

American hardwood lumber grading Q&A series: article no. 6

February 2008

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The Grading Rules for North American hardwood lumber were established 100 years ago by the National Hardwood Lumber Association (NHLA), which is now headquartered in Memphis, Tennessee. I have been writing a series of articles for the last year, answering a variety of questions pertaining to the application of those grading rules. This month's article will deal with grading issues that originate at the sawmill and the procedures that shipping inspectors must go through before the lumber is loaded in to a container for shipment.

Can you describe the procedures taken in the American sawmill to produce my container of FAS red oak lumber?

First of all, it is important to consider that all lumber must be graded and sorted when it is freshly sawn.. This means that an inspector must look at everything that is coming out of the sawmill. This production includes any or all of the following; all of the Standard Grades from FAS to No. 3 Common, which would be used for furniture, flooring, or any traditional application for hardwood lumber; boards below No. 3 Common that can only be used for pallets or crates; various thicknesses in each grade; special sorts for special orders; timbers or cants for industrial type uses; mis-cuts and lumber mis-milled etc. Also, consider that an inspector is asked to grade a minimum of 12,000 board feet per day and you can imagine the multitude of decisions needed to be made every time that chain is turned on. Also keep in mind that the FAS grade is probably not more than 20% of the total production of an average run of logs.

After the inspector grades a piece of lumber, he puts a mark on the board to let the men down the chain know which package to put the board in. The lumber is not only sorted by grade but by length, thickness, and sometimes by colour and width, depending on the species and upcoming order file. These upcoming orders will also determine if the lumber will be placed on drying sticks for kiln drying or simply flat piled to be shipped green. If the lumber is to be shipped green, the packages are banded with strapping and put on a truck as soon as possible and shipped out.

Can you expound a bit on the kiln drying process?

Your FAS lumber that is to be dried at the mill has been put on kiln dried sticks and must begin the slow process of drying. Regarding the sticks used: not only are they dried, but they must be of uniform thickness and most are moulded into a detail that reduces contact between the stick and the board. These must be placed uniformly one on top of the other and supported by

crosspieces from one package to another. Improper sticker alignment will lead to warped and twisted lumber. Depending on a number of factors, most importantly species and thickness, the lumber is put in air-drying sheds or directly in the dry kiln. To give you an idea of time, a 4/4 or one inch thick red oak board will take approximately 3-4 months to be properly dried. An 8/4 or two inch red oak board could easily take up to a year to properly dry to the desired moisture content of between 6-9%. This sounds like an awfully long time, but any shortcuts in the drying process can result in a number of undesirable outcomes, which may ruin your FAS lumber.

OK, my lumber has gone through the drying process, is it ready for me?

Almost. The lumber needs to be taken off the sticks and graded again. This dry inspection will insure that no boards have degraded in the drying process. The inspector might have to trim off a bad end or edge a board to insure that you receive the FAS grade you are paying for. The lumber is then sorted for length, flat piled and banded with steel strapping. At this time most companies will have a tally man to end tally the lumber, taking into account the widths and lengths. This tally can then be converted in board feet, cubic metres, or whatever form of measurement agreed to in the sales contract.

Is there a limit to the amount of splits I receive on my FAS lumber?

Yes, there are six defect limitations that will disqualify a board from the FAS grade. These defects must be considered first by the inspector when the lumber is freshly cut. Usually, they are trimmed or edged off when the lumber is green, insuring that the FAS grade is maintained throughout the drying process.

Splits are limited in length to twice the surface measure (SM) or one lineal foot of standard length, whichever is greater. For example a board that is 6 inches wide and 8 feet long would have a 4 foot SM. The maximum length of split allowed would be 12 inches or one foot. A board that is 8 inches wide and 12 foot long would have an 8 foot SM and the longest split on the board cannot exceed 16 inches. The general rule of thumb when grading fresh sawn lumber is to trim back any splits in excess of one foot. The idea here is that during the drying process the likelihood of the split increasing is greater and its removal will help out on the dry inspection. On your dry lumber though, the rule stands as described above. Remember, the board must still yield FAS outside of the split area so it will not affect the clear area you are paying for.

This brings up a comment I want to make with regards to the other five defects restricted in the FAS grade, which I will discuss in great detail next month. I was at the AHEC European Convention in Amsterdam last October and a buyer asked why he receives an FAS, 10 foot board, that has a one foot split on it. "Why can't my supplier just cut this one foot off and give me a well manufactured FAS board without this waste?" An AHEC member who is a large supplier of hardwoods around the world replied, "My buyer wants me to cut this off and then he wants to restrict me to a small percentage of 9 foot lengths I can include in a shipment. Even though this board makes the NHLA grade, my buyer wants it cut off. I need to adhere to the NHLA grades to be competitive and maximize my yields to keep the price in line."

After reading the process an American supplier goes through to bring this valuable and renewable resource to markets around the world, some compassion, understanding, and

appreciation of this wonder of nature is needed. To be good stewards of the forest we need to respect wood as the gift it truly is.

Post Script: If you have any questions regarding the NHLA grading rules or terminology pertaining to American hardwoods you can contact me at: [Dit e-mailadres is beschermd tegen spambots. U heeft Javascript nodig om het te kunnen zien.](#)
I will try to answer all in upcoming issues. For more information on available literature pertaining to the grades, as well as species and upcoming seminars, please contact AHEC directly.

American Hardwood Export Council

The American Hardwood Export Council (AHEC) is the leading international trade association for the US hardwood industry, representing the committed exporters among US hardwood companies and all the major US hardwood product trade associations. AHEC concentrates its efforts on providing architects, specifiers, designers and end-users with technical information on the range of species, products and sources of supply.

AHEC produces a full range of technical publications which are available free of charge by visiting www.ahec-europe.org , www.sustainablehardwoods.info & www.americanredoak.info or by faxing (44) 20 7626 4222.

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