

Using green or part seasoned wood from hedges, woodland, gardens etc...

By Peter Child

Dry Wood Does not exist!

Many visitors to our wood store come looking for nice seasoned discs or chunks of wood 3" thick or more, preferably with the face machine-planed to show the grain. They ask "is it dry?" What they want is wood which can be turned straight away and delivered to the user immediately, without any risk of warping or splitting.

You might think this a reasonable request but as you progress with your woodturning, you will learn one extremely important fact of life which is. . .

Seasoned wood 4" thick or more is virtually unobtainable

The reason is purely economic. It takes many years to fully air dry a 4" plank of wood or several expensive weeks in a kiln. The high wastage and the cost of the overheads are so high that most sawmills are reluctant to cut anything thicker than 2" for stock.

Thicker timber is available but it is usually sold as "part seasoned" before it has a chance to dry fully. It is a sad fact that many sawmills, even reputable ones, will sell thick wood as "kiln dried" which is only dry on the outside skin. If you turn something out of it - say a bowl - you are asking for trouble. The stresses inside the timber are released when it is turned and it will soon warp or split.

You might be lucky and find some timber which has been stored for years for some reason, but normally you can be sure that wood more than 3" thick will be only "part seasoned" and will not be suitable for turning immediately into a finished object.

There are exceptions to this rule - I have found a supply of imported American cherry, ash, maple etc which is correctly kiln dried down to 12% moisture or so. If you do find really well seasoned wood you will have to pay a high price for it.

Using part seasoned wood

One of the big advantages of being a wood turner is that you can use green or part seasoned wood - provided you know what you are doing. Instead of paying a sawmill to store wood for years, you can take any piece of fresh cut material, even from the firewood pile, and turn it. As green wood is very cheap if not free, wood turners who understand the green turning process can save a lot of money on material.

Useful sources of supply. . . .

- Friends with large gardens or woodlands.
- Firewood merchants
- Tree surgeons, estate maintenance contractors, farmers etc.
- Timber auctions

Using green or part seasoned wood from hedges, woodland, gardens etc...

- Old furniture
- Sawmills
- Off cuts from furniture makers
- Specialist woodturning shop

The Seasoning Process

There is no such thing as a dry piece of wood. Every wood blank or finished turning will lose or absorb moisture from the air until it eventually reaches an equilibrium point with its surroundings.

The equilibrium point in, for example, your living room depends mostly on the average value of the relative humidity from month to month. If the atmosphere is very dry due to the central heating, then all the furniture and wooden objects in the room will lose water to the air until the percentage of water inside the wood drops to the value corresponding to the conditions. The percentage of water in the wood may get as low as 5% but there always will be some water left in there.

If you switch off the heating for a month or two and the air gets moister, then the wood will slowly gain water until the percentage water content achieves the value for an unheated room in a house which is typically 12%.

The equilibrium value in our wood store which is an unheated oak framed barn is 15%. I can prove this by using an electronic moisture meter to measure the water content of the oak beams which have been "seasoning" there for 300 years, maybe more. They never get drier than 15% of water. Any piece of wood I put in the barn is it initially sopping wet or dry as dust, will lose or gain water from the air until it gets to the 15% value (more or less).

Wood warps if its water content changes. It shrinks if it loses, and expands if it gains.

Seasoning wood is the process of drying out wood to achieve equilibrium with its intended final home. It can then be turned or made into furniture or whatever without fear of warping. It should be realized that wood does not season with time as the word suggests - it seasons with water loss. I am sure that if I was to cut a piece out of my oak beam and turn it into a bowl, it would warp if I took it into the house because it would change from 15% moisture content to about 8%. The fact that it has been "seasoned" for 300 years will not prevent it shrinking when it dries a bit. On the other hand I could dry out a piece of fresh green oak to 12% in a few weeks in a kiln, take it into the house, and expect it to absolutely stable in shape.

To be safe, you should store wood blanks, before turning them, for as long as possible in an atmosphere close to the intended final environment of the finished turning. This will ensure the minimum movement or warping in the finished piece

Using green or part seasoned wood from hedges, woodland, gardens etc...

and prevent splits. You should allow about 4 weeks for 1" thick timber to achieve equilibrium. Less time is needed if the moisture content of the blank is already close to the final value. Fine grain wood takes longer than coarse grain to achieve equilibrium. Bowls should be rough turned to 1" thickness or so and stored before re-mounting and finish turning.

Wax coating of end grain is essential to prevent splits in blanks which are suddenly exposed to a dry atmosphere or to direct sunlight. On sunny days cover any timber you take away in your car.

Commercial logging is wasteful

The commercial method of processing wood is as follows.

(1) The trunk is trimmed on site (lots of lovely wood is left behind to be burnt) and trucked to the sawmill.

(2) It is sawn through and through prior to seasoning. Any lumps and bumps together with the top and bottom planks are thrown away.

(3) The planks are then air dried in the traditional way or put in the kiln to speed things up.

Even though all reasonable precautions are taken during seasoning, there is a great deal of wastage due to splits. Planks (especially thick ones) always split at the ends so a percentage is lost there. Planks with any thickness suffer from surface splits and split open around any features in the grain such as knots, crotches, wild or swirl grain - all the prettiest bits. This is because these parts of the trunk will simply refuse to dry evenly. All kinds of stresses will inevitable build up inside the wood until it splits open. What is left to sell is boring straight grained stuff ideal for furniture but of little interest to the turner.

Discoloration due to fungus can cause a lot of waste - blue stain in sycamore can affect a percentage of the available material even though special precautions are taken.

If the wastage due to all the above is 50% then the price is doubled. If you look at the costs all along the line including the cost of transport, sawing, storage and distribution you will find that the initial cost of the raw material - trees - makes up a tiny, almost negligible percentage of the cost of the finished material.

Wood is expensive principally because of the wastage - so much of it is destroyed by the pressures of the commercial world which oblige large sawmills to operate this way. The situation is much worse in the tropical rain forests where millions of "non-commercial" species of trees are cut and wasted just to provide access to the loggers. All the most attractive portions of the tree - the part where the branches divide, the branches themselves, and the roots and burrs are nearly always discarded or destroyed. Sawmills do not "rescue" this wood because it is not profitable to do so.

Using green or part seasoned wood from hedges, woodland, gardens etc...

If only a wood turner would intercept the process and cut the wood into discs and rough turn the material before it dries! Then all the pretty swirl grain pieces would be saved because rough turning relieves most of the stress. Bowl turning was always done this way in olden times.

Green Turning of Bowls

A hundred years ago, the wood turner was an important member of the village community - every bit as busy as the village blacksmith and employed to make furniture and household "treen", including lots of wooden bowls for the kitchen and dairy. All his material would have come from nearby woodland.

If you could go back in time and ask the turner if he used dry or seasoned wood for his bowls he would surely look at you as if you were mad. Where could he get such a thing? Why should he use dry wood when it is much easier to turn wet wood?

The process of making a bowl from green or part seasoned wood is very straightforward.

- (a) The bowl is roughly hollowed from wet wood to around 1" thickness - thinner on a small bowl. Allow say 10% of the bowl's diameter.
- (b) The roughed out bowl is stored for a few weeks (Not years!)
- (c) The dry bowl is re-mounted on the lathe and finish turned.

The advantages of this process are many. . .

- You can buy the wood cheaper and have a much better choice of material.
- You can get material as thick as you like for nice deep bowls.
- Wastage from the log due to end splits etc is eliminated.
- You can use pieces with wild grain which would not dry properly if left in the plank.
- Wet wood cuts easier and quicker
- Less dust is generated so that is healthier for your lungs

The disadvantage is you have to look some weeks ahead - you cannot buy wood as you need it, you have to maintain a stock.

Storing rough turned bowls

Once the bowl is roughed out it has to be stored in such a way that it dries out as quickly as possible without splitting. Drying can be accelerated by warmth but moisture has to be prevented from evaporating from the surface too fast or the bowl will surely split.

With coarse grained quick drying wood such as elm and walnut you can dry a large bowl from green in about 6 weeks. Simply wrap it well in twenty or thirty layers of newspaper (open up a whole newspaper and use it to wrap the blank to

Using green or part seasoned wood from hedges, woodland, gardens etc...

make a parcel) and keep it in a warm room. Tape it up so that no gaps show. Write on what it is and date it.

My father (Peter Child) use to rough turn hundreds of elm bowls and protect them with "paste wax" before drying them in the airing cupboard. Paste wax is a kind of cheap floor polish used commercially in factories, hospitals etc. End seal coating such as Mobil "C" would do just as well. I use newspaper because it works and I don't have to pay for it.

With difficult fine grained slow drying wood, such as Cherry or Apple, more protection is required. The best method is to put the roughed out bowl in a cardboard carton full of dry shavings, again in a warm room. The process will take 3 months or so. You will lose a percentage of these especially if they have a lot of sapwood in them.

How to process a small log

Visitors to our little shop often want to know how to make use of a small cherry tree or some such which has come their way.

It is no good just keeping the log and hoping it will eventually dry to usable stock. You have to process it in some way. If you leave it in log form it is likely to split or rot or both and you will lose it.

You might be lucky with fairly small logs however - anything under 5" diameter will often dry without degrade if you dry them very slowly over a period of two or three years.

It is important to realize that any piece of wood is liable to split open if the very centre of the log (the pith) is left contained within the piece. It is O.K. for the pith to show by running down one face but it is wrong to leave it inside the wood.

One method is simply to cut or split the log straight down the middle into two halves and seal the end with wax, paint or end seal. This is fine for logs up to about 8" diameter. You could split them into four if you prefer.

Heart shakes tend to get larger as the wood dries so it is best to remove any heart shakes or defects at the centre of the log by cutting either side of the defects to yield split-free pieces which are likely to dry without further loss.

Sealing the End Grain

It helps when seasoning or storing any piece of wood to seal the end grain against over fast evaporation of moisture. If you do not do this the end grain will split in hot weather.

The best seal is candle wax or paraffin wax. Melt the wax in a shallow tray and dip the ends of the piece of wood in it. If it is a disc of wood for a bowl, roll the

Using green or part seasoned wood from hedges, woodland, gardens etc...

disc in the molten wax to coat the entire periphery of the disc. Take precautions against fire - as with a chip pan.

Turning Branches

Some of the prettiest turned objects are made from branches and small logs of Laburnum, yew or similar trees. These can be turned green or part seasoned. If they are well sealed after turning, perhaps with three or four coats of sanding sealer, they will be O.K. It is worth trying the following home grown timbers. . .

Laburnum

Yew

Boxwood

Oak

Strawberry tree (garden shrub)

Lilac

Mulberry

Hawthorn and Blackthorn

Plum, Cherry, Apple etc