	—
Exterior Patio Decking	126	—	—	—	—	—
Factory Lumber	154	—	—	—	—	—
<b>Shop</b>	155	—	—	—	206	—
Door Stock	156	—	—	—	—	—
Box Lumber	159	—	—	—	—	—
Alternate Shop	160	—	—	—	—	—
<b>4/4 Shop</b>	161	—	—	—	—	—
Cut Sash & Door	162	—	—	—	—	—
Shop or Cut Grades	163	—	—	—	—	—
Fence Boards	—	—	—	—	210	—
Finish	101	—	—	—	—	—
Finish, Panelling, Ceiling & Drop Siding	—	—	—	—	200	—
Flitches	150	—	—	—	—	—
Flooring	104	—	—	—	—	—
Foundation Lumber	—	—	—	—	211	—
Furniture Grade	164	—	—	—	—	—
Gutter	133	—	—	—	—	—
<b>Industrial Clears</b>						
2" & Thinner	108	—	—	—	202	—
<b>Industrial Clears</b>						
2 1/4" & Thicker	109	—	—	—	203	—
Jamb - Window, Door, etc.	107	—	—	—	—	—
Ladder Stock	132	—	—	—	—	—
Lath	183	—	—	—	—	—
Lath, Snow Fence	184	—	—	—	—	—

## INDEX OF GRADES BY PARAGRAPH

	All Species	Douglas Fir	Red & White Pine	W. Hem Hem-Fir	W.R. Cedar	Yellow Cedar
<b>Mast, Spar &amp;</b>						
Boat Lumber	134	—	—	—	—	—
Machine Graded Lumber	128	—	—	—	—	—
Mine Guides	—	189	—	—	—	—
Moulding Stock (A)	151	—	—	—	—	—
Moulding Stock(B)	152	—	—	—	—	—
<b>National Grading Rule</b>	120	—	—	—	—	—
Studs	121	—	—	—	—	—
Light Framing	122	—	—	—	—	—
Str Light Framing	124	—	—	—	—	—
Str Joists & Planks	124	—	—	—	—	—
Panelling - Clear	106	—	—	—	200	—
Panelling - Knotty	—	—	—	—	204	—
Pickets	182	—	—	—	—	—
Pipe Stave Stock	—	185	—	—	—	—
Posts & Timbers	131	—	—	—	—	—
<b>Railway Material</b>						
Clear Car Decking	173	—	—	—	—	—
Car Decking	174	—	—	—	—	—
Car Framing (2" & Thinner)	170	—	—	—	—	—
Car Framing (2 1/2" & Thicker)	171	—	—	—	—	—
Car Framing (under 7" Thick)	172	—	—	—	—	—
Car Lining & Roofing	175	—	—	—	—	—
Car Siding	177	—	—	—	—	—
Horizontal Car Sheathing	176	—	—	—	—	—
Running Boards	178	—	—	—	—	—
Ties	179	—	—	—	—	—
Scaffold Plank	180	—	—	—	—	—
Silo Staves	186	—	—	—	—	—
<b>Sidings</b>						
Clear Bevel	—	—	—	—	201	—
Drop	102	—	—	—	—	—
Knotty Bevel	—	—	—	—	205	—
Knotty	—	—	—	—	204	—
Stadium Plank	—	—	—	—	—	192
Stepping	105	—	—	—	—	—
Structural Laminations	181	195	—	195	—	—
Tank Stock	—	191	—	—	191	191
Window Stock	153	—	—	—	—	—



# GENERAL PROVISIONS

---

## **1. Scope**

The purpose of grading rules is to maintain a standard or measure of value between mills manufacturing the same or similar woods so that uniform qualities will be the result.

## **2. Interpretations**

The interpretations of these rules are vested in the National Lumber Grades Authority.

Written Interpretations of these rules have been prepared by the National Lumber Grades Authority in order to promote the uniform application of these rules.

A copy of the Interpretations are included at the back of this grade rule book for your convenience.

## **3. Lumber**

Lumber is a manufactured product derived from a log in a sawmill or planing mill, which when rough shall have been sawed, edged, and trimmed at least to the extent of showing saw marks or other marks made in the conversion of logs to lumber on the four longitudinal surfaces of each piece for its overall length, and which has not been further manufactured other than by cross-cutting, ripping, resawing, joining crosswise and/or endwise in a flat plane surfacing with or without end matching and working.

## **4. American and Canadian Standard Lumber**

Lumber manufactured and measured according to the provisions of these rules may be regarded as American and/or Canadian Standard Lumber meeting the provisions of PS 20 and/or CSA 0141 and may be so designated. (Commonly referred to as ALS and/or CLS Lumber.)

## **5. Original Grading**

The grade of lumber, as determined by the grader, applies to the size, form, condition or degree of seasoning at time of original grading.

## **6. Remanufacturing**

Except in the case of such items as factory lumber, material supplied in accordance with these rules is not graded with the intent that it be suitable for remanufacturing to smaller sizes.

# GENERAL PROVISIONS

## 7. Species Covered

The provisions of this document apply to all softwood lumber species manufactured in Canada. They may also be applied to hardwood species manufactured for applications where softwood species are ordinarily employed.

<b>Commercial Name</b> {Other Common Name(s)}	<b>Botanical Name</b>	<b>Stamp Identification</b>
Eastern White Cedar (Northern White Cedar)	<i>Thuja occidentalis</i>	East White Cedar (N) or EW Cedar (N)
Western Red Cedar (Red Cedar)	<i>Thuja plicata</i>	WR Cedar (N)
Yellow Cedar (Yellow Cypress)	<i>Xanthocyparis (Chamaecyparis) nootkatensis</i>	Y Cedar (N)
Alpine Fir (Subalpine Fir)	<i>Abies lasiocarpa</i>	Alpine Fir (N) or Ap Fir (N)
Amabilis Fir	<i>Abies amabilis</i>	Am Fir (N)
Balsam Fir	<i>Abies balsamea</i>	B Fir (N)
Douglas fir	<i>Pseudotsuga menziesii</i>	D Fir (N)
Grand Fir	<i>Abies grandis</i>	G Fir (N)
Eastern Hemlock	<i>Tsuga canadensis</i>	East Hemlock (N) or E Hem (N)
Western Hemlock (Pacific Coast Hemlock)	<i>Tsuga heterophylla</i>	W Hem (N)
Western Larch	<i>Larix occidentalis</i>	Larch (N)
Eastern White Pine	<i>Pinus strobus</i>	East White Pine or EW Pine (N)
Jack Pine	<i>Pinus banksiana</i>	J Pine (N)
Lodgepole Pine	<i>Pinus contorta</i>	L Pine (N)
Ponderosa Pine (Yellow Pine)	<i>Pinus ponderosa</i>	P Pine
Red Pine	<i>Pinus resinosa</i>	R Pine
Western White Pine (Idaho White Pine)	<i>Pinus monticola</i>	WW Pine
Whitebark Pine	<i>Pinus albicaulis</i>	WB Pine
Black Spruce	<i>Picea mariana</i>	B Spr (N)
Coast Sitka Spruce (Sitka Spruce)	<i>Picea sitchensis</i>	C Sitka



# GENERAL PROVISIONS

1

Engelmann Spruce	<i>Picea engelmannii</i>	E Spr (N)
Red Spruce	<i>Picea rubens</i>	R Spr (N)
White Spruce	<i>Picea glauca</i>	W Spr (N)
Western White Spruce (White Spruce)	<i>Picea glauca</i>	WW Spr
Tamarack (Larch)	<i>Larix laricina</i>	Tam (N)
Aspen Poplar (Trembling Aspen)	<i>Populus tremuloides</i>	Aspen (N)
Largetooth Aspen		
Black Cottonwood	<i>Populus trichocarpa</i>	B Cot
Balsam Poplar	<i>Populus balsamifera</i>	B Pop

For use in the U.S.A.: in reference to the three (3) species listed below; none of these species currently have design values and therefore must not be intermingled with structural lumber of any species that have design values, nor shall they be grade stamped to grades within these rules that have design values.

Red Alder	<i>Alnus rubra</i>	Alder (N)
White Birch	<i>Betula papyrifera</i>	W Birch
Norway Spruce	<i>Picea abies</i>	N Spr (N)

**Note:** *Norwayspruce also does not currently have design values for use in Canada.*

## 7a. Species Combinations

A number of Canadian timber species are grown, harvested, manufactured and marketed together, and have similar performance properties which make them interchangeable in use. For purpose of identification, and standardization of assigned recommended design values, and because some species cannot be visually separated in lumber form, certain species are given a common designation on grade stamps. The various species combinations which officially may be stamped with such common designations are shown below:

Species Combination	Commercial Designation	Stamp Identification
Douglas Fir Western Larch	Douglas Fir - Larch	D Fir-L (N)
Western Hemlock Amabilis Fir	Hem-Fir	Hem-Fir (N)

## GENERAL PROVISIONS

Species Combination	Commercial Designation	Stamp Identification
White Spruce	S-P-F Spruce-Pine-Fir	S-P-F or Spruce-Pine-Fir
Engelmann Spruce		
Black Spruce		
Red Spruce		
Lodgepole Pine		
Jack Pine		
Alpine Fir		
Balsam Fir		
Eastern Hemlock	Eastern Hemlock- Tamarack	Hem-Tam (N)
Tamarack		
Pacific Coast Yellow Cedar	Western Cedars	W Cedar (N)
Western Red Cedar		
Aspen Poplar	Northern Aspen	N. Aspen
Largetooth Aspen		
Balsam Poplar		
Douglas Fir-Larch	Coast Species	Coast Species
Hem-Fir		
Coast Sitka Spruce		
Any Canadian species covered by this Rule except in the USA: Red Alder, W. Birch & Norway spruce are not included in this group.	Northern Species	North Species or N. Species

Since the composition of species in timber stands varies and there is no practical way to determine the species percentage that might be included in a particular shipment, lumber marked with a combination grade stamp may be all of any one species or some mixture of any of the species in the combination. Even though individual species of a combination may be separately identified, design values are published primarily for four Canadian species combinations in dimension lumber sizes: Spruce-Pine-Fir, Douglas Fir-L (N), Hem-Fir (N) and Northern Species. This is because the first three combinations, which are specified and used as combinations, were sampled and tested as coherent groups. The exceptions to this rule are Coast Sitka Spruce and Yellow Cedar, individual species which have separate design values based on recent sampling and testing, and are not part of the first three species combinations.

# GENERAL PROVISIONS

1

The fourth combination, Northern Species, is a bracket group for any Canadian species covered by this Rule.

Mills may wish to separate individual species of dimension lumber for marketing or manufacturing purposes, although there is no advantage in such separation for design values. Where individual species of dimension lumber, other than Coast Sitka Spruce or Yellow Cedar (N) or those in the Spruce-Pine-Fir, Douglas Fir-L (N), or Hem-Fir (N) species combinations are shipped alone or in combination, the values of Northern Species combination apply.

Where shipments include species that come from more than one species combination, which may not be separated, the lowest design values for these species combinations shall apply.

## 8. A Lumber Grade

A lumber grade is a minimum standard describing the extent and limitations of the characteristics permitted in a piece of lumber having regard to the end use for which the grade is intended. Since no two pieces of lumber are identical, complete uniformity in grades or shipments is impossible. A shipment of a specific grade shall not be made up only of pieces containing characteristics of the maximum number or size permitted. It is recognized that grades or specifications may overlap and that producers of lumber may utilize other grading rules or specifications and may sort their lumber accordingly; and therefore, nothing in these rules precludes or prohibits the selection of pieces of lumber meeting the requirements of more than one grade or specification for use in any of the grades or specifications for which it qualifies.

## 9. Freedom of Contract

The right to freedom of contract between buyer and seller is recognized and any of the provisions of these rules may be set aside by special agreement. However, if the lumber is grade stamped it must still meet or exceed the minimum provisions of the grade as defined in the rules.

'**Out of Contract**' situations are identified in Para 410.3.

## 10. Inspection

The inspection of lumber is the visual analysis of lumber.

## 11. Grading

The grading of lumber is the application of a grading rule to lumber for the purpose of determining the grade of a piece of lumber based on inspection and/or on non-destructive mechanical methods.

## GENERAL PROVISIONS

---

### **12. Grade Checking**

The grade checking of lumber is the inspection of lumber for the supervision control made by an Accredited Agency on its graders' performance.

### **13. Re-Inspection**

The re-inspection of lumber is the verification made upon a claim, of a shipment or an item of a shipment. Refer to Para. 400 for details.

### **14. Faces Graded**

Unless otherwise specified the following standard procedure will apply:

Dimension, timbers and similar items are graded for strength; characteristics on all four sides and both ends are considered in relation to their effect on the strength of the piece. The principal factors which govern the strength of a piece of lumber are the slope of grain, size of knots and their location. It is primarily on the basis of these factors that the stress value of any grade is assigned. Other characteristics of wood which have a lesser effect on strength, such as shake, splits, etc., are then restricted or not permitted so that the assigned values for the grades are assured. Some characteristics such as pitch streaks, pitch pockets and wane may be restricted merely for the sake of appearance. Knots not firmly fixed, unsound knots and knot holes, which have no more effect on strength than sound knots, are restricted in most grades in order to improve appearance.

Other yard lumber, when rough or surfaced, is graded from the face or best side unless otherwise specified. The reverse face may have characteristics approximately one grade lower than the face.

Factory lumber is graded from the poorer face.

### **15. Grade of Piece**

The grade of each piece is determined by the application of the rule to the sum of all its characteristics.

Each grade description lists the major characteristics which may be acceptable and usually limits them as to location, type, area, size or number.

# GENERAL PROVISIONS

---

1

## **16. Equivalent Characteristics**

When characteristics are not described they are appraised in relation to the characteristics permitted or limitations prescribed for the grade under consideration and are allowed if judged by the grader or inspector to be equivalent in effect to those described.

## **17. Maximum Combination of Characteristics**

All or nearly all of the permissible characteristics of the grade are rarely 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 under consideration.

## **18. Variation in Grading**

The grading of lumber cannot be considered an exact science because it is based on a visual inspection of each piece and the judgement of the grader. The provisions of the NLGA Grade Rule and NGR are, however, sufficiently explicit to establish a maximum of five (5) percent below grade as a reasonable variation between graders.

## **19. Percentage of Volume**

Except as otherwise specified, all percentages referred to herein are applicable to volume (FBM).

## **20. Basic Size**

The number and/or size of the characteristics permitted in a grade varies as the area of the piece increases or decreases in relation to basic size specified.

## **21. Basis for Rough Lumber**

Characteristics permitted and limitations for rough lumber are the same as those for dressed lumber of like kind and grade. In addition, such characteristics which are likely to disappear in dressing rough lumber to standard sizes are allowed, however, when rough lumber is graded for shipment in the rough no such allowance is permitted unless otherwise specified.

# GENERAL PROVISIONS

---

## 22. Manufacture Classification

- a) **Rough Lumber**
- b) **Dressed Lumber**
- c) **Worked Lumber**
- d) **Product of Lumber**

**a) Rough Lumber** - Lumber that has not been dressed (surfaced), but which has been sawed, edged and trimmed at least to the extent of showing saw marks or equivalent on the four longitudinal surfaces of each piece for its overall length.

**b) Dressed (Surfaced) Lumber** - Lumber that has been dressed by a planing machine (for purposes of attaining smoothness of surface and uniformity of size) on one side (S1S), two sides (S2S), one edge (S1E), two edges (S2E), or a combination of sides and edges - S1S1E, S1S2E, S2S1E or S4S.

**c) Worked Lumber** - Lumber which in addition to being dressed has been matched, shiplapped or patterned.

**i) Matched Lumber** - Lumber that has been worked with a tongue on one edge of each piece and a groove on the opposite edge to provide a close tongue-&-groove joint by fitting two pieces together. When end matched the tongue and groove are worked on the ends also.

**ii) Shiplapped Lumber** - Lumber that has been worked or rabbeted on both edges of each piece to provide a close lapped joint by fitting two pieces together.

**iii) Patterned Lumber** - Lumber that is shaped to a pattern or to a moulded form, in addition to being dressed, matched or shiplapped, or any combination of these workings.

**d) Product of Lumber** - The term "**Product of**" denotes that a facility has ripped, resawn or patterned the material from standard grades of lumber, and;

- i)** design values do not apply when using a "**Product of**" designation; and
- ii)** lumber with "**Product of**" designation shall not be intermingled with lumber having design values.

## GENERAL PROVISIONS

1

### **23. Basis of Measurement**

Board measure is the standard basis of measuring lumber under these rules. The board measurement of lumber, rough or dressed, is based on the corresponding nominal dimension.

### **24. Unit of Measurement**

Board foot is the unit of measurement of lumber. A board foot is the quantity of lumber contained in or derived by drying, dressing or working from a piece of rough green lumber 1 inch thick, 1 foot wide, and 1 foot long, or its equivalent in thicker, wider, narrower or longer lumber.

### **25. Board Measure**

The number of board feet in a piece of lumber is obtained by multiplying the nominal thickness in inches or fraction of an inch by nominal width in feet by the length in feet.

### **26. Thin Lumber**

For lumber with a nominal thickness less than one (1) inch, the number of board feet equals the product of the nominal width in feet by the length in feet.

### **27. Stick Tally**

In lumber specified to be measured with a board rule (stick) on actual widths, pieces measuring to the even half-foot are alternately counted as of the next higher and lower foot count; fractions below the half-foot are dropped and fractions above the half-foot are counted as of the next higher foot.

### **28. Standard Sizes Tally**

Standard lumber should be tallied board measure. The invoices for lumber of standard sizes shall show the number of pieces of each nominal size and length as well as the net thickness and width of such lumber.

### **29. Non-Standard Sizes Tally**

Lumber finished to non-standard sizes should be tallied board measure as of either the rough or the nominal size necessarily used in its manufacture, and the actual thickness and width of such lumber should be shown on the invoice.

## GENERAL PROVISIONS

---

### 30. Standard (Dressed) Sizes

Standard thicknesses and widths are shown in Section 12 of these rules. The dressed thickness and widths, as shown, are considered standard for corresponding nominal sizes as shown. Lumber of any size, rough or dressed, is described by its nominal dimensions in customary use and in these rules.

### 31. Nominal and Actual Sizes

The use of "Nominal" sizes in the language of these rules is for convenience purposes only and follows the practice of the industry. No inference should be drawn that the "nominal" sizes are actual sizes.

### 32. Rough Sizes

The minimum rough thickness of dry and green lumber 1 or more inches in nominal thickness shall be not less than  $\frac{1}{8}$ " (3mm) thicker than the corresponding minimum standard dressed thickness, except that up to 20 percent of a shipment shall be not less than  $\frac{3}{32}$ " (2mm) thicker than the corresponding standard dressed thickness. The minimum rough widths shall not be less than  $\frac{1}{8}$ " (3mm) wider than the corresponding standard dressed width.

### 33. Resawn or Ripped Surface Lumber

When ripping or resawing surfaced lumber a maximum tolerance of  $\frac{1}{32}$ " over or under in thickness or  $\frac{1}{16}$ " over or under in width will be permitted in the occasional piece.

### 34. Average Width

There are two methods of calculating average width:

#### a) The Standard Average Method

The average width in inches of a shipment of lumber is computed by dividing the total board feet by the total length in feet and multiplying the result by 12; but if thicker than one (1) inch, the total board foot tally is divided first by the nominal thickness as expressed in inches and fractions of an inch.

#### b) The Board Foot Method

The average nominal width of a shipment is computed by multiplying the board feet of each width by the width and dividing the total number of board feet times the width, by the total board feet.



# GENERAL PROVISIONS

1

## 35. Standard Lengths

Standard lengths are multiples of 1', but some items are customarily shipped in multiples of 2'. In all items longer lengths than those listed may be included at shipper's option.

## 36. Trimmed Length

Unless otherwise stated in the contract of purchase, lumber under these rules is trimmed for the removal of sniped, splintered or uneven log lengths. It must be trimmed full to length specified and **a) if 2" or less** - not more than 3" over length; **b) 3" and 4"** - not more than 4" over length; and **c) 5" and thicker** - not more than 6" over length.

## 37. Average Length

The average length in feet of a shipment of lumber is computed by dividing the total length in feet by the total number of pieces in the shipment.

## 38. Grade Stamped Lumber

Standard lumber (rough or dressed) in the species covered by these rules may be available grade stamped under the direction of agencies accredited by the CLSAB, or for the U.S. market by the ALSC Board of Review.

## 39. Grade Stamps

A certified grade stamp is the buyer's assurance that the lumber involved has been carefully inspected by a qualified grader who is regularly supervised for grading efficiency in accordance with the requirements of CSA Standard O141 and/or PS 20, and that the lumber was graded under a grading rule approved by the CLSAB and/or the ALSC Board of Review.

Each grade stamp shows the:

- a) registered symbol of the certified agency
- b) mill and/or grader identity usually by number
- c) grading rule used where applicable
- d) grade
- e) species or species group

In addition some indications relating to sizes, moisture content and heat-treatment (HT) may be added to the grade stamps.

# GENERAL PROVISIONS

---

## 40. Grading Rule

When lumber is graded in accordance with the NLGA grade rules, grade stamps of a CLSAB accredited Canadian agency, shall contain the abbreviation "**NLGA**". Accredited agencies may also be approved to grade under other rules.

## 41. Grade

The lumber grade is identified by the appropriate grade name or grade name abbreviation as shown in these rules.

**Mixed grades** – Grade stamping other than the two (2) highest established grades for each grading rule category shall not be permitted. When the two (2) highest established grades are grade stamped using a combination grade stamp, the design values for the lowest grade in the combination are applicable except when specific values have been assigned to the mixed grade (i.e. No. 1 & Btr D Fir-L (N)).

The grade stamp for boards must show the paragraph number of the pertinent paragraph if the grade name is the same or similar to that used in any other board grade.

When grade-stamping boards whose surfaced thickness is in excess of  $1\frac{5}{16}$ " , the grade stamps shall include in addition the word "**BOARD**" to indicate that the piece of lumber is a board and not stress graded.

## 42. Species

The species or species combination is identified on the grade stamp by species name, by approved abbreviation or by approved group identification.

## 43. Sizes

If lumber is dressed to a size below minimum American and Canadian Standard Lumber requirements, the stamp shall show the size.

## 44. Moisture Content Standards

The moisture content of wood is the weight of water in wood expressed as a percentage of the weight of the wood from which all water has been removed (oven dry). Moisture is removed from lumber by air drying, by use of dry kilns or by other artificial means.

**Dry Lumber** - is lumber which has been dried to a moisture content of **19% or less**.

**Green Lumber** - is lumber having a moisture content of **over 19%**.

# GENERAL PROVISIONS

1

## a) Boards & Dimension

Any 4" and thinner Boards or Dimension lumber surfaced at a moisture content (MC) of 19% or less may be stamped "**S-DRY**" or if kiln dried to a maximum moisture content of 19% it may be stamped "**KD**". Except as otherwise provided, any lumber surfaced at a moisture content of 15% or less may be stamped "**MC15**" or if kiln dried to a maximum MC of 15%, it may be stamped "**KD15**". It is also permissible to stamp as "**S-DRY**" or "**KD**" if kiln dried, lumber surfaced at a moisture content of 15% or less. However, if such lumber is invoiced as "**MC15**" or "**KD15**" or some lesser moisture content and reinspection is made, the invoice provisions shall prevail for purposes of reinspection.

Grade stamps for 4" & thinner Boards or Dimension surfaced at a moisture content over 19% will show "**S-GRN**" on the stamp.

## b) Clears, Selects, Factory Lumber & Moulding Stock

All grades 2" or less in thickness sold as DRY (seasoned) shall be dried to 15% maximum moisture content, stock over 2" thick may be dried to 19% maximum moisture content.

Orders for lumber of a moisture content varying from the above shall be subject to special agreement.

## c) Lumber over 4" Thick

Moisture content of lumber over 4" thick shall be subject to special agreement.

## d) Shrinkage and Expansion

All lumber shrinks and expands within narrow limits with changes in moisture content much as most other materials swell or shrink with changes in temperature. Natural shrinkage or expansion in width and thickness may average approximately 4% from fibre saturation point (*approximately 30%*) to normal dry service conditions. Individual pieces may have more or less shrinkage.

When lumber is further dried after surfacing an allowance may be made of 1% (.7% for Western Red and Eastern White Cedar) reduction in size for each 4% reduction in moisture content based on the actual moisture content of the dry items and on 30% moisture content for unseasoned items. The same tolerance will be applied to dry items subject to re-absorption.

## GENERAL PROVISIONS

---

Shrinkage or expansion percentages are average values. Shrinkage and expansion of individual pieces may vary. In large sizes, where it is impractical to establish the moisture content, any allowance for shrinkage or expansion must be left to the judgement of experienced personnel.

**Note:** *The range of shrinkage of individual pieces from experimental observation is from 2% to 7%. Variables that affect measurement and shrinkage of lumber are: density, species, grain orientation and allowable grade characteristics. See Forintek Canada Corp. - Jessome, A.P. 2000 SP-514 Report or the US Forest Products Laboratory Research Reports 15 and 30.*

### 45. Supplementary Provisions

All provisions outlined in the preceding paragraphs, where appropriate, supplement the specific provisions for the various items outlined in these rules.

### 46. Specified Species

All grades in this rule apply to all species unless otherwise specified. Although some paragraphs are identified with particular species, this does not preclude other species being graded under these paragraphs on request.

### 47. Reprints from Other Rules

**a)** Paras. 112, 113, 151, 160, 161 and 162 are reprinted from WWPA rules; **b)** Para. 195 is reprinted from WCLB rules; and **c)** Para 164 is reprinted from NELMA rules.

### 48. Design Values

For use in Canada, design values are assigned to the grades by the CSA Technical Committee on Engineering Design in Wood. Design values are published in the current edition of CSA O86.

For use in the USA, design values are published in Para. 900.

**Note:** *The American Lumber Standard Board of Review does not approve design values for use in Canada and the Canadian Lumber Standards Accreditation Board does not approve design values for the use in the USA.*

## PURPOSELY LEFT BLANK

---

1

# **EASTERN WHITE AND RED PINE**

---

## **EASTERN WHITE AND RED PINE BOARDS**

**All Widths, All Thicknesses,  
Rough or Surfaced**

### **CLEARs, SELECTs AND COMMONs**

**3**

Grade descriptions are based on a piece of S4S 1" x 8" x 12' long. The number and extent of characteristics in larger or smaller pieces may vary in proportion to the size of the piece. Characteristics appearing on the edges of S2S or rough stock widths which will be removed in surfacing are not given the same consideration as characteristics in S4S lumber. In random width shipments sold on board rule scale, the grade will be determined by the full width and thickness of the piece. Any piece showing a serious combination of the listed characteristics which might impair its intended use is excluded from the grade under consideration. All pieces are graded from the better side or face. The reverse side may be one grade lower in quality with more restriction placed on the back of the higher grades. Compression wood in damaging form based on visual inspection (i.e., compression failure, warp or other such damage) is excluded from B and Better, C Select, D Select, 1 Common, 2 Common and 3 Common. Due to the inherent nature of the species, allowable pitch for red pine is much greater.

Certain characteristics found in Board lumber are difficult to evaluate to an exact degree because of the nature of the log from which Boards are produced. Some limiting characteristics must be evaluated by applying sound judgement and all must be considered in determining the grade. Any piece judged to contain a serious combination of the listed characteristics, even though some of the characteristics may not be limiting in themselves, is excluded from the grade. Likewise, an otherwise "high line" piece may be placed in a grade even though one or two of its characteristics may slightly exceed the limitations described by the rules. Such pieces will be of exceptional quality otherwise and might grade one or more grades higher, except for such characteristics. Therefore, each individual piece is considered in its entirety in determining the grade. For Standard Sizes, see Para. 820b.

# EASTERN WHITE AND RED PINE

---

## CLEARs

### All Widths, All Thicknesses, Rough or Surfaced

- 116.** There is only one grade of Clears for Eastern White and Red Pine Boards: **B AND BETTER.**

#### **116a. "B AND BETTER" CLEARs**

Some pieces may have a few minor characteristics which do not detract from their appearance or high quality.

Characteristics and limiting provisions are:

- Manufacture - Standard "C" (Para. 722) on occasional piece.  
Length - 8' and longer.  
Checks - seasoning small, 1 on each end or 3 or 4 if away from ends.  
Warp - very light (Para. 752) on occasional piece.  
Skip - very light on one edge, light on back.  
Stained Wood - light on occasional piece, not more than 10% of the face.  
Torn Grain - very light, not more than 3" long.  
Wane - on reverse side only of an occasional piece; 1/4 thickness, 1/16 the width, 1/6 the length.  
Knots - 2 sound, tight pin, or slight traces of pitch or a very small pocket, or equivalent.

## SELECTs

### All Widths & All Thicknesses, Rough or Surfaced

- 117.** There are two grades of Selects for Eastern White and Red Pine Boards: **"C SELECT"** and **"SELECT"**.

#### **117a. C SELECT**

Because of its appearance and usability, ranks only slightly less than B. and Better - it is one of the most sought after products from the clear portion of the log.

It is widely used for high quality interior trim and cabinet work with natural, stain or enamel finishes.

## EASTERN WHITE AND RED PINE

Characteristics and limiting provisions are:

- Manufacture - Standard "C" (Para. 722) on occasional piece.
- Length - 6' and longer (5% maximum FBM basis of 6' length allowed in each width).
- Checks - seasoning, small, well distributed on the surface, 6 in a 1" x 8" x 12'.
- Skip - light on one edge, 1 medium or 2 light skips on the reverse side.
- Stained Wood - light, on occasional piece.
- Wane - on reverse side, 1/2 the thickness, 1/8 the width, 1/4 the length on occasional piece.
- Warp - light (Para. 752) on occasional piece.

In addition with the above, one of the following characteristics:

- Pitch - light, not more than 1/2 the face.
- Pitch Streak - 1 small.
- Pockets - 2 very small or equivalent.
- Knots - 2 small sound and tight or equivalent smaller.

Equivalent characteristics no more damaging than any of the above.

### 117b. D SELECT

Lumber of this grade has many of the fine appearance features of C Select grade. Although generally less restrictive than C Select, D Select is suitable where the requirements for finishing are less exacting. The grade is between the higher finishing grades and the board grades, as many pieces have a finish appearance on one face, the reverse side showing larger or more numerous characteristics.

Characteristics and limiting provisions are:

- Manufacture - Standard "C" (Para. 722) on occasional piece.
- Length - 6' and longer (5% maximum FBM basis of 6' length allowed in each width).
- Checks - seasoning, small, well distributed; medium on back.
- Skip - 1 very light on face, hit and miss on back; One edge may be  $\frac{1}{16}$ " scant for 1/2 the length on occasional piece.
- Split - 1/16 the length on one end or equivalent.
- Stained Wood - medium, on occasional piece.



## EASTERN WHITE AND RED PINE

---

- Wane - on reverse side, 3/4 the thickness, 1/4 the width, 1/4 the length on occasional piece.
- Warp - medium (Para. 752) on occasional piece.

In addition with the above, one of the following characteristics:

- Pitch - medium, not more than 2/3 of face, less if heavy.
- Pitch Streak - 1 medium.
- Pockets - 4 small or equivalent smaller.
- Shake - light on reverse face, well distributed.
- Knots - 4 small, fixed or equivalent smaller.
- Equivalent characteristics no more damaging than any of the above.

### 117c. STAINED SELECTS

Stained Selects are graded D Select or Better in all characteristics except stain, admitting all degrees of stain.

### COMMONS All Widths & All Thicknesses, Rough or Surfaced

**118.** There are five common grades and one plank wall grade:  
**1 COMMON, 2 COMMON, 3 COMMON, 4 COMMON, PLANK WALL**  
and **5 COMMON.**

### 118a. 1 COMMON

This grade includes all sound, tight knotted stock with the size and character of the knot, the determining factor of the grade.

Characteristics and limiting provisions are:

- Manufacture - Standard "C" (Para. 722) on an occasional piece.
- Length - 6' or longer (8% maximum FBM basis of 6' length allowed in each width).
- Checks - seasoning, 4 small surface in a 1" x 8" x 12'.
- Heart Pith - firm; not more than 1/4" wide, 1/6 the length.
- Pitch - light, not more than 1/8 the area.
- Pitch Streak - 2 very small streaks of medium pitch in 1" x 8" x 12'.
- Pockets - very small, 4 in 1" x 8" x 12'.
- Shake - light surface, not over 1/8 the length.
- Skip - 3 very light on one edge or 2 light on reverse side in a 1" x 8" x 12'.

## EASTERN WHITE AND RED PINE

- Split - very short, limited to one on each end.  
 Stained Wood - light, not more than 1/3 the face.  
 Wane - on reverse side, 1/2 the thickness, 1/8 the width, 1/4 the length on an occasional piece.  
 Warp - medium (Para. 752) on an occasional piece.  
 Knots - sound, tight and smooth, red and black limited as follows:

3

Face Width	Red Knots	Black Knots
4"	1"	3/4"
6"	1 1/2"	1 1/4"
8"	2"	1 1/2"
10"	2 1/2"	2"
12"	3"	2 1/2"

Black knots limited to 3 of maximum size and/or equivalent smaller for each 12' of length.

Smooth means free of heavy pitch and bark.

Spike knots permitted if judged to be equivalent in effect to other knots. Spike knots in 6/4 and thicker, two of limiting size, 1/3 the width and up to 1/2 the thickness.

The knot sizes listed above will generally be the maximum size found in this grade. However, there may be pieces of otherwise exceptional quality which may contain slightly larger knots than those listed.

An occasional piece may have one angling 1/2" hole (slough knot) on the edge, extending into the wide face not more than 1/2" and into not more than 1/2 thickness.

### 118b. 2 COMMON

Characteristics and limiting provisions are:

- Manufacture - Standard "D" (Para. 722) on an occasional piece.  
 Length - 6' and longer (10% maximum FBM basis on 6' lengths allowed in each width).  
 Checks - seasoning, 2 medium or equivalent smaller in a 1" x 8" x 12' piece.  
 Roller Checks - light on reverse side, no more than 1/4 length.  
 Heart Pith - firm, not more than 1/2" wide by 1/2 length.  
 Hole - one only medium hole or cavity, or 12 pin holes scattered in a 1" x 8" x 12'.

## EASTERN WHITE AND RED PINE

---

- Pitch - streaks and patches of light to medium covering 1/2 the face or 2 very small streaks of heavy pitch.
- Pockets - 3 small, well distributed or equivalent smaller in a 1" x 8" x 12'.
- Shake - light, not over 1/6 the length.
- Skip - medium on reverse side limited to 1/4 the length, medium on edge limited to 1/3 the length.
- Split - short, limited to 1 on each end.
- Stained Wood - light to medium over entire face on piece of otherwise high quality.
- Wane - on reverse side, 1/2 the thickness, 1/6 the width, 1/3 the length or equivalent on an occasional piece.
- Warp - medium (Para. 752) on an occasional piece.
- Knots - limited as follows:

Face Width	Red Knots Sound and Tight	Black Knots Sound and Tight
4"	1 <sup>1</sup> / <sub>4</sub> "	1"
6"	1 <sup>3</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>2</sub> "
8"	2 <sup>1</sup> / <sub>2</sub> "	1 <sup>3</sup> / <sub>4</sub> "
10"	3"	2 <sup>1</sup> / <sub>4</sub> "
12"	3 <sup>1</sup> / <sub>2</sub> "	2 <sup>3</sup> / <sub>4</sub> "

Spike knots permitted if judged to be equivalent in effect to other knots. Spike knots in 6/4 and thicker, three of limiting size, 1/2 the width and up to 3/4 the thickness.

The knot sizes listed above will generally be the maximum size found in this grade. However, there may be pieces of exceptional quality otherwise, which may contain slightly larger knots than those listed.

An occasional piece may have 2 small fixed knots or one angling 3/4" hole (slough knot) on the edge extending into the wide face not more than 1" and not over 2/3 the thickness of the piece. Pieces containing numerous smaller black knots shall be of quality in keeping with the requirements of this grade.

## EASTERN WHITE AND RED PINE

### 118c. 3 COMMON

Characteristics and limiting provisions are:

- Manufacture - Standard "D" (Para. 722) on an occasional piece.
- Length - 6' & longer (12% maximum FBM basis of 6' lengths allowed in each width).
- Checks - seasoning, one 2' long on face, 1/3 length on reverse side.
- Roller checks - one 2' long on face, 1/3 length on reverse side.
- Hole - pin, 15 per each square foot or 4 medium holes in a 1" x 8" x 12'.
- Pitch - heavy over 1/2 the area; or 2 small streaks of massed pitch.
- Pockets - medium, well distributed.
- Shake - light to medium well scattered over full length. Through shake not to exceed 2' in length.
- Skip - medium on face, hit & miss on reverse side. One edge may be 1/8" scant for 1/2 the length or 1/16" scant full length.
- Split - 10% of length.
- Stained Wood - medium to heavy over the entire face, maximum 1/3 of total shipment.
- White Speck - firm, limited to 1/8 the area on reverse side, very small streak on best face.
- Wane - on reverse side, 2/3 the thickness, 1/4 the width, 1/2 the length or equivalent on an occasional piece.
- Warp - heavy (Para. 752) on occasional piece.
- Knots - limited as follows:

Face Width	Red Knots Sound and Tight	Black Knots Sound and Tight and Fixed
4"	2"	1 <sup>1</sup> / <sub>3</sub> "
6"	3"	2"
8"	4"	2 <sup>3</sup> / <sub>4</sub> "
10"	5"	3 <sup>1</sup> / <sub>3</sub> "
12"	6"	4"

Spike knots permitted if judged to be equivalent in effect to other knots. Spike knots in 6/4 and thicker, four of limiting size, 2/3 the width and up to the full thickness.

## **EASTERN WHITE AND RED PINE**

The knot sizes listed above will generally be the maximum size found in this grade. However, there may be pieces of exceptional quality otherwise which may contain slightly larger knots than those shown.

An occasional piece may have 1 or 2 angling knot holes (slough knots) in the edge, extending into the wide face not more than 1/3 the width and not more than 3/4 the thickness or equivalent smaller, or an unsound knot equal to the hole permitted.

### **118d. 4 COMMON**

Characteristics and limiting provisions are:

- Length - 6' & longer (15% maximum FBM basis of 6' lengths allowed in each width).
- Checks - seasoning, large full length on reverse side. Roller, medium full length on reverse side.
- Holes - pin holes not limited, other holes limited to the equivalent of knot holes allowed.
- Knots - limited as follows:

<b>Face Width</b>	<b>Fixed Knots Firm and Tight Knots</b>	<b>Unsound Knots Loose Knots Knot Holes</b>
4"	3"	1/6 width
6"	3 <sup>1</sup> / <sub>2</sub> "	1/6 width
8", 10", 12"	2/3 width	1/6 width

Unsound Knots - knot holes and/or loose knots shall be limited to 3 maximum size or equivalent for each 12' of length.

Pitch - heavy streaks and patches of massed pitch over 1/2 area on otherwise high quality pieces.

Pockets - large.

Shake - through shake, well scattered, full length.

Skip - hit and miss on face, 1/16" scant full length of surface one side. One edge may be 1/4" scant for 1/2 the length or 1/8" scant full length.

Split - 15% of length.

Stained Wood - heavy.

White Specks - 60% of the face or equivalent on both faces.

## **EASTERN WHITE AND RED PINE**

---

Honeycomb or

Unsound Wood - 20% of one face or equivalent on both faces.  
Must not destroy the edges.

Wane - 2/3 the thickness, 1/6 the width, 1/2 length.

Warp - heavy (Para. 752) on an occasional piece.

### **118e. PLANK WALL**

The grade permits characteristics such as stain, large knots, large holes, unsound wood, massed pitch, heavy shake, splits and wane in varying stages and degrees singly or in combinations, but must have reasonably sound edges and ends for nailing.

### **118f. 5 COMMON**

This grade permits characteristics such as stain, large knots, very large holes, unsound wood, massed pitch, heavy shake, splits and wane in varying stages or degrees singly or in combinations. Many pieces in this grade are only slightly lower than the 4 Common grade while others will be at the opposite end of the grade level.

**3**

**PURPOSELY LEFT BLANK**

---

# ALL SPECIES

## 120. NATIONAL GRADING RULE FOR DIMENSION LUMBER

### 120a. INTRODUCTION

- i) Canadian Lumber Standards Accreditation Board (CLSAB) Regulations provide that grading rules of an agency may only be certified as conforming to Canadian Lumber Standards if the dimension rules therein conform to the National Grading Rule for Dimension Lumber. The National Grading Rule applies to all species or combinations of species which are covered by grading rules developed and approved under CSA Standard - CSA 0141.
- ii) Product Standard 20 (PS 20) 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 ALSC 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 PS 20. The National Grading Rule applies to all species of softwood lumber<sup>1</sup> which are covered by grading rules developed and approved under PS 20.

<sup>1</sup> *Hardwood lumber shall not be graded under provisions of this rule unless included in rules certified by the Board.*

### 120b. 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. 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.



## ALL SPECIES

---

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.

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

<b>Crossarms</b>	<b>Railroad Stock</b>
<b>Factory &amp; Shop Lumber</b>	<b>Rough Lumber</b>
<b>Finish (Selects)</b>	<b>Scaffold Planks</b>
<b>Foundation Lumber</b>	<b>Ship Decking and Plank Stock</b>
<b>Industrial Clears</b>	<b>Stadium Plank</b>
<b>Ladder Stock</b>	<b>Worked Lumber</b>
<b>Laminating Stock</b>	

When provisions are developed for segregating lumber based on rate of growth or specific gravity in accordance with the general provisions of ASTM D245 for a species, such provisions shall be included in grading rules applicable to that species. The provisions shall include the specific manner in which the specific gravity and/or rate of growth is to be determined.

### 120c. CLASSIFICATION

The National Grading Rule for Dimension Lumber classifies dimension into 3 width categories and 4 use categories. Dimension up to 4 inches wide is classified as **“Structural Light Framing”** and **“Light Framing.”**

Dimension 2 inches and wider is classified as **“Studs.”**

Dimension 5 inches and wider is classified as **“Structural Joists & 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 the added restrictions on wane, skip and warp. Any NGR Grade may be graded or ordered with **“Appearance”** limitations.

## ALL SPECIES

---

"Appearance" shall be designated by either the term "**Appearance**" or the abbreviation "**App**" on the grade stamp or by specifically identifying "Appearance" in the purchase and shipping documents.

2" - 4" Thick, 2" & Wider

### STUDS

Grade Name

Stud

2" - 4" Thick, 2" - 4" Wide

### STRUCTURAL LIGHT FRAMING

&

2" - 4" Thick, 5" & Wider

### STRUCTURAL JOISTS AND PLANKS

Grade Names (and Abbreviations)

Select Structural (Sel Str)

NO. 1

NO. 2

NO. 3

2" - 4" Thick, 2" - 4" Wide

### LIGHT FRAMING

Grade Names (and Abbreviations)

Construction (Const)

Standard (Stand)

Utility (Util)

### APPEARANCE

Grade Name (and Abbreviation)

**NGR Grade name plus Appearance**

(NGR grade name plus **APP**)

Applicable to all NGR Grades

4

Except as otherwise provided herein, the above grades shall constitute the dimension grades included in rule books of certified rule writing agencies and are the only dimension grades which shall be grade stamped as Canadian Standard Lumber or American Standard Lumber. Modification of these descriptions shall be made only by the National Grading Rule Committee.

## ALL SPECIES

---

### **120d. 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 judgement 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 D-245 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.

### **120e. MACHINE GRADED LUMBER**

A basic description for machine graded lumber is included for those certified rules writing agencies which possess the necessary technical information on their species to include detailed machine grading provisions in their grading rules. This method for mechanical testing and marking of machine graded lumber shall be included in certified agency rules if they provide for machine graded lumber.

# ALL SPECIES

Grade descriptions and grade marking privileges shall be provided by the certified rules writing agencies for machine graded lumber when lumber is evaluated by mechanical means.

## STUDS

### 2" to 4" Thick, 2" and Wider

**121.** There are two grades of Studs, "**STUD**" and "**ECONOMY STUD**." For measurement of knots, see Para. 320b.

4

#### 121a. "STUD"

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:

Nom. Width	At Edge Wide Face	Centreline 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"	
14"	6"	7"	4"	

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

- Manufacture - Standard "F." See Para. 722 f.
- Pitch & 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. 720e and g.
- Slope of Grain - 1 in 4.
- Splits - equal in length to twice the width of the piece.
- Stain - stained sapwood. Firm heart stain or firm red heart.

## ALL SPECIES

---

- Unsound Wood - in spots or streaks limited to 1/3 the cross section at any point along the length. Must not destroy nailing edge. See Para. 710e.
- Wane - 1/3 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 &  
Honeycomb - firm.

### 121d. "ECONOMY STUD"

Lumber of this grade is so designed that each piece can be used full length.

- Honeycomb - not limited.
- Shake - not limited.
- Splits - 1/4 length.
- Skips - maximum 1/4" scant of standard surfaced size.
- Unsound Wood - 75% of cross section away from ends.
- Wane - 3/4 of any face or as equivalent, 1/4 thickness across face full length, or up to 2' long 1/2 thickness.
- Warp - heavy.
- White Speck - not limited.
- Knots & Holes - 75% of cross section.

### LIGHT FRAMING 2" to 4" Thick, 2" to 4" Wide

122a. There are four grades of Light Framing: "**CONSTRUCTION**," "**STANDARD**," "**UTILITY**," and "**ECONOMY**." All of these grades are stress rated except "**ECONOMY**." For measurement of knots, see Para. 320b.

### 122b. "CONSTRUCTION" LIGHT FRAMING

Characteristics permitted and limiting provisions shall be:

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

# ALL SPECIES

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

Nom. Width	Anywhere on Wide Face	Unsound or Loose Knots & Holes (Any Cause)	
2"	3/4"	5/8"	}
3"	1 1/4"	3/4"	
4"	1 1/2"	1"	

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

4

**Manufacture** - Standard "E." See Para. 722e.

**Pitch & 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. 720f.

**Slope of Grain** - 1 in 6.

**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 Para. 750.

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

## 122c. "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:

Nom. Width	Anywhere on Wide Face	Holes (Any Cause)	
2"	1"	3/4"	}
3"	1 1/2"	1"	
4"	2"	1 1/4"	

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

## ALL SPECIES

- Manufacture - Standard "F." See Para. 722f.
- Pitch & 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 & miss, with a maximum of 5% of the pieces containing hit or miss or heavy skip 2' or less in length. See Paras. 720e, f, and g.
- Slope of Grain - 1 in 4.
- Splits - equal in length to 1<sup>1</sup>/<sub>2</sub> times the width of the piece.
- Stain - stained sapwood. Firm heart stain or firm red heart. Not limited.
- 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 1/12 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.

### 122d. "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:

Nom. Width	Anywhere on Wide Face	Holes (Any Cause)	
2"	1 <sup>1</sup> / <sub>4</sub> "	1"	}
3"	2"	1 <sup>1</sup> / <sub>4</sub> "	
4"	2 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	
			One hole or equivalent smaller holes per 1 lin. ft.

## ALL SPECIES

- Manufacture - Standard "F." See Para. 722f.
- Pitch & 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 Paras. 720e 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 - spots or streaks limited to 1/3 the cross-section at any point along the length. Must not destroy the nailing edge. See Para. 710e.
- 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 & Honeycomb - firm.

4

### 122e. ECONOMY

#### 2" to 4" Thick, 2" and Wider

Characteristics permitted and limiting provisions shall be:

Honeycomb &

White Specks - firm, not limited.

Knots - 75% of cross section.

Holes (Any cause) - Size of a hole not to exceed 75% of cross-section. The through portion shall not exceed 2' in length.

Unsound Wood - 75% of cross-section. Not limited in length.

Wane - 3/4 width, full length of piece. If through the edge, equivalent to the area of the hole permitted. Through portion not to exceed 2' in length. If across the face, 1/2 the width must not exceed 1/4" scant in thickness for 1/3 length or, as equivalent longer.



## ALL SPECIES

---

- Skips -  $\frac{1}{4}$ " scant in thickness &/or width. Not limited in length.
- Shake - not limited.
- Splits -  $\frac{1}{3}$  length.
- Waste - pieces 9' and longer in length may contain waste (areas where characteristics are larger than those permitted in the grade) which require removal by cross-cutting. The waste portions combined shall not exceed 25% of the length of the piece and must not be located within 2' of either end of the piece.

### STRUCTURAL LIGHT FRAMING

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

### STRUCTURAL JOISTS & PLANKS

**2" to 4" Thick, 5" & Wider**

**124.** There are four grades of Structural Light Framing and Structural Joists & Planks: "**SELECT STRUCTURAL**," "**NO. 1**," "**NO. 2**," and "**NO. 3**." All of these grades are stress rated. For measurement of knots, see Para. 320b.

#### **124a. "SELECT STRUCTURAL"**

Characteristics permitted and limiting provisions shall be:

- Checks - surface seasoning checks, not limited. Through checks at ends are limited as splits.
- Manufacture - Standard "E." See Para. 722e.
- Pitch & Pitch Streaks - not limited.
- Pockets - pitch or bark - not limited.
- Rate of Growth - limited to medium grain in Douglas Fir & Western Larch only. See Para. 350a.
- 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. 720f.
- Slope of Grain - 1 in 12.

## ALL SPECIES

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

4

Nom. Width	At Edge Wide Face	Centreline Wide Face	Unsound or Loose Knots & Holes (Any cause)	
2"	3/8"	3/8"	3/8"	} One hole or equivalent smaller holes per 4 lin. ft.
3"	1/2"	1/2"	1/2"	
4"	3/4"	7/8"	3/4"	
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"	

### 124b. "NO. 1" - STRUCTURAL

Characteristics permitted and limiting provisions shall be:

- Checks - surface seasoning checks, not limited. Through checks at ends are limited as splits.
- Manufacture - Standard "E." See Para. 722e.
- Pitch & Pitch Streaks - not limited.
- Pockets - pitch or bark - not limited.
- Rate of Growth - limited to medium grain in Douglas Fir and Western Larch only. See Para. 350a.
- Shake - if through at ends, limited as splits. Surface shakes up to 2' long.

## ALL SPECIES

- Skips - hit & miss skips in a maximum of 10% of pieces.  
See Para. 720f.
- 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.
- Knots - sound, firm, encased and pith knots, if tight and well spaced, are permitted in sizes not to exceed the following or equivalent displacement:

Nom. Width	At Edge Wide Face	Centreline Wide Face	Knots & Holes (Any cause)	Unsound or Loose
2"	1/2"	1/2"	1/2"	}
3"	3/4"	3/4"	3/4"	
4"	1"	1 1/2"	1"	
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.

### 124c. "NO. 2" - STRUCTURAL

Characteristics permitted and limiting provisions shall be:

- Checks - seasoning checks not limited. Through checks at ends are limited as splits.
- Manufacture - Standard "F." See Para. 722f.
- Pitch & Pitch Streaks - not limited.
- Pockets - pitch or bark - not limited.
- Rate of Growth - limited to medium grain in Douglas Fir and Western Larch only. See Para. 350a.

## ALL SPECIES

- Skips - hit & miss, with a maximum of 5% of the pieces containing hit or miss or heavy skip 2' or less in length. See Paras. 720e, f and g.
- Splits - equal in length to  $1\frac{1}{2}$  times the width of the piece.
- 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  $\frac{1}{4}$  the length, whichever is greater.
- Slope of Grain - 1 in 8.
- Stain - stained sapwood. Firm heart stain or firm red heart not limited.
- Knots - well spaced knots of any quality are permitted in sizes not to exceed the following or equivalent displacement:

4

Nom. Width	At Edge Wide Face	Centreline Wide Face	Holes (Any cause)	
2"	$\frac{5}{8}$ "	$\frac{5}{8}$ "	$\frac{5}{8}$ "	}
3"	$\frac{7}{8}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "	
4"	$1\frac{1}{4}$ "	2"	$1\frac{1}{4}$ "	
5"	$1\frac{5}{8}$ "	$2\frac{3}{8}$ "	$1\frac{3}{8}$ "	
6"	$1\frac{7}{8}$ "	$2\frac{7}{8}$ "	$1\frac{1}{2}$ "	
8"	$2\frac{1}{2}$ "	$3\frac{1}{2}$ "	2"	
10"	$3\frac{1}{4}$ "	$4\frac{1}{4}$ "	$2\frac{1}{2}$ "	
12"	$3\frac{3}{4}$ "	$4\frac{3}{4}$ "	3"	
14"	$4\frac{1}{8}$ "	$5\frac{1}{4}$ "	$3\frac{1}{2}$ "	
16"	$4\frac{1}{4}$ "	$5\frac{3}{4}$ "	4"	
18"	$4\frac{3}{8}$ "	$5\frac{7}{8}$ "	$4\frac{1}{2}$ "	

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

- Unsound Wood - (Excluding white specks) Not permitted in thicknesses over 2". In 2" lumber, small spots or streaks of firm honeycomb or peck are limited to  $\frac{1}{6}$  the width. Any other Unsound Wood is limited to a spot  $\frac{1}{12}$  the width and 2" in length or equivalent smaller.
- Wane -  $\frac{1}{3}$  the thickness and  $\frac{1}{3}$  the width full length, or equivalent on each face, provided that wane not exceed  $\frac{2}{3}$  the thickness or  $\frac{1}{2}$  the width for up to  $\frac{1}{4}$  the length. See Para. 750.

## ALL SPECIES

- Warp - light. See Para. 752.  
 White Speck - firm, 1/3 the face or equivalent.

### 124d. "NO. 3" - STRUCTURAL

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:

Nom. Width	At Edge Wide Face	Centreline Wide Face	Holes (Any cause)	
2"	3/4"	3/4"	3/4"	} One hole or equivalent smaller holes per 1 lin. ft.
3"	1 1/4"	1 1/4"	1 1/4"	
4"	1 3/4"	2 1/2"	1 3/4"	
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"	

- Manufacture - Standard "F." See Para. 722f.  
 Pitch & 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 Paras. 720e 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 - spots or streaks limited to 1/3 the cross-section at any point along the length. Must not destroy the nailing edge. See Para. 710e.

## ALL SPECIES

---

- 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 & Honeycomb - firm.

### **124e. ECONOMY**

Graded under Para. 122e.

4

## APPEARANCE

### **125. APPEARANCE (APP)**

Conforms to all provisions of the applicable NGR grade. In addition, the following limiting provisions shall apply.

- Manufacture - Standard "E". See Para. 722e.
- 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 by 1/4 the length. Omit Para. 750
- Warp - 1/2 of medium. See Para. 752

# WESTERN RED CEDAR

---

## WESTERN RED CEDAR FINISH, PANELLING, CEILING & DROP SIDING, K.D. 2" & Thinner, 2" & Wider

**200.** Western Red Cedar Finish is customarily shipped kiln dried and surfaced four sides. Grade descriptions for Finish and Panelling are based on a piece 8" wide and 12' long. Grade descriptions for Ceiling and Drop Siding 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. Pieces of Finish 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.

Pieces of Panelling, Drop Siding and Ceiling run to pattern may be partially surfaced or hollow or scratched back.

"**SawTexture**" is available in all grades of Western Red Cedar and, as the name implies, is a rough finish put on the face of a piece to give it a textured finish. Material supplied with this finish shall in all ways adhere to the grades, sizes and patterns as specified, except that it shall be graded from the textured face.

There are three grades of Western Red Cedar Finish, Panelling and Ceiling: "**CLEAR HEART,**" "**A**" and "**B.**"

If F.G. or V.G. only is desired, it must be so specified. Otherwise mixed grain (M.G.) may be shipped at shipper's option.

In occasional pieces of "A and Better" the tongue or lap in panelling and siding may be  $\frac{1}{16}$ " narrower and Ceiling with a tongue  $\frac{1}{8}$ " or more in width is permissible.

### **200a. "CLEAR HEART" - FINISH, PANELLING, CEILING & DROP SIDING**

This is the highest grade of Finish, Panelling, Ceiling and Drop Siding produced. The exposed face shall be all heartwood with many pieces being absolutely clear. Some pieces may exhibit a few minor characteristics which do not detract from their high appearance and quality.

Characteristics and limiting provisions are:

- Cup - very light.
- Skips - very light on back.
- Torn or
- Raised Grain - very light.
- Warp - very light.

## WESTERN RED CEDAR

### 200b. "A" - FINISH, PANELLING, CEILING & DROP SIDING

This grade is only slightly less restrictive than "Clear Heart."

The "A" grade is ideally suited to applications where finishing requirements are less exacting.

Characteristics and limiting provisions are:

- Checks - small.
- Cup - light.
- Sapwood - not limited
- Skips - occasional light on edges and back.
- Torn or
  - Raised Grain - light.
- Warp - light.
- Knots - 2 small, sound, tight or their equivalent.

### 200c. "B" - FINISH, PANELLING, CEILING & DROP SIDING

Although the "B" grade permits larger and more numerous characteristics than "CLEAR HEART" and "A" grades, it is highly serviceable and often yields short lengths of fine appearance from longer stock. Many pieces have a fine appearance on one side, the reverse side showing larger or more numerous characteristics.

Characteristics and limiting provisions are:

- Checks - not limited.
- Cup - medium.
- Pin Holes - limited.
- Sapwood - not limited
- Skips - hit and miss on either face and grooved edge in patterned stock; approx.  $\frac{1}{8}$ " scant on edge.
- Splits - short.
- Tongue or Lap - narrow, must be at least  $\frac{1}{16}$ " in width.
- Torn or
  - Raised Grain - not limited.
- Wane -  $\frac{1}{8}$  width for  $\frac{1}{4}$  the length &  $\frac{1}{4}$  the thickness, or its equivalent in an occasional piece.
- Warp - medium.
- Knots - 4 approximately 1" or their equivalent.
- Cutout - a 3" cutout - 3' or more from either end of pieces 12' & longer is permissible in 10% of the shipment.



## WESTERN RED CEDAR

### 200d. GLUED-UP FINISH, PANELLING, CEILING & DROP SIDING

End-glued, edge-glued or a combination of end and edge-glued Finish, Panelling, Ceiling and Drop Siding is intended to be interchangeable in use value with one-piece stock of the comparable grade. The characteristics of the grade are the same as for one-piece stock. Additional requirements for which the producer is responsible are:

- a) Exterior glue line equal to heat cured 50-50 melamine urea glue.
- b) Adequate glue line strength for usual handling and fastening.
- c) Appearance shall be suitable for intended finishing of each grade.

### BEVEL SIDING, K.D.

**201.** Western Red Cedar Bevel Siding is produced by resawing kiln dried surfaced lumber on a bevel to produce two pieces thicker on one edge than the other and is most commonly used as exterior siding, giving a horizontal shadow line effect. Except for siding intended for rough side use, bevel siding is graded on the surfaced side with characteristics and limiting provisions enumerated in the grades applying to the exposed width. Grade descriptions are based on a piece 6" wide by 12' long. Occasional tolerance in thickness is permitted, approximately  $\frac{1}{32}$ " over or under in any one piece. The thick edge permits minor characteristics that do not detract from the appearance of the piece in use.

"**Saw Texture**" is available in all grades of Western Red Cedar Bevel Siding and as the name implies is a rough finish put on the face of a piece to give it a textured finish. Material supplied with this finish shall in all ways adhere to the grades, sizes and patterns as specified, except that it shall be graded from the textured face.

There are five grades of Western Red Cedar Bevel Siding: "**CLEAR V.G. HEART**," "**A**," "**B**," "**RUSTIC**" and "**C**."

Special items, namely  $\frac{1}{2}$ " x 4" and  $\frac{1}{2}$ " x 5" sizes,  $\frac{1}{2}$ " x 6" square edged and  $\frac{3}{4}$ " x 6" rabbeted siding, are usually graded "CLEAR V.G. HEART" and "A" combined for the first grade.

## WESTERN RED CEDAR

Normal head lap for regular Bevel Siding is 1". This portion of the thin edge may contain characteristics that will be covered when laid and will provide a suitable backing.

In rabbeted siding, depth of rabbet conforms to thickness of thin edge, width of rabbet is  $\frac{1}{2}$ ".

### Finished Sizes:

Nominal Sizes Board Measure		Dressed Sizes		
Thickness	Width	Thick Edge	Thin Edge	Width
$\frac{1}{2}$ "	4"	$\frac{15}{32}$ "	$\frac{3}{16}$ "	$3\frac{1}{2}$ "
$\frac{1}{2}$ "	5"	$\frac{15}{32}$ "	$\frac{3}{16}$ "	$4\frac{1}{2}$ "
$\frac{1}{2}$ "	6"	$\frac{15}{32}$ "	$\frac{3}{16}$ "	$5\frac{1}{2}$ "
$\frac{1}{2}$ "	8"	$\frac{15}{32}$ "	$\frac{3}{16}$ "	$7\frac{1}{4}$ "
$\frac{5}{8}$ "	8"	$\frac{9}{16}$ "	$\frac{3}{16}$ "	$7\frac{1}{4}$ "
$\frac{5}{8}$ "	10"	$\frac{9}{16}$ "	$\frac{3}{16}$ "	$9\frac{1}{4}$ "
$\frac{3}{4}$ "	6"	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$5\frac{1}{2}$ "
$\frac{3}{4}$ "	8"	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$7\frac{1}{4}$ "
$\frac{3}{4}$ "	10"	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$9\frac{1}{4}$ "
$\frac{3}{4}$ "	12"	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$11\frac{1}{4}$ "

Lengths are 3' and longer in multiples of 1'.

### Nested Bundling (N.B.):

Bundles are 6' to 16' or longer. Bundles 10' and longer contain specified layers of 3' to 7' lengths.

### Full Length Bundling (F.L.B.):

All pieces in the bundle correspond to length of the bundle. The length assortment is normally 6' to 16' or longer but may include a percentage of 3' to 5' bundles, as specified by the shipper.

### Shorts:

**"CLEAR"** and **"A"** Grade -

- 6" & narrower, not more than 20% of the footage may be 6' & 7' bundles.

- 8" & wider, not more than 15% of the footage may be 6' & 7' bundles.

**"B"** Grade & **Rustic** -

- Not more than 20% of the footage may be 6' and 7' bundles.

**"C"** Grade -

- No percentages specified.

## WESTERN RED CEDAR

---

### Bundling Schedule:

	F.L.B. & N.B. Layers Per Bundle	N.B. Only Layers Nested in 10' & Longer
$\frac{3}{4}$ " x 6" to 12"	6	2
$\frac{1}{2}$ " x 5" to 8"	10	3
$\frac{5}{8}$ " x 8" & 10"	10	3
$\frac{1}{2}$ " x 4"	12	4

### 201a. "CLEAR V.G. HEART" - BEVEL SIDING

The exposed width is all heartwood and free from imperfections and presents a vertical grain appearance for  $\frac{3}{4}$  the width from the thick edge. The thick edge may contain light torn or raised grain.

### 201b. "A" - BEVEL SIDING

"A" - Bevel Siding may be furnished in mixed grain.

Characteristics and limiting provisions are:

- Skips - very light on thick edge.
- Torn or
- Raised Grain - very light on face, light on thick edge.
- Knots - 1 small, sound, tight or  
2 pin, sound, tight in occasional piece.

### 201c. "B" - BEVEL SIDING

"B" - Bevel Siding may be furnished in mixed grain.

Characteristics and limiting provisions are:

- Pin Holes - well scattered in occasional piece.
- Skips - very light, light on thick edge in occasional piece.
- Torn or
- Raised Grain - light, medium on thick edge in occasional piece.
- Knots - 4 small sound, tight or equivalent smaller in occasional piece.
- Cutouts - cutouts are permitted which can be removed by cutting out not more than 5% of the length of the piece, not exceeding one cutout in pieces 6' to 9' and two cutouts in pieces 10' & longer. The minimum length of the piece of each segment after cutting must not be less than 18".

## WESTERN RED CEDAR

---

### **201d. "RUSTIC" - BEVEL SIDING**

Pieces are graded from the resawn side. Thick edge may be rough or surfaced. The grade may include pieces too thin to dress to standard size, but not more than  $\frac{1}{16}$ " scant thickness. Some pieces may contain:

Holes - pin - well scattered.

Knots - 4 - sound, tight, small.

Lengths are random, with percentage as specified by the shipper.

### **201e. "C" - BEVEL SIDING**

Although this grade admits larger or more numerous characteristics than "B" grade, it often yields short lengths of fine quality. This grade may include stock too thin to dress to standard sizes. Lengths are random with percentages as specified by the shipper.

7

### **201f. FACTORY PRIMED BEVEL SIDING**

Factory primed products shall be identified with a stamp or label by the producer.

### **201g. GLUED-UP BEVEL SIDING**

End-glued, edge-glued or a combination of end and edge-glued Bevel Siding is intended to be interchangeable in use value with one-piece stock of a comparable grade. The characteristics of the grade are the same as for one-piece stock. Additional requirements for which the producer is responsible are:

- a) Exterior glue line equal to heat cured 50-50 melamine urea glue.
- b) Adequate glue line strength for usual handling and fastening.
- c) Appearance shall be suitable for intended finishing of each grade.

# WESTERN RED CEDAR

---

**INDUSTRIAL CLEARS**  
**V.G., F.G. &/or M.G.**  
**Rough or Surfaced**  
**K.D., A.D., or Unseasoned**  
**2" & Thinner, 3" & Wider**

**202.** There are three grades of Western Red Cedar Industrial Clears: "**B and Better**," "**C**" and "**D**."

Western Red Cedar Industrial Clears, if ordered surfaced and unless otherwise specified, are finished to the sizes shown in Para. 820c. If ordered rough unseasoned, see Para. 747 for permitted variation in size. For seasoned thicknesses and widths refer to Para. 32.

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

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

**202b. "B AND BETTER" CEDAR INDUSTRIAL CLEARS**

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

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

Rate of Growth - 6 rings per inch.

Skips - on reverse face, occasional light.

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.

**202c. "C" CEDAR INDUSTRIAL CLEAR**

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

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.

## WESTERN RED CEDAR

---

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

### 202d. "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 or their equivalent smaller which may appear on pieces in this grade and their limiting provisions are:

- Checks - not limited.
- Knots - 4 fixed, approximately 1" or 8 equivalent smaller.
- Pin Holes - limited.
- Skips - hit & miss; approximately 1/8" scant on edge.
- Splits - short.
- Sap Stain - not limited.
- Torn or  
Raised Grain - not limited.
- Wane - 1/8 the width, 1/4 the thickness, 1/4 the length or equivalent; 50% more on reverse face.
- White Specks - firm, 1/4 the width or equivalent.
- Warp - medium.
- Cutout - 20% of pieces in a shipment may have a 3" cutout, 3' or more from either end in pieces 12' & longer.

# WESTERN RED CEDAR

---

**INDUSTRIAL CLEARS**  
**V.G., F.G., and/or M.G.,**  
**Rough or Surfaced**  
**K.D., A.D., or Unseasoned**  
**2<sup>1</sup>/<sub>4</sub>" & Thicker, 3" & Wider**

**203.** There are three grades of Industrial Clear: "**B and BETTER,**" "**C**" and "**D.**"

Industrial Clear, if ordered surfaced and unless otherwise specified, are finished to the sizes shown in Para. 820c. If ordered rough unseasoned, see Para. 747 for permitted variation in size. For seasoned thicknesses and widths refer to Para. 32.

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.

## **203b. "B AND BETTER" CEDAR INDUSTRIAL CLEARS**

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

- Checks - 4 small - no limit to number in rough stock.
- Rate of Growth - 6 rings per inch.
- 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 1" in 2<sup>1</sup>/<sub>4</sub>" thicknesses to 3, 2" in 12" thicknesses.

## **203c. "C" CEDAR INDUSTRIAL CLEARS**

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

- Checks - 4 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.

## WESTERN RED CEDAR

---

- Splits - short, in 5% of the pieces.  
Sap Stain - medium.  
Torn or Raised Grain - light.  
Warp - light in occasional pieces.  
Knots - 4 sound tight 1" or 5 equivalent smaller in 2<sup>1</sup>/<sub>4</sub>" thicknesses to 4, 2" or 5 equivalent smaller in 12" thicknesses; or 4 not firmly fixed or unsound 1/2 the size of sound and tight knots.  
Cutout - 10% of pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' & longer.

### 203d. "D" CEDAR INDUSTRIAL CLEAR

Reverse face must be of a reasonably clear type, allowing characteristics approximately 25% larger or more numerous.

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

- Checks - not limited.  
Pin Holes - limited.  
Skips - hit and miss; approximately 1/8" scant on edge.  
Splits - short.  
Sap Stain - not limited.  
Torn or Raised Grain - not limited.  
Wane - 1/8 the width, 1/4 the thickness, 1/4 the length or equivalent; 50% more on reverse side.  
Warp - medium.  
White Specks - 1/4 the width or equivalent.  
Knots - 5 fixed, 1" or 7 equivalent smaller in 2<sup>1</sup>/<sub>4</sub>" thicknesses to 5, 2" or 7 equivalent smaller in 12" thicknesses.  
Cutout - 20% of pieces in a shipment may have a 3" cutout 3' or more from either end in pieces 12' & longer.



# WESTERN RED CEDAR

---

## TIGHT KNOTTED STOCK KNOTTY PANELLING & SIDINGS

(Rough or Dressed)

**1" & Thicker, 4" & Wider**

**204.** There are two grades of Tight Knotted Stock: "**SELECT KNOTTY**" and "**QUALITY KNOTTY**."

Knotty Panelling and Sidings (Dressed or Rough) stock may be shipped kiln dried, air dried or green and shall be well manufactured. Knots and other natural markings shall form the major characteristics of these grades. Panelling and Siding are one face grades. Unless otherwise specified, characteristics which do not interfere with the intended use are permitted on the reverse side.

"**Saw Texture**" is available in all grades of Western Red Cedar Knotty Panelling and Sidings and as the name implies is a rough finish put on the face of a piece to give it a textured finish. Material supplied with this finish shall in all ways adhere to the grades, sizes and patterns as specified, except that it shall be graded from the textured face.

### **204a. "SELECT KNOTTY"**

Characteristics and limiting provisions are:

- Checks - small surface.
- Skips - very light on back.
- Splits - short in 5% of pieces.
- Torn Grain - light.
- Warp - very light.
- Knots - sound tight; star checking and/or slight chipping permitted.
- Spike Knots - approximately 1/2 the width.

### **204b. "QUALITY KNOTTY"**

Characteristics and limiting provisions are:

- Checks - medium surface, occasional through or equivalent shake.
- Pin Holes - well scattered.
- Skips - very light.
- Splits - short
- Torn or Raised Grain - medium.
- Warp - light.

## WESTERN RED CEDAR

- Knots - sound tight; star checked &/or chipped; occasional 1" not firmly fixed or unsound
- Spike Knots - equivalent.
- Cut Out - in pieces 12' & longer, 20% of pieces in a shipment may contain a 3" cutout - 3' or more from either end

### KNOTTY BEVEL SIDING

**205.** Knotty Bevel Siding may be K.D., A.D. or Green and is a type of siding especially selected for exterior exposed surfaces. Knots and other natural markings shall form the major characteristics of this product. Knotty Bevel Siding shall be well manufactured on face and edges, but permitting imperfections which will be covered when laid. Minimum head lap of 1". Pieces shall have a minimum thickness in any exposed part of  $\frac{3}{16}$ ".

There are two grades of Knotty Bevel Siding: "**SELECT KNOTTY**" and "**QUALITY KNOTTY**."

7

"**Saw Texture**" is available in all grades of Western Red Cedar Bevel Siding and as the name implies is a rough finish put on the face of a piece to give it a textured finish. Material supplied with this finish shall in all ways adhere to the grades, sizes and patterns as specified, except that it shall be graded from the texture face.

#### **205a. "SELECT KNOTTY"**

Characteristics and limiting are:

- Checks - surface.
- Skips - occasional light on exposed edge.
- Splits - occasional short.
- Tolerance in
- Sawing - occasional, not to exceed  $\frac{1}{16}$ " in thickness.
- Torn or
- Raised Grain - medium.
- Warp - light.
- Knots - sound tight approximately 2" in 6" widths to  $3\frac{1}{2}$ " in 12" widths. Star checking and slight chipping permitted.
- Spike Knots - approximately 1/2 the width.

## WESTERN RED CEDAR

---

### 205b. "QUALITY KNOTTY"

Characteristics and limiting provisions are:

- Checks - not limited.
- Holes - a few small, well scattered.
- Sap Stain - not limited.
- Shake - tight, through.
- Skips - light on face, heavy on exposed edge.
- Splits - short
- Tolerance in
  - Sawing - approximately  $\frac{1}{16}$ " in thickness.
- Torn or
  - Raised Grain - heavy
- Warp - medium.
- Knots - sound tight, star checked, chipped or torn.
- Spike Knots - not limited
- Cutout - occasional pieces may contain cutouts which can be removed by wasting not more than 10% of the length of the piece. 1 cutout permitted in pieces 6' to 9' in length; 2 in 10' to 16'; and in 3 in the lengths over 16'; the shortest cutting being 30".

### FACTORY LUMBER SHOP

**206.** 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.

### 206a. THICKNESSES AND WIDTHS

- i) **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" & narrower shall not be more than  $\frac{1}{8}$ " scant when dry; 8" & wider widths shall not be more than  $\frac{1}{4}$ " scant when dry.

## WESTERN RED CEDAR

- ii) **DRESSED THICKNESSES:** The following thickness shall be considered standard. All other thickness shall be considered special.

Nominal Thicknesses		Finished Thicknesses S2S	.Lengths
1"	cut full size	$2\frac{5}{32}$ "	} 4' & longer multiples of 1'. Not more than 25% 8' & shorter
$1\frac{3}{8}$ "	cut full size	$1\frac{5}{32}$ "	
$1\frac{5}{8}$ "	cut full size	$1\frac{13}{32}$ "	
2"	cut full size	$1\frac{25}{32}$ "	
$2\frac{1}{2}$ "	cut full size	$2\frac{9}{32}$ "	
3"	cut full size	$2\frac{3}{4}$ "	
4"	cut full size	$3\frac{3}{4}$ "	

### 206b. SIZE OF CUTTINGS

- a)  $9\frac{1}{2}$ " 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' & longer.

7

### 206c. 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 - 1, tight  $\frac{5}{8}$ ".

### 206d. "SELECT SHOP"

Each piece contains 70% or more of No. 1 Cuttings.

### 206e. "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.

## WESTERN RED CEDAR

---

### 206f. "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.

### 206g. "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.

## FENCE BOARDS

**210.** Boards of this grade may be rough or surfaced, A.D., K.D. or green, and are especially selected for tight construction.

The grade is determined from the best face. There are three grades: "**SELECT FENCING**," "**QUALITY FENCING**" and "**RUSTIC FENCING**."

### 210a. "SELECT FENCING"

Characteristics and limiting provisions are:

- Checks - not limited.
  - Pin Holes - not limited.
  - Shake - fine.
  - Skips - hit and miss.
  - Splits - short.
  - Knots - sound and tight; knots not firmly fixed or unsound approximately 1/6 width.
  - Spike Knots - approximately 1/2 face width or equivalent.
- S1S Boards may have tolerance of 1/16" over or under the net invoiced thickness.

### 210b. "QUALITY FENCING"

- Checks - not limited.
- Holes - 1", 4 per 12'; grub or teredo equivalent.
- Honeycomb - firm, 1/3 width
- Knots - sound, tight; knots not firmly fixed or unsound approximately 1/3 the width.

## WESTERN RED CEDAR

---

- Spike Knots - approximately 3/4 face width.  
Pin Holes - not limited.  
Shake - not limited.  
Skips - hit or miss.  
Splits - medium.  
Unsound Wood - small spots & streaks equivalent to holes.  
Wane - 1/2 thickness, 1/3 width.  
White specks - firm, not limited  
S1S Boards may have tolerance of 1/16" over or under the net invoiced thickness.

### 210c. "RUSTIC FENCING"

Lumber of this grade is suitable for low quality fencing and permits all characteristics which do not interfere with the use of the piece.

S1S Boards may have tolerance of 3/16" over or under the net invoiced thickness.

Boards resawn from surfaced lumber permits edge skips to not exceed 1/4".

Rough sawn Boards may have a tolerance of 1/4" over or under the invoiced thickness.

Variation in width not to exceed 1/2" in rough material.

### FOUNDATION LUMBER 2" & Thicker, 4" & Wider

**211.** The dimension stability and decay resistance qualities of this material make it ideally suited for use as Foundation Lumber.

There is only one grade of Foundation Lumber: "**FOUNDATION.**"

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

For measurement of knots see Para. 320b.

It is selected from heartwood and must be free of heart centre (FOHC) and free of sapwood.


## WESTERN RED CEDAR

---

### 211a. "FOUNDATION"

Characteristics and limiting provisions are:

- Bark Pockets - not limited.
- Checks - seasoning; if through at ends, limited as splits.
- Shake - through heart shakes up to 2' long, well separated; if not through, single shakes 3' long or 1/4 the length, whichever is greater.
- Skips - hit and miss; in 5% of pieces hit or miss or one heavy skip 2' long.
- Splits - medium.
- Torn Grain - not limited.
- Unsound Wood - peck, narrow streak 1/6 the width.
- Warp - light.
- Knots - sound, unsound or not firmly fixed but well spaced, are permitted in the following sizes or their equivalent displacement:

Nominal	Knot Size Width	* Holes (Any cause)	
4"	2"	1 <sup>1</sup> / <sub>4</sub> "	
6"	2 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	
8"	3"	2"	
10"	3 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>2</sub> "	
12"	4"	3"	
over 12"	4 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>2</sub> "	

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

## WESTERN RED CEDAR

---

7