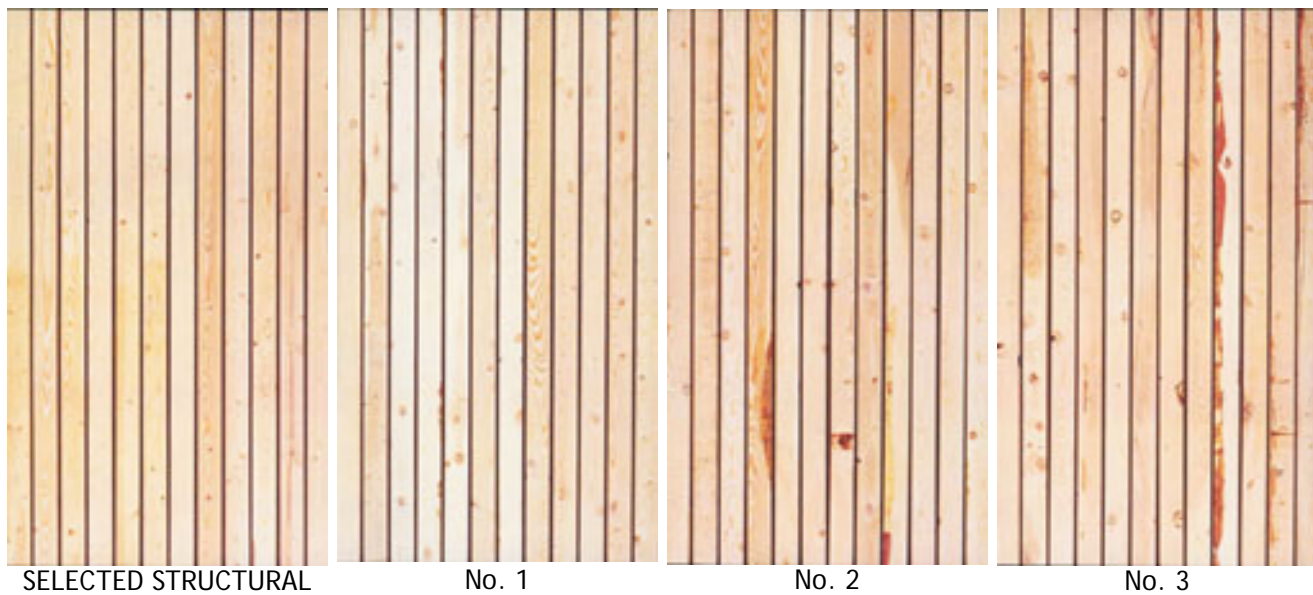


Frequently Asked Questions

Lumber Grades by Rachel Smith

The truss industry uses about 36 percent of the framing lumber consumed in the United States. Dimensional framing lumber is graded for structural applications like joists, rafters and trusses. These structural framing grades can be determined by two methods—visual inspection or machine testing.

Visual inspection requires trained and certified lumber graders to inspect each piece of lumber and assign it a grade based on the amount of lumber and manufacturing characteristics like knots, wane and slope of grain. The highest visual grade for framing lumber is select structural, then in order, No. 1, No. 2 and No. 3. Each reduction in grade shows a corresponding increase in lumber characteristics as illustrated in the figures below.



Mechanical testing uses testing equipment to measure an actual property like stiffness or density for each piece of lumber. Then a machine stress rated (MSR) or a mechanical evaluated lumber (MEL) grade is assigned to each piece. MSR and MEL grades are not widely used outside the truss and glulam manufacturing industries. An example of MSR grading is 1650Fb -1.4E. An example of MEL grading is M-23. In both cases, the higher grades have higher numbers and vice versa.

No matter which grading process is used, the lumber grade corresponds to a set of structural properties that predict how the lumber will behave in compression, tension, bending, shear and deflection. These strength properties are stored in truss design software programs and used to analyze how lumber sizes and species will perform in specific truss designs. The lumber properties of each cross sectional area, grade and species of lumber are listed in the National Design Specification for Wood Construction (NDS) Supplement from the American Forest & Paper Association. They may also be found in grading booklets from any of the grading agencies and the Southern Pine Use Guide

from the Southern Pine Council, the Western Lumber Product Use Manual from the Western Wood Products Association and the U.S. Span Book for Major Lumber Species from the Canadian Wood Council.

QUESTION:

What does KD-HT mean on a lumber grade stamp? (See Below on “How to Read a Grade Stamp”.)

How to Read a Grade Stamp:

The diagram illustrates three types of lumber grade stamps with color-coded boxes highlighting specific parts:

- MSR Grade:** MACHINE RATED (red), LMA (blue), 8 (green), 2 (green), S-DRY (purple), S-P-F (blue), 2400f (yellow), 2.0E (yellow).
- MEL Grade:** SPIB (blue), KD19 (purple), 7 (green), 1800fb (yellow), 1.5 E (yellow), M-16 (purple), 1300ft (yellow), 1750fc (yellow).
- Visual Grade:** 12 (green), WWP (blue), 2 (green), S-DRY (purple), HEM FIR (blue).

Legend:

- Red line: Lumber Grade
- Blue line: Species Group
- Yellow line: Lumber Strength Properties
- Purple line: Moisture Content at the time of surfacing
- Green line: Mill Producer
- Dark blue line: Grading Agency

Moisture Content Legend:

- MC15 or KD15 for a moisture content of 15 percent or less;
- S-DRY, KD, or KD19 for a moisture content of 19 percent or less;
- S-GRN for unseasoned with a moisture content of more than 19 percent

ANSWER:

KD stands for kiln dried and HT stands for heat-treated. This is a new designation added to some softwood lumber grade stamps since October 1, 2001. According to Kevin Cheung of Western Wood Products Association, “Western lumber mills and others are now producing lumber showing a KD-HT mark, indicating the wood has been kiln dried and heat-treated.

“The KD-HT mark was added to meet new European Union regulations for wood pallet and crating materials,” Cheung stated. “The mark indicates that the lumber has been heated to a core temperature of 56°C for a minimum of 30 minutes and is dried to a maximum moisture content of 19 percent or less. Many mills are adding the new designation to grademarks. For structural framing applications, including wood trusses, the KD-HT mark can be considered the same as DRY and KD.”

questions visit the [WTCA website](#).

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