



# Local Lumber Grading

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# What are we talking about?



Grade Stamped lumber, how it's used and what it costs



Our new amended law AS 41.17 Article 6A – Lumber Grading



Intent of the Alaska Local Lumber Program



Specifications and details of the program



Next steps

# Grade Stamped Lumber

- Visual assessment of lumber to evaluate strength reducing or serviceability characteristics of wood.
- Grade Stamped lumber allows the purchaser to know the wood meets a quality standard
- Grading agencies such as Western Wood Products Association (WWPA) publishes the Western Lumber Grading Rules for appearance grading
- Grading rules are accredited by the American Lumber Standards Committee (ALSC)
- Members of WWPA receive mill training, quality assurance (QA), market analysis, and professional development
- Small mill operators find it economically challenging to become a member of these types of associations



# Alaska State Building Code

- 2012 – International Building Code adopted under the authority of the state fire marshal for fire and life safety provisions
- Alaska Housing and Finance Corporation adopted the 2018 International Residential Code (IRC) for its residential and minimum construction standards.
  - Alaska specific amendments to the IRC Dec 10<sup>th</sup> 2018
- Local jurisdictions (municipalities and housing authorities) may designate local building codes. 2018 IRC for single and double family homes is the common code.
- **2018 IRC requires grade stamped lumber or lumber inspected by a certified lumber grader**



# Cost of grading agency membership in Alaska

- Membership Dues + Monthly site inspections + inspector travel costs = ~\$2200/month
- Membership options for small mill operators:
  - Only pay for membership fees during active periods
  - Stockpile milled material and bring in an inspector when there is enough to justify the travel costs
- Difficult for small mills to produce enough volume to justify these costs and remain profitable



# AS 41.17 Article 6A– Lumber Grading

- SB87 Amended AS 41.17, Forest Resources and Practices to allow for a lumber grading program.
- Introduced by Senator Bjorkman from Nikiski
- Near unanimous support in both legislative bodies
- Signed into Law on 8/30/2023



# State laws, exemptions and legislation.

- Wisconsin Local Use Dimension Lumber - 2007 Wisconsin Act 208
- Tennessee Native Species Lumber Act – TN Code 43-28-31- (2016)
- New Hampshire Native Lumber Law – RSA 434:59-61\*
- Rhode Island Native Lumber Law – 510-00-00 R.I. Code R. 1.16\*
- New York State Fire Prevention and Building Code (The NY code council).
- Massachusetts amendment to the IBC– 780 CMR 2303.1.14\*
- Maine Uniform Building and Energy Code; Code 10.14.1103
- North Carolina – HB 295 - AN ACT TO PROMOTE LOCAL SAWMILLS BY ALLOWING THE USE OF UNGRADED LUMBER IN CERTAIN CIRCUMSTANCES

# What is the Alaska Local Use Lumber Program?

- Intent - An opportunity for small mills to enter home construction markets, address housing shortages, and increase management opportunities of Alaskan forest resources.
- It establishes a lumber grading training program that must be provided at least once a year.
  - Recertification every 5 years
- It allows DOF to
  - prescribe the content of the training program
  - Define the qualifications of the instructor
  - Define the requirements for completing the training
- Allows for lumber to be used in one-, two-, or three-family dwellings
  - Building code situation in Alaska



# What is the Alaska Local Use Lumber Program?

- Allows the individual that milled the lumber to self grade and provide a written certificate of the grades provided.
- Allows a home inspector to reject the lumber
- Local use lumber must be sold to the end user or the contractor building the home



# What is the Alaska Local Use Lumber Program?

## Collaboration with UAF Cooperative

### Extension Service (CES):

- Actively recruiting for a Forest Products Specialist
- Finish lumber grading handbook and air-drying best practices guide w/DOF
- Host a Train-the-Trainer Course to cover grade standards & education that trainers will provide statewide
- Advise and consult related to inspection of training, grading, and implementation at mills.



# What the Alaska Local Use Lumber Program is not?

- A recognized grading Bureau by the American Lumber Standard Committee
- Equivalent to the training received by certified grading agency graders
- A program that can provide Lumber for any construction application
- A grade stamping program



# Why is this program needed in Alaska?

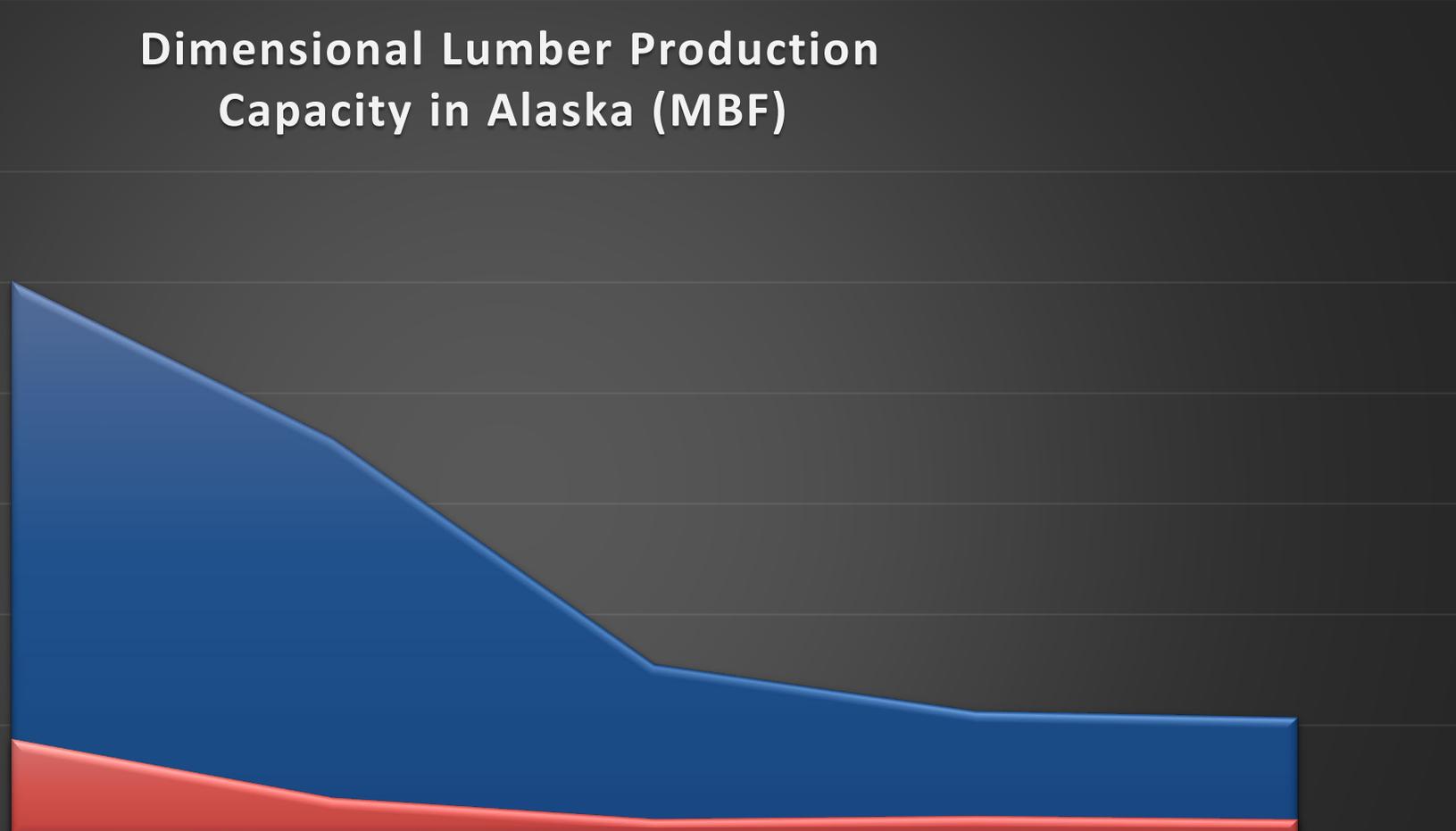
- Volatility of Wood Prices
  - 2021/2022 Wood prices increased dramatically for home construction
  - National Association of Home Builders – wood prices add \$36k to new single family home construction
  - Alaska Housing Finance Corporation – cites high cost of construction as reason new building permits fell 15%
- Canadian import tariffs on softwood were raised to 17.99% in early 2022
  - Alaska imports ~\$20 million annually in wood products from Canada (Canadian trade commission)
- Forest Management
  - Increase forest management opportunities for all ownerships
- Increase economic activity in rural communities
- Increase milling capacity

# Mill Capacity and Production in Alaska



## Dimensional Lumber Production Capacity in Alaska (MBF)

600,000  
500,000  
400,000  
300,000  
200,000  
100,000  
0



	2000	2005	2010	2015	2020
■ Sawmill Capacity	501,850	359,850	155,850	113,650	107,900
■ Estimated Production	87,117	34,695	15,807	18,540	15,544



8. A Sample Form for certificate information to be provided to the purchaser using one page per grade

1) Grade The Alaska Local Use Lumber Grade for this certificate is (circle grade)

Number 2 and better      Stud Grade      Number 3 Grade

(describe any markings or paint)

2) Species or Species Group (list)

3) Moisture Condition: The Alaska local use dimensions lumber moisture condition for this certificate is (circle one):

Green Lumber      Dry Lumber

Additional Notes:

If Green Lumber is PAD – explain:

If Dry lumber has been kiln dried – explain type of kiln and maximum temperature/duration.

4) Surface Conditions: The Alaska Local Use lumber surface condition for this certificate is (circle one)

Surfaced Lumber      Sawn-To-Size Lumber      Rough Lumber

Surfaced Lumber (circle) S4S (surfaced four sides) OR (fill in as appropriate) Surface on one side (S1S), two sides (S2S), one edge (S1E) two edges (S2E) or combination of sides and edges (S1S1E, S1S2E, S2S1E)

Sawn-To-Size Lumber (circle) initially sawn-To-Size OR (fill in as appropriate) Resawn on one edge (S1E), two edges (S2E), one side (S1S), or two sides (S2S) or combination (S1S1E, S1S2E, S2S1E, S4S)

5) Sizes and Tally for other than rough lumber, The Alaska Local Use Lumber Sizes for this certificate is.

Standard Thickness and Width      Standard Lengths

For rough lumber and non-standard sizes (and any non-standard lengths) provide actual sizes. Provide tally including number of pieces in sizes of thickness/width/length and total tally – use back of sheet or attached sheets if necessary.

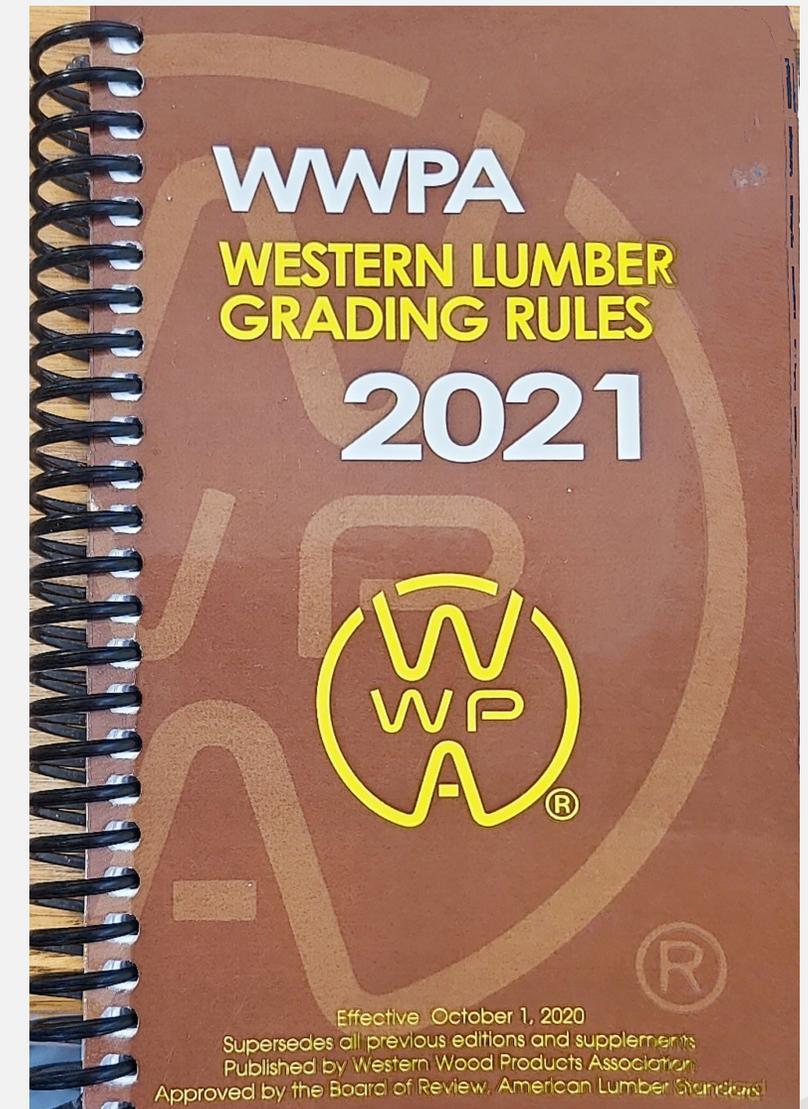
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# 5 Designations

- Grade (Substitute Equivalent)
- Species or Species Group
- Moisture Content
- Surface Condition
- Size and Talley
  
- Must be recorded and provided to the purchaser

# Substitute Equivalents to accepted Bureau grades

- Number 2 and Better – S.E. of No. 2 in Structural Light Framing and Structural Joists and Planks Grade. S.E of the “Standard Grade” within the light framing grade.
- Stud Grade – S.E. of the “Stud Grade”
- Number 3 – S.E of No.3 in Structural Light Framing and Structural Joists and Planks Grade. S.E of the “Utility Grade” within the light framing grade.



# Defect and Standards

Defect Type		#2 and Better	Stud	#3
Knots	Max Knot Size	25% of Board Width	33% Board Width	
	Quality	Sound, Fixed, No Advanced decay	Any Quality but not a hole	
	Spacing	Allowed 2 times maximum knot size within 6-inch section		
Holes or non-wane unsound wood	Max Size	25% of Board Width	33% of Board Width	
	Spacing	Allowed Equivalent of maximum hole size within 2 lineal feet		
Wane	Max from one edge	1/3 Width, 1/3 Thickness	1/2 Width, 1/3 thickness	1/2 Width, 1/2 Thickness
	Total Wane	1/2 Width, 1/2 Thickness	3/4 Width, 1/2 thickness	3/4 Width, 3/4 Thickness
Split	Max. Length	1 1/2 board width	2 times board width	1/6 <sup>th</sup> board length
Shake	End Shake	Limited as Splits		
	All Other Shake	Allowed Maximum 2' long		Allowed Maximum 1/3 Board Length
Slope of Grain	Deviation per Length	1 in 8	1 in 4	
Warp	Severity	Light	Light	Medium
Manufacturing	Severity	Heavy		

## Design Values and Spans for Alaskan Species Lumber

Historically, most Alaskan timber was exported to international markets, with a minimum of manufacturing. In recent years, Alaskan sawn lumber products have become more popular for use in structural applications within the state and elsewhere. New markets for Alaska Yellow Cedar, Alaska Hemlock and Alaska Spruce lumber have created a need for technical information on the structural capabilities of these three species/species groups.

In recognition of the expanding use of Alaskan species in construction, the Ketchikan Wood Technology Center, in conjunction with Western Wood Products Association, conducted testing to determine strength properties. WWPA submitted the resultant test data to the American Lumber Standard Committee, Inc., which formally approved design values for Alaska Yellow Cedar, Alaska Hemlock and Alaska Spruce dimension lumber products.

Each Alaskan species has a distinctive grademark to differentiate its unique properties.

### ALASKA YELLOW CEDAR

Alaska Yellow Cedar has traditionally been prized in international markets for its natural durability and grain structure. It is a fine-grained, short-fibered, aromatic cedar and lumber from the species is generally dense, hard and resilient.

The growth range of Alaska Yellow Cedar stretches from Prince William Sound southeast to the Canadian border. It grows primarily on steep terrain, at elevations of 500 feet or more. Much of the commercial timber in Alaska Yellow Cedar is found in southeast Alaska.



### ALASKA HEMLOCK

Alaska Hemlock includes Western Hemlock and Mountain Hemlock. Its fiber is light and bright in color, varying from a creamy, nearly-white to a light, straw-brown, with little variation in color between the heartwood and sapwood.

Alaska Hemlock trees grow to between 2 and 4 feet in diameter and up to 150 feet in height. It grows in the same forest region as Alaska Yellow Cedar, with nearly all commercial production of Alaska Hemlock in the southeast part of the state.



### ALASKA SPRUCE

Spruce species native to Alaska include White Spruce and Sitka Spruce. The growth range of the Spruce species stretches across Alaska, from the river valleys of the interior to the temperate rainforests of the southeast.



### DESIGN VALUES AND SPANS

This publication provides technical information for Alaska Yellow Cedar, Alaska Hemlock and Alaska Spruce lumber, including base design values, size-adjusted values, and spans for typical floor, ceiling and roof applications.

These design values have been incorporated in the National Design Specification for Wood Construction (NDS) Supplement of Design Values for Wood Construction which are recognized by the U.S. model building codes such as the International Building Code (IBC) and the NFPA 5000 Building Code.

# Applicable Species

- Only applies to **softwood** based on **Design Values and Spans** published by WWPA and Ketchikan Wood Technology Center (Tech Note 2005-01)
- Alaska Spruce (White and Sitka)
- Alaska Hemlock,
- Alaska Yellow Cedar

# Moisture Content

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- Dry – less than or equal to 19% MC
  - Can be air dried or kiln dried
  - If kiln dried, document type of kiln, maximum temp and duration.
- Green – Greater than 19%MC
  - Partially Air Dried – Green lumber that has started to go through the drying process
- Heat Treated lumber – certified by third party



# Surface Condition

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- Surfaced lumber –
  - dressed to attain smoothness and uniformity. S4S, S2S, S1S, S1E, S2E, S2S1E, S1S2E, S1S1E
- Rough –
  - Saw or other marks from primary manufacture are present
  - Manufacturing defect allowed



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# Size and Tally

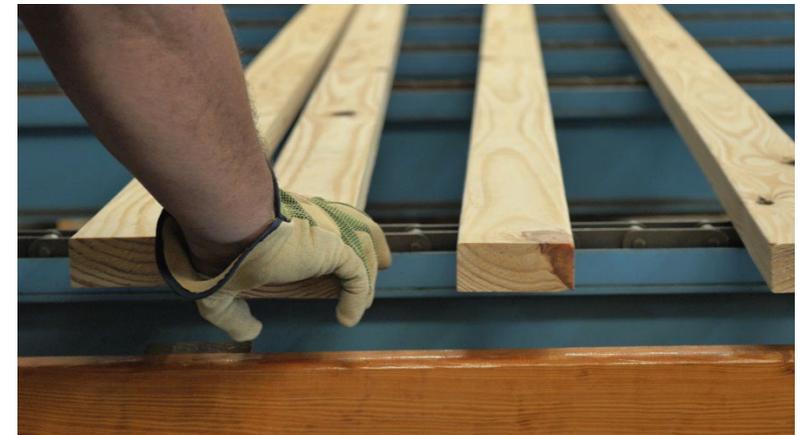
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- Thickness and Width
  - Standard Sizes for Surfaced Lumber
  - Dry Rough – at least 1/8" larger than surface width and thickness for surfacing
  - Green Rough – Widths and Thickness shall be specified in written certification
- Length
  - Standard 8' or greater in 2-foot intervals unless purchaser specified
- Total Tally by nominal thickness, width and length in each grade group.



# Alaska Training and Certification

- One day free class focusing on visually grading lumber to the three Alaska grades.
  - Issuance of Alaska Local Use Lumber handbook
  - Issuance of Air-Drying Best Practices document
  - Certificate
- Offered at least annually in Southeast, Southcentral and Interior
- Recertification required every five years



# Selling the lumber (special conditions)

- Mill owner/operator sells the lumber directly to the end user or to the contractor building the home
- Lumber sale must include documentation that describes the 5 designations (grade, species, moisture content, surface condition, size)
- Lumber sale must include a copy of the mill owner's certification with the Alaska Local Use Lumber program
- Building inspector may refuse the lumber



# Next Steps

- Address the building codes and minimum construction standards to allow for Alaska local lumber
- Hire UAF CES Forest Products Specialist
  - Advertised now at:  
<https://careers.alaska.edu/en-us/job/525877/forest-products-specialist>
- Finalize the Alaska Local Lumber Handbook
- Develop the training Curriculum
- Offer the Training



# Thank you!

