

Storing and Turning Unseasoned Wood

As woodturners, we are often faced with the problem of dealing with wet or unseasoned wood. Working with wet or unseasoned wood has many advantages. Among the advantages are that wet wood is more readily available, it is much cheaper and often free, and it is easier to turn than dry, seasoned wood.

Wet or unseasoned wood can be difficult to dry in thick pieces. In order to reduce cracking and checking, the inside of a block of wood needs to dry at about the same rate as the outside. Drying thick pieces of wood can be a time consuming endeavor. As a general rule-of-thumb, it takes about 1 year/ inch of thickness to air-dry wet lumber. Commercially, kiln dried lumber is usually not available in thickness greater than 2". By rough turning bowls, you are basically converting a large block of wood to the equivalent of 1" thick lumber, only it is in the shape of a bowl. Rough turning dramatically reduces drying time as well as minimizing problems of checking and cracking. If you want to turn large bowls from solid timber, you must learn how to turn and dry wet wood.

Storing Wet Wood Until Ready For Use

The following general guidelines can be used to store wet/unseasoned wood until it is ready for use.

- Keep the wood in a cool area, away from heat and direct sunlight.
- If any sign of cracking appears, place the wood in a plastic bag.
- Light color woods, which have been wrapped in plastic, may begin to show signs of staining or spalling. If this is undesirable, remove the wrapping and rough turn the wood as soon as possible.

Rough Turning Bowl Blanks

Below are generally accepted steps that should be followed when rough turning unseasoned or wet wood.

1. Band saw the wood blank into a round disc or cylinder. This removes excess wood and reduces vibration.
2. Mount the blank on the lathe with a screw center chuck or faceplate fastened to the top of the bowl blank.
3. Move the tailstock revolving center up against the blank for safety, and to help reduce vibration.
4. Adjust the lathe speed for safe operation and efficient cutting (see table). Excess speed can be **very dangerous**. See the chart on the following page for the recommended speeds for turning bowls. This speed chart

- assumes the blanks are free from defects and cut round so they will run true with little vibration.
5. Turn the blank to the approximate outside shape desired. Leave plenty of material in the area of the base, so the rough blank can be held securely in a chuck after it is dry.
 6. Flatten the bottom of the foot, and use the point of the skew to mark a center point on the foot. This will help center the bowl when it is put back on the lathe for final turning.
 7. Prepare the foot to accept the chuck or faceplate. If using a four-jaw, self-centering chuck, cut a slight dovetail on the outside of the foot.
 8. Mount the blank on a faceplate or chuck in preparation for roughing out the inside of the bowl.
 9. Turn the interior of the bowl. A $\frac{1}{2}$ " or $\frac{5}{8}$ " deep fluted bowl gouge is generally well suited for this operation.

Recommended Safe Lathe Speeds For Turning Bowls

<u>Blank Diameter</u>	<u>Roughing-RPM</u>	<u>Finishing-RPM</u>
5"	1200	1800
6"	1000	1500
7"	850	1250
8"	750	1125
9"	650	1000
10"	600	900
12"	500	720

Caution: The above speeds assume your bowl blanks are free from defects, cut reasonably round and securely mounted to the lathe so that vibration is minimal. If all of these conditions are not satisfied, the lathe speed should be further reduced.

Wall Thickness of Roughed Bowls

Roughed out bowls will warp during the drying process, so the wall thickness must be adequate to accommodate this warping. Proper rough wall thickness depends on a number of factors: moisture content of the wood, density, figure, species, stability, open or closed grain, final desired shape, etc. However, a good rule-of-thumb is that the wall thickness be uniform, and about 10% of the diameter of the blank, or a minimum of about $\frac{3}{4}$ ". For example, a 10" diameter blank would have a wall thickness of about 1". A 12" diameter blank would have a wall thickness of about 1.25". Smaller bowls, less than 10", should have a minimum wall thickness of $\frac{3}{4}$ ". The above parameters should allow a finished wall thickness of at least $\frac{1}{2}$ ". Just remember, the rough turned thickness must be sufficient to later true-up both the inside and outside of the bowl and still have

enough remaining wood to give you the desired wall thickness of the finished bowl.

Drying Roughed-Out Bowl Blanks

Once you have roughed-out the wet bowl blanks, the next challenge is to dry them in such a way as to prevent cracking and checking. It is difficult to state a definite procedure for drying roughed-out bowls, because so many variables may determine failure or success. Some of the variables are: air temperature; humidity; wood stability; moisture content of the wood; figure or grain such as crotch, stump or burl; open or closed grain; density; sapwood or heart wood; plain sawn or quarter sawn; reaction wood, etc.

It is not the intent of this handout to deal with all of these variables in detail. However, below are some observations based on years of working with and turning green wood.

1. Partially seasoned wood, below 35% moisture content, is easier to dry than freshly cut, very wet wood.
2. Quarter sawn wood is more stable and less likely to warp than plain or flat sawn wood.
3. Open grain woods are easier to dry than dense, close-grained woods.
4. Fruitwoods are difficult to dry, and the sapwood needs to be removed during the roughing-out process.
5. Don't try to turn or dry blanks that have the heart center or pith in them. They will most always develop cracks radiating out from the center.
6. Burls are generally more stable and less prone to cracking as they dry than straight grain material.
7. Crotch wood or stump wood is more difficult to dry than plain or quarter sawn woods from other parts of the tree.
8. The harder and denser the wood, the slower it must be dried and more care must be taken to prevent cracking and checking.
9. Store roughed-out bowls out of direct sunlight. Direct sunlight causes more cracking problems than either high temperatures or low humidity.

Once a bowl is roughed-out, care must be taken to prevent later cracking. Treatment and care of roughed-out bowls may be accomplished in a number of ways, but the object is to slow down the moisture evaporation from the wood, particularly in the end grain areas. Ideally, you would like for the inside wood to dry at about the same rate as the outside wood.

The following treatment options can be used to minimize cracking problems in rough-turned bowls.

- Roughed-out wet bowls should be kept in a cool area and away from heat and sunlight. These precautions will help greatly to reduce or eliminate

most problems with cracking. For some partially dry, open grained and relatively stable woods, further treatment may not be necessary. As further insurance against cracking, some of the following treatments options can also be used.

- Coat the inside and outside of the bowl with green wood sealer.
- Coat the end-grain with green wood sealer and leave the flat grain area uncoated.
- Put the bowl in a box and cover it with shavings
- Place the bowl in a plastic bag and every 2 or 3 days take it out and let the surface moisture evaporate. Turn the bag inside out and put the bowl back in the bag. Repeat every 2 or 3 days until moisture no longer collects inside the bag. Then, take the bowl out of the bag to finish drying. This method is usually necessary for dense, hard woods that are difficult to dry.
- Last, write the current date on the roughed-out bowl. Otherwise, you will forget how long the roughed-out bowl has been drying.

Finishing the Dried Roughed-Out Bowl

During the drying process, the bowl will warp and the base must be brought into round so it can be held securely in the chuck. Described below is one such procedure that can be used to true up the base and finish the rough-turned bowl. Keep in mind that several methods can be used for truing up the base. You will undoubtedly develop and/or adopt your favorite method as you gain experience.

1. Cut out a disc about 4"- 5" diameter and fasten it to a faceplate.
2. Put the faceplate and disc on the lathe and true up the disc so it is round.
3. Place the open end of the bowl over the disc and bring the tailstock center up to the bottom of the bowl.
4. Insert the point of the revolving center into the marked center point on the base. Advance the center until the bowl blank is held securely in position.
5. Rotate the blank and check the top edge for balance. It may be necessary to tap one side or the other to get the best balance, but get the bowl as evenly balanced as possible.
6. Set the lathe at a low speed, turn it on and bring the base into round with your favorite tool.
7. Square off the bottom of the base so it is flat.
8. Cut a shoulder on the base that will fit the diameter of your chuck.
9. Remove the bowl from the lathe and secure the foot in the chuck. Be especially careful with the cuts until the bowl is round. Now, complete the turning, sanding and finishing in your usual manner, and have fun.