

American hardwood lumber grading Q&A series: article no. 9
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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 eighteen months, answering a variety of questions pertaining to the application of those grading rules. This month's article answers some of the questions I have received over the past few months. These questions come from all over the world, as the American Hardwood Export Council (AHEC) has been distributing this article from Europe to Asia.

Can you explain how the American suppliers get the wood from the forests to me?

Yes. There are three main steps, which I will outline as follows:

1. The Forest

American hardwood forests comprise a wide area, right from the northern states to the East and then into the far South. They are made up of broadleaf or deciduous trees, which shed their leaves each year, as opposed to softwoods or conifers, such as pine. Think of building the structure of a house out of softwoods, such as 2x4 and then furnishing the interior with hardwoods, such as oak, cherry, maple and walnut.

US hardwood forests are approximately 70% privately owned in a wide variety of acreages and for numerous end uses. One such use is for commercial hardwood lumber production, where the landowner works closely with a sawmill to manage the trees and selectively harvest the mature ones, thus promoting the growth of the younger trees, until they, in turn, are harvested and the cycle repeats itself. The process of selective harvesting can also promote the species mix in the woodlot and increase the value of the timber stand for generations to come. Once the trees have been cut, they are loaded on to a truck and taken to the sawmill for processing.

2. The Sawmill

Most hardwood sawmills today are second or third generation family businesses, which are scattered throughout the hardwood growing regions. Once the logs are at the mill, they are sorted by species and cut to manageable lengths for processing. Any potential veneer logs (very high grade and defect-free logs) are taken out and the rest are stacked up awaiting their turn through the mill.

Logs that are ready for the mill are first sent to a de-barking machine. The bark is then recycled to produce garden mulch and bedding. Today, most sawmills use a band saw for cutting the logs in to lumber of various thicknesses and widths, depending on species and future order files. Every effort is made to minimize waste throughout the milling process, from edging and trimming, to collecting and chipping any by-product that is produced from converting a round log in to square boards. Even the sawdust is collected and sold as bedding or fuel.

3. Grading & Drying

The lumber that's comes out of the mill is sorted in to various stacks depending on grade and thickness. Some will be sold as green or fresh sawn and the remainder will be stacked on to thin drying sticks, or stickers and prepared for the dry kiln. All hardwood destined for use in interior applications, such as furniture, flooring and mouldings etc. must be kiln dried. This is a highly skilled procedure, which can take anywhere from several days to over a year, depending on the species and thickness. In the United States, lumber is dried to a moisture content of around 6 to 9%, which is about equal to the moisture or humidity level inside most American homes. This drying process helps the wood to maintain its shape when manufactured in to a product.

Once dried, the lumber is graded for a second time to remove any downgrade material and to get an accurate measurement for sale. Most sales are made by truckload in the domestic market or stacked in to a 40 foot sea container for export. Depending on the species, a typical container will hold approximately 12,000 board feet or 28.3 cubic metres.

I recently attended a grading seminar and you discussed the various hardwood growing regions of the United States. Can you go over this again, please?

There are four main hardwood growing regions in the US, as per below. For a pictorial reference, please see www.ahec.org, where you can either view online or order the free *Species* guide.

Northern: This area is made up by the Lake States, such as Minnesota and Michigan, as well as

the New England States, such as Vermont and New Hampshire. The climate in these areas is characterised by long winters, heavy snow, a cool spring and autumn and a short, hot summer. The predominant species are hard maple and red oak, as well as beech, ash, white oak, birch and soft maple. The trees are generally slow growing, with smaller diameters than in the other regions, but the colour of the wood is often very uniform.

Midwest: This area is made up by the states that run south from Wisconsin to Missouri and West, from Ohio to Iowa. The climate of this area is more moderate, with cold winters, mild springs and autumns and hot summers. The predominant species are red and white oak, hard and soft maple and walnut, as well as ash, cherry, hickory and others. The trees, which have larger diameters, tend to be scattered throughout the region, since farming corn and soybean is the main industry here. This is probably the best growing region for American black walnut.

Southern: This is a vast area of the country, which ranges from Texas to Florida. It enjoys mild winters, a short spring and autumn and long, hot summers. The predominant species are red and white oak, pecan and ash, as well as cottonwood, gum, sycamore and tulipwood. The trees are fast growing, tall and have large diameters. Because of the long growing season, a wide variety of sub-species within a particular species also grow to produce merchantable timber.

Appalachian: This is another vast region, which extends from Georgia in the South, right up to Maine in the North. The Appalachian Mountains dictate the climate, growth rate and species makeup here, due to a variety of elevations within the overall growing region. Just about every major species grows in this region and this is truly the bread basket of American hardwoods.

This explanation offers only a brief description of the growing regions and species available in these areas. I cannot include every species available, nor must you draw any definitive lines demarcating any specific region. Which is the best region of America to buy from, depends on a variety of factors? One needs to consider the finished product that you are looking for, the relationship that you make with your supplier and the species you need.

Can you explain the sapwood requirement for No.1 Common hard maple graded as No.1 and 2 White?

The key here is that the sapwood is required in the clear cutting area that establishes the No. 1 Common grade. For example, a 12 foot board needs to have a minimum of 8 feet clear to grade as No.1 Common. To meet the White maple requirements, we are only concerned about these 8 feet. Both faces and both edges of the No.1 Common clear cuttings need to be sapwood for No.1 White, while one face and both edges of the No. 1 Common clear cuttings, with at least 50% sapwood on the reverse side are needed for No.2 White. Realistically, the worst case on this 12 foot board could have 8 feet of sapwood on the best face and 4 feet of sapwood on the reverse side and it would still make a No.1 Common, No.2 White hard maple board. Once again, it is not the whole board we are considering here; it is just the clear No.1 Common cuttings.

If you have any questions related to the NHLA grades or AHEC and our upcoming programmes, please email me at: info@americanredoak.com. Dit e-mailadres is beschermd tegen spambots. U heeft Javascript nodig om het te kunnen zien.

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-middleeast.org , www.sustainablehardwoods.info & www.americanredoak.info or by faxing (44) 20 7626 4222.

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