

Truss Technology

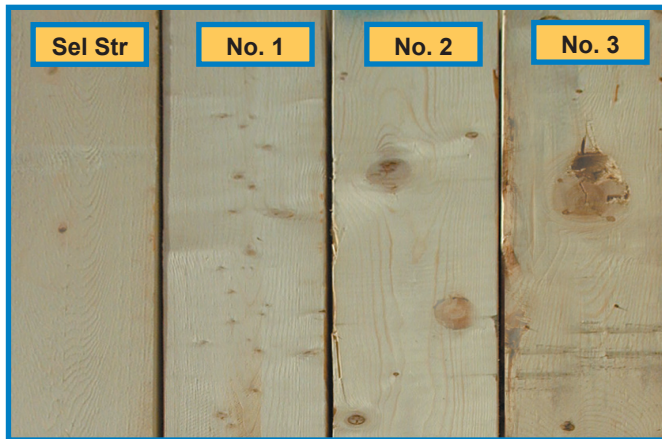
IN BUILDING



Lumber Grades

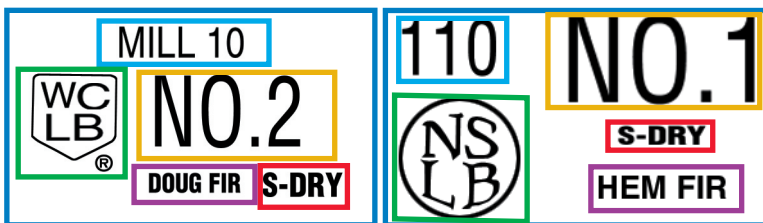
Dimension lumber is nominal, 2" to 4" thick lumber graded by visual inspection or machine grading. Visually graded structural lumber is inspected for a range of natural and drying characteristics, and manufacturing imperfections that affect structural performance and appearance. The following illustrates visual grades of Select Structural (Sel Str), No. 1, No. 2 and No. 3.

Visual Grades



- Sel Str** Sound, firm, encased and pith knots are to be tight, well spaced and limited up to 7/8". Unsound or loose knots or holes are limited up to 3/4", one per 4' lineal.
- No. 1** Knots must be of same type as in Sel Str grade, up to 1-1/2". Unsound or loose knots or holes are limited up to 1", one per 3' lineal. Wane is allowable.
- No. 2** Well-spaced knots of any quality up to 2", with one hole up to 1-1/4" per 2' lineal. Wane and skips are included.
- No. 3** Knots of any quality can be up to 2-1/2", with one hole up to 1-3/4" per lineal foot. Wane and skips are included.

Visual Grade Stamps



- ...Assigned Grade**
- ...Species Group:** The species commonly used in the truss industry are Southern Pine (SP), Spruce Pine Fir (SPF), Hemlock-Fir (Hem-Fir) and Douglas Fir-Larch (D. Fir-L).
- ...Moisture Content Designation at the Time of Surfacing:**
 MC15/KD15 = moisture content of 15% or less.
 S-Dry/KD/ KD19 = moisture content of 19% or less.
 S-GRN = unseasoned with a moisture content of more than 19%.
- ...Mill Identification:** Where the lumber originated.
- ...Grading Agency:** Grading agencies must be certified by the American Lumber Standard Committee (ALSC).
 Contact ALSC at: P.O. Box 210
 Germantown, Maryland, 20875-0210
 phone: 310-972-1700 email: alsc@alsc.org

Agencies Accredited by the Board of Review of the American Lumber Standard Committee

- Alberta Forest Products Association (AFPA)
- California Lumber Inspection Service (CLIS)
- Canadian Lumbermen's Association (CLA)
- Canadian Mill Services Association (CMSA)
- Canadian Softwood Inspection Agency, Inc. (CSI)
- Cariboo Lumber Manufacturers Association (CLMA)
- Central Forest Products Association (CFPA)
- Gateway Lumber Inspection Bureau (GLIB)
- Interior Lumber Manufacturers Association (ILMA)
- Macdonald Inspection (MI)
- Maritime Lumber Bureau (MLB)
- Newfoundland and Labrador Lumber Producers Association (NLPA)
- Northeastern Lumber Manufacturers Association (NeLMA)
- Northern Forest Products Association (NFPA)
- Northern Softwood Lumber Bureau (NSLB)
- Ontario Lumber Manufacturers Association (OLMA)
- Pacific Lumber Inspection Bureau (PLIB)
- Quebec Lumber Manufacturers Association (QLMA)
- Redwood Inspection Service (RIS)
- Renewable Resource Associates, Inc. (RRA)
- Southern Pine Inspection Bureau (SPIB)
- Timber Products, Inc. (TP)
- West Coast Lumber Inspection Bureau (WCLIB)
- Western Wood Products Association (WWPA)

Machine graded lumber offers certain advantages. Machine graded lumber allows designers more confidence in the lumber design values used in trusses. Grading lumber by mechanical testing is accomplished by measuring a characteristic (such as stiffness or specific gravity) that correlates well with the structural properties.

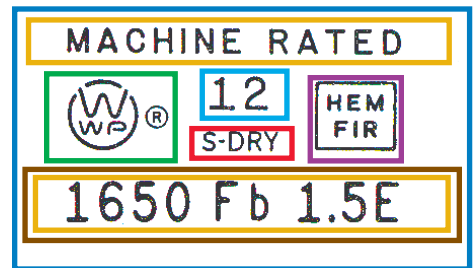
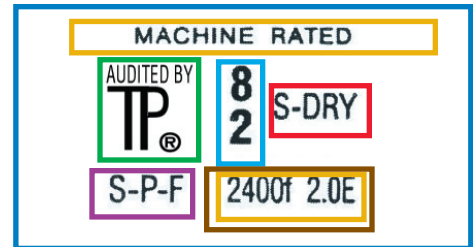
There are two types of Machine Graded Lumber: Machine Stress Rated (MSR) Lumber and Machine Evaluated Lumber (MEL).

MSR: A grading process that has been used in North America for almost 30 years, and is available as two-inch thick lumber in a variety of species, grades and sizes. It is distinguished from visually graded lumber in that each piece is nondestructively tested. Mechanical stress rating equipment tests for bending stiffness and sorted into modulus of elasticity classes before it is subjected to visual inspection. The MSR grade 1650f-1.5E designates a bending stress of 1650 psi and a stiffness of 1.5 million psi in its grade name.

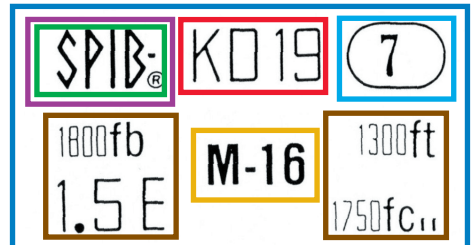
MEL: A grading process that has been used since 1994. MEL is also nondestructively tested to determine properties. The MEL grades are designated by the letter “M” followed by a number, M-5 through M-28 with M-28 being the highest. This number does not represent any particular strength property.

- ...Design Values
- ...Assigned Grade
- ...Species Group: The species commonly used in the truss industry are Southern Pine (SP), Spruce Pine Fir (SPF), Hemlock-Fir (Hem-Fir) and Douglas Fir-Larch (D. Fir-L).
- ...Moisture Content Designation at the Time of Surfacing:
 - MC15/KD15 = moisture content of 15% or less.
 - S-Dry/KD/ KD19 = moisture content of 19% or less.
 - S-GRN = unseasoned with a moisture content of more than 19%.
- ...Mill Identification: Where the lumber originated.
- ...Grading Agency: Grading agencies must be certified by the American Lumber Standards Committee (ALSC).

MSR Grade Stamps



MEL Grade Stamps



To view a non-printing PDF of this document, visit www.sbcindustry.com/tbgrades.



Truss Technology in Building
 An informational series designed to address the issues and questions faced by professionals in the building construction process.



6300 Enterprise Lane • Madison, WI 53719 • 608/274-4849 • 608/274-3329 fax • www.sbcindustry.com • wtca@sbindustry.com

Copyright © 2002-2009 Structural Building Components Association. All Rights Reserved. Reproduction of this document, in any form, is prohibited without written permission from the publisher. This document should appear in more than one color. Printed in the United States of America.