

American hardwood lumber grading Q&A series

November - December 2009

□ **By Bob Sabistina - Grading consultant to the American Hardwood Export Council**

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, answering a variety of questions pertaining to the application of those grading rules.

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We continue to get cracks in the 5/4 hickory lumber that we purchase. Are these allowed in the grade? We manufacture tool handles and cannot use a handle with a crack in it.

After coming out to your facility and having a look for myself, I see that the cracks you refer to are season checks. Checks occur when lumber is going through the drying process and are a result of stresses built up within the wood. The NHLA grading rules do not allow these checks in the clear cuttings unless they will surface out to the standard surfaced thickness mentioned in the Rules book. For 5/4 lumber this would be 1 1/16th of an inch or 27 mm, which equates to checks of approximately 2.4 mm per face. This does not allow for very deep checking. Outside of the clear cutting area, in your case No. 1 Common, any amount of checking or other defects is permitted. Remember, when determining the grade, we are measuring the clear wood and in No. 1 Common this amounts to a minimum of 66²/₃% clear.

NOTE: I have been involved in a few claims recently with regards to season checks. To assist both parties in settling these claims it would be ideal if the buyer could surface several pieces to the NHLA standard surfaced thickness and send photos of these surfaced boards to his supplier. I have no problem looking at rough lumber and making a judgment call as to whether checks will surface out or not, but this is exactly what it is: a judgment call. Looking at the surfaced boards and still seeing the checking removes all doubt. Then it is a matter of determining the percentage of these pieces in the shipment and resolving the problem from

there. A quick reference for the NHLA standard surfaced thickness is to subtract 4.76mm (3/16") from the nominal rough thickness for 6/4 thickness and less and subtract 6.35mm (1/4") for 7/4 thickness and more.

I know you have covered these in past articles, but could you go over the grading requirements for No. 2 and No. 3 Common again please?

Yes, I would be glad to. First, think of these two grades as utility grades and certainly the least expensive. Both are divided into two distinct grades: "A" for clear cuttings and "B" for sound cuttings. Let's start with No.2 Common. No. 2A Common requires each board to have a minimum clear, defect free cutting area of 50% on the poor face. This grade is used for small, clear furniture parts, flooring, and really any application where No. 1 Common is used, but yielding smaller quantities. No. 2B Common requires the same minimum of 50%, but this cutting area only has to be sound. What I mean by sound is structurally solid allowing small knots, season checks, sap stain, worm holes, etc. Think of building a bed and headboard. I would use No. 2B Common for the frame and structural parts, and use No. 2A Common for the exposed headboard where the pieces would be clear. When ordering this grade, you must specify "A" or "B", or you can receive a combination of both which may or may not fit your needs. No.3 Common is also separated into "A" and "B" grades. No. 3A Common requires each board to have a minimum clear, defect free area of 33⅓%. Think about this, on a 3 metre or approximately 10 foot board, only 1 metre or approximately 3 feet, need to be defect free. This grade is often used with No. 2A Common for small furniture parts and flooring. When a clear cutting is required, this grade will provide a much better yield than No. 2B Common. No. 3B Common need only to have 25% sound cuttings. The same sound cuttings I describe in No. 2B Common, but only for one quarter of the board. This grade is often used in frame applications, in small pieces; think drawer sides, parquet flooring, wooden toys etc.

NOTE: I have to mention colour when talking about these lower grades. If a board has too much mineral streaking or is off-colour, it usually gets reduced to these lower grades because there is no other home for this piece. A buyer of these lower grades must be realistic in his expectations as any producer will try his best to upgrade the lumber whenever possible. If the board is sold as No. 2 or No. 3 Common, then this is as good as that board can possibly be. Another point worth mentioning is the labour involved in using these lower grades. These are true shop grades, that need to be worked and sorted and are labour intensive for the best yields.

□ *Could you please review measurement according to the NHLA grades?*

Measurement seems to be a recurring theme when it comes to confusion about the NHLA grades. As you are probably aware, we still employ the old imperial measurements of inches and feet. We measure the width of the board in inches (one inch = 25.4mm) and fractions of an inch and use a rounding system up or down on the half. Above the half you round up, below the half you round down and you alternate up or down when the width falls exactly on the half. The length of the boards is always calculated on the whole foot mark. For example a 10' 3" board is just measured 10'. The whole purpose of rounding widths to the whole inch serves for ease of tally when calculating the grade of the board. To then calculate the square footage or Surface Measure (SM) of a board, take the full width multiplied by the length and divide by 12, again rounding to the nearest whole number. To convert to Board Feet (BF), multiply the SM by the thickness. For example: 6 1/4" W x 10' L / 12 = 5.2 or 5' SM x 8/4 = 10 BF.

NOTE: When calculating the total footage in a lift of lumber, take the surface area of one layer and multiply by the total thickness of the lift. For example: A lift of 42" W x 8' L / 12 = 28. If there are 15 layers of 8/4 lumber multiply by 30 and there would be 840 BF.

Please send any questions or comments to: info@americanhardwood.org Dit e-mailadres is beschermd tegen spambots. U heeft Javascript nodig om het te kunnen zien. and make sure you check out the updated AHEC website: www.americanhardwood.org

American Hardwood Export Council

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AHEC produces a full range of technical publications which are available free of charge by visiting www.americanhardwood.org or by faxing (44)-20-7626-4222.

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