
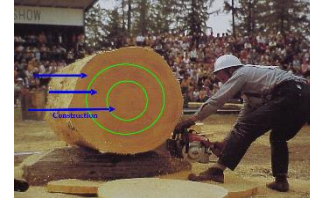


NLGA Light Framing All Characteristics

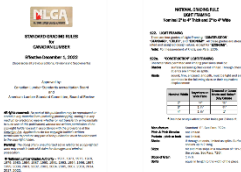
Lesson 12

I. General Information

- a) **NLGA Light Framing:** Used for lumber with large knots.
 - b) **Stress Grades:** Specify minimum requirements and maximum characteristics.
 - c) **National Grading Rule:** Prohibits combinations that reduce strength.
- 



II. NLGA Overview



- a) **Incorporation:** January 12, 1971.
- b) **Responsibility:** Writing and maintaining Canadian lumber grading rules.
- c) **Size Classification:** 2-4 inches thick and 2-4 inches wide.

III. Grades of Light Framing

- a) **Grades:** Construction, Standard, Utility, Economy.
- b) **Purpose:** Lower design values for residential construction.
- c) **Stress-Rated:** All except Economy.
- d) **Grading Considerations:** All four sides and both ends must be evaluated.

[illegible]

IV. Grading Rules

- a) **Uniform Specifications:** Applicable to all species.
- b) **Finished Sizes:** Shown in NLGA paragraph 820B.
- c) **Grading Basis:** Pieces graded from the poorest face.

V. Characteristics and Allowances

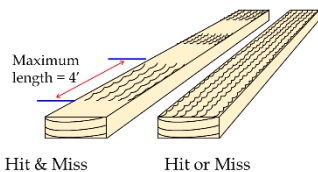
- a) **No Rate of Growth Specification:** Pockets not limited in size or occurrence.

VI. Shakes:

- a) **Construction:** Not through, max 2 feet.
b) **Standard:** Through max 2 feet, not through up to 1/4 length or 3 feet.
c) **Utility:** Through max 1/3 length, not through full length.



VII. Skips:



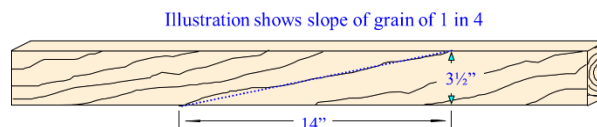
- a) **Construction:** Hit & Miss, max 1/16 inch deep, 4 feet long.
b) **Standard:** Hit or Miss, max 1/16 inch deep, full length.
c) **Utility:** Heavy skip, max 1/8 inch deep, full length.
d) **Economy:** Scantness, max 1/4 inch deep, full length.

VIII. Splits:

- a) **Construction:** Equal to nominal width.
b) **Standard:** 1.5 times nominal width.
c) **Utility:** 1/6 length.
d) **Economy:** 1/3 length.

IX. Slope of Grain

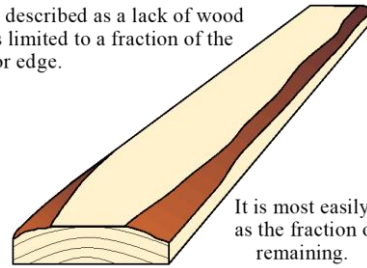
- a) Measure at the worst area, parallel to the slope.
b) **Calculation:** Divide the length by the width of the piece to get a ratio.
c) **Grading Rules:**
i. **Construction:** 1:6 ratio.
ii. **Standard and Utility:** 1:4 ratio.
iii. **Economy:** No requirement.
d) **Ratio Interpretation:** Higher ratio = straighter grain; lower ratio = steeper grain.
i. 1:8 is better than 1:6; 1:6 is better than 1:4.



X. NLGA Light Framing Wane Allowance

- a) **Basic Allowance:** Full length, on both edges.
 - i. **Standard Grade:** $\frac{1}{3}$ width and $\frac{1}{3}$ thickness.
- b) **Extra Allowance:** Up to $\frac{2}{3}$ thickness, must fit within the basic allowance.
- c) **Measurement:** Measure the remaining good wood, not the wane.

Wane is described as a lack of wood and is limited to a fraction of the face or edge.



It is most easily measured as the fraction of wood remaining.

XI. Measuring Wane

- a) **Protocol:** Measure the good wood remaining.
- b) **Standard Grade:** Maximum wane depth is $\frac{2}{3}$ thickness.
- c) **Finished Size:** 1.5 inches thick; minimum good wood is 0.5 inches.

XII. Pin Holes

- a) **Cause:** Ambrosia Beetle.
- b) **Appearance:** Small black holes, max $\frac{1}{16}$ inch diameter.
- c) **Allowance:** Based on knot hole size.
- d) **Construction Grade:** 1-inch knot hole every 3 feet = 192 pin holes for 12 feet.
- e) **Look-Up Table:** Provided for simplicity.



XIII. Peck

- a) **Definition:** Channeled or pitted areas in cedar and cypress.
- b) **Grades:**
 - I. **Standard:** Streaks up to $\frac{1}{6}$ width.
 - II. **Utility:** Streaks up to $\frac{1}{3}$ cross-section.
 - III. **Economy:** Streaks up to $\frac{3}{4}$ cross-section.
- c) **Measurement:** Between lines parallel to edges.



XIV. Grub Holes

- a) **Description:** Larger than pin holes, oval or circular, filled with powdery excrement.
- b) **Location:** Found in felled timber, living trees, and fire-killed timber.
- c) **Impact:** More serious for strength.
- d) **Allowance:** Based on knot hole size; 12 grub holes per 1-inch knot hole.
- e) **Example:** 12-foot piece with 4 inches of knot holes allows 48 grub holes.
- f) **Look-Up Table:** Provided for simplicity.



XV. Teredo Holes



- a) **Description:** Caused by marine borers, clean-cut, uniformly circular, no excrement.
- b) **Size:** Approximately 1/4 inch in diameter.
- c) **Allowance:** Same as grub holes; 12 teredo holes per 1-inch knot hole.
- d) **Look-Up Table:** Provided for simplicity.

XVI. White Specks and Honeycomb

- a) **White Specks:**
 - i. **Description:** Small pits filled with white substance, caused by fungus.
 - ii. **Size:** 1/4 to 1 inch long, 1/16 inch wide.
 - iii. **Impact:** No effect on utility.
 - iv. **Allowance:** Standard grade allows up to 1/3 volume; no restrictions in Utility and Economy.
- b) **Honeycomb:**
 - i. **Description:** Larger, more numerous pits running together.
 - ii. **Impact:** No effect on utility.
 - iii. **Allowance:** Standard grade allows up to 1/6 width; Utility allows any amount; no restrictions in Economy.



XVII. Unsound Wood

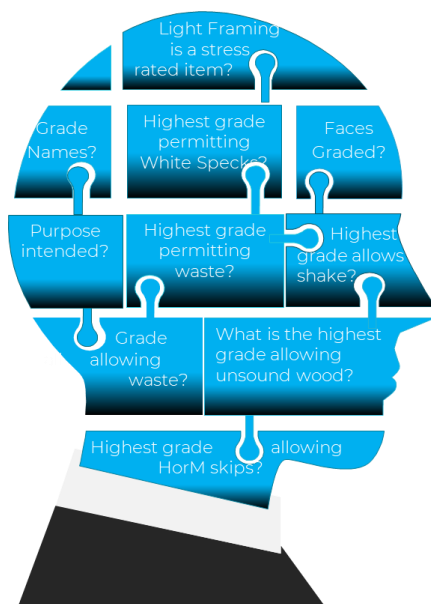
- Unsound wood is a disintegration of the wood or breaking down of the fiber due to the action of wood-destroying fungi. Dote, rot, and decay mean the same as Unsound wood.
- Standard permits one spot of unsound wood, one-twelfth-the-width by two-inches long, or equivalent smaller spots.
- Utility permits unsound wood to occupy a maximum of one-third the cross section.
- Economy allows scattered spots of unsound wood up to three-quarters of the cross section of the piece and each spot can be up to two-feet long.



XVIII. Waste

- Description:** Characteristics larger than allowed in Economy grade, requiring removal.
- Allowance:** Only in Economy grade.
- Limitations:** Pieces 9 feet or longer may contain waste up to 25% of length, not within 2 feet of ends.

NLGA Light Framing All Characteristics Except Knots Review



Some Thought-Provoking Concepts

- | | |
|---|---|
| 1 Light Framing is a stress rated item?
Yes | 6 What is the highest grade allowing waste?
Economy – 75% cross section |
| 2 Grade Names?
Construction, Standard, Utility, and Economy | 7 The highest grade allowing shake?
Construction – not thru up to 2'. |
| 3 Faces Graded?
Worst face | 8 What is the highest grade allowing 1 in 4 SOG? Standard |
| 4 What is the highest grade allowing White Specks?
Standard – 1/3 volume | 9 What is the highest grade permitting unsound wood?
Standard – 1/12 width x 2" long |
| 5 Purpose Intended?
Strength | 10 What is the highest grade allowing HorM skips?
Standard |