

NHLA GRADING RULES FOR NORTH AMERICAN HARDWOODS



NHLA



The NHLA grades are based on the percentage of clear-defect free wood on a board. The measurements of this percentage are referred to as clear-cuttings. Other than the FAS grades, the grade of the board is determined from the percentage of these clear cuttings and do not consider defects outside of the clear areas.

MEASUREMENT

The NHLA grades are determined on an imperial measurement system using inches and feet. Additionally, the rules were developed with random width and length lumber in mind. A board foot is the unit of measurement.

B.F.: one foot long, one foot wide, one inch thick
(One foot = 0.3025 meters; one inch = 25.4 mm)

To determine the board feet in a board:

Multiply the width in inches by the length in feet and divide by 12. If the lumber is thicker than one inch, multiply by the thickness.

Surface Measure (S.M.) is the surface area of the board in square feet. The percentage of clear wood required for each grade is based on the surface measure (S.M.) not the board feet, thus all boards, no matter the thickness, are graded the same.

To determine S.M.:

Multiply the full width of the board by the standard length of the board and divide by 12, rounding to the nearest whole number.

Examples of determining S.M.:

$$6 \frac{1}{2}'' \times 8' \div 12 = 4 \frac{1}{3} = 4' \text{ S.M.}$$

$$8'' \times 12' \div 12 = 8' \text{ S.M.}$$

$$10'' \times 13' \div 12 = 10 \frac{10}{12} = 11' \text{ S.M.}$$

Once grade is established, multiply S.M. x thickness to get board feet.

$$\text{Example: } 6 \frac{1}{2}'' \text{ W} \times 8' \text{ L} \times 2'' \text{ TH} = 8 \text{ BF}$$

Note: The grade is based on S.M., not board feet.

METRIC CONVERSIONS

$1'' = 25.4\text{mm}$ $1\text{m}^3 = 424 \text{ board feet (B.F.)}$
 $1\text{m} = 3.281 \text{ feet}$ $1\text{m}^3 = 35.315 \text{ cubic feet (Cu. Ft.)}$
 $1,000 \text{ B.F.} = 2.36 \text{ cubic meters}$
 (MBF) (m^3)

STANDARD THICKNESS FOR ROUGHSAWN & SURFACED LUMBER

Thickness of rough sawn lumber is expressed in quarters of an inch. When grading rough sawn lumber, defects such as checks, stain, and warp are not considered if they will surface out at standard surfaced thickness (S2S). The standard thicknesses and surfaced thicknesses with their metric equivalent are shown below.

	Rough	S2S		Rough	S2S
3/4	19mm	14.2mm	8/4	50.8mm	44.4mm
4/4	25.4	20.6	10/4	63.5	57.2
5/4	31.8	27	12/4	76.2	69.8
6/4	38.1	33.3	16/4	101.6	95.2

MEASUREMENT OF KILN DRIED LUMBER

Net Tally: Actual board feet after kiln drying

Green Tally: Actual board feet before kiln drying

Shrinkages: Widths can be $\frac{1}{4}''$ below minimum required.

Thickness can be $\frac{1}{16}''$ below minimum required.

THE STANDARD GRADES

All boards are graded from the poor face. The clear face percentage for each grade is determined by measuring the width of the clear area in inches multiplied by the length of the clear area in feet. The total is referred to as cutting units.

FAS

Minimum percentage clear: S.M. x 10 or 83 ⅓% (10/12)

Minimum size board: 6" x 8'

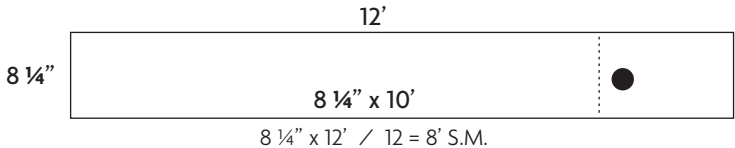
Minimum size clear cuttings: 4" x 5' or 3" x 7'

Example: Determine S.M.

Determine poor face

Measure clear cutting available

Compare with required clear percentage



Clear cutting: 8 ¼" x 10' = 82 cutting units

Required cutting units = S.M. x 10 = 80 cutting units

Grade of the board is FAS

Note: Both faces must meet this Minimum Requirement.

FAS = FAS on two faces.

FAS ONE FACE (F1F) AND SELECTS

Minimum size board: F1F: 6" x 8' Sel 4" x 6'

These two grades combine the standard grades of FAS (on the better face) and No. 1 Com (on the poor face).

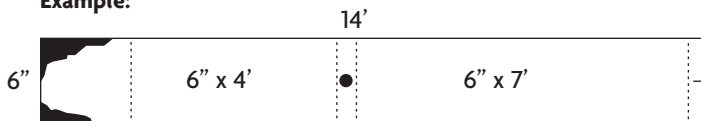
NO. 1 COMMON

Minimum percentage clear: S.M. x 8 or 66 $\frac{2}{3}$ % (8/12)

Minimum size board: 3" x 4'

Minimum size cuttings: 3" x 3' or 4" x 2'

Example:



$$6" \times 14' / 12 = 7' \text{ S.M.}$$

2 clear cuttings = 6" x 4' = 24 c.u. 6" x 7' = 42 c.u.

66 cutting units total

Required cutting units = S.M. x 8 = 56 c.u.

Grade of board is No. 1 Common.

Note: Both faces must meet this Minimum Requirement.

No. 1 Com. = No. 1 Com. on two faces.

NO. 2A COM

Minimum percentage clear: S.M. x 6 or 50% (6/12)

Minimum size board: 3" x 4'

Minimum size cuttings: 3" x 2'

Note: When No. 2A Com. on poor face, the better face does not matter.

NO. 3A COM

Minimum percentage clear: S.M. x 4 or 33 $\frac{1}{3}$ % (4/12)

Minimum size board: 3" x 4'

Minimum size cuttings: 3" x 2'

	FAS	FIF	SEL	1Com	2ACom	3ACom
Minimum Board	6"x8'	6"x8'	4"x6'	3"x4'	3"x4'	3"x4'
Minimum Size Cuttings	4"x5' 3"x7'	Better face must meet FAS requirements. Poor face must meet No. 1 Com requirements.		3"x3' 4"x2'	3"x2'	3"x2'
% Clear	SM x 10 (83 1/3%)			SM x 8 (66 2/3%)	SM x 6 (50%)	SM x 4 (33 1/3%)
# Clear Cuttings	SM/4			SM+1/3	SM/2	Unlimited

When specified for export, a comparison can be made respectfully between export grade names of Prime and Comsel with the NHLA grades of FAS and No. 1 Com. It is necessary to consult with your supplier as to the exact specifications being applied to these export grade names.



NHLA is a member of AHEC.

National Hardwood Lumber Association

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