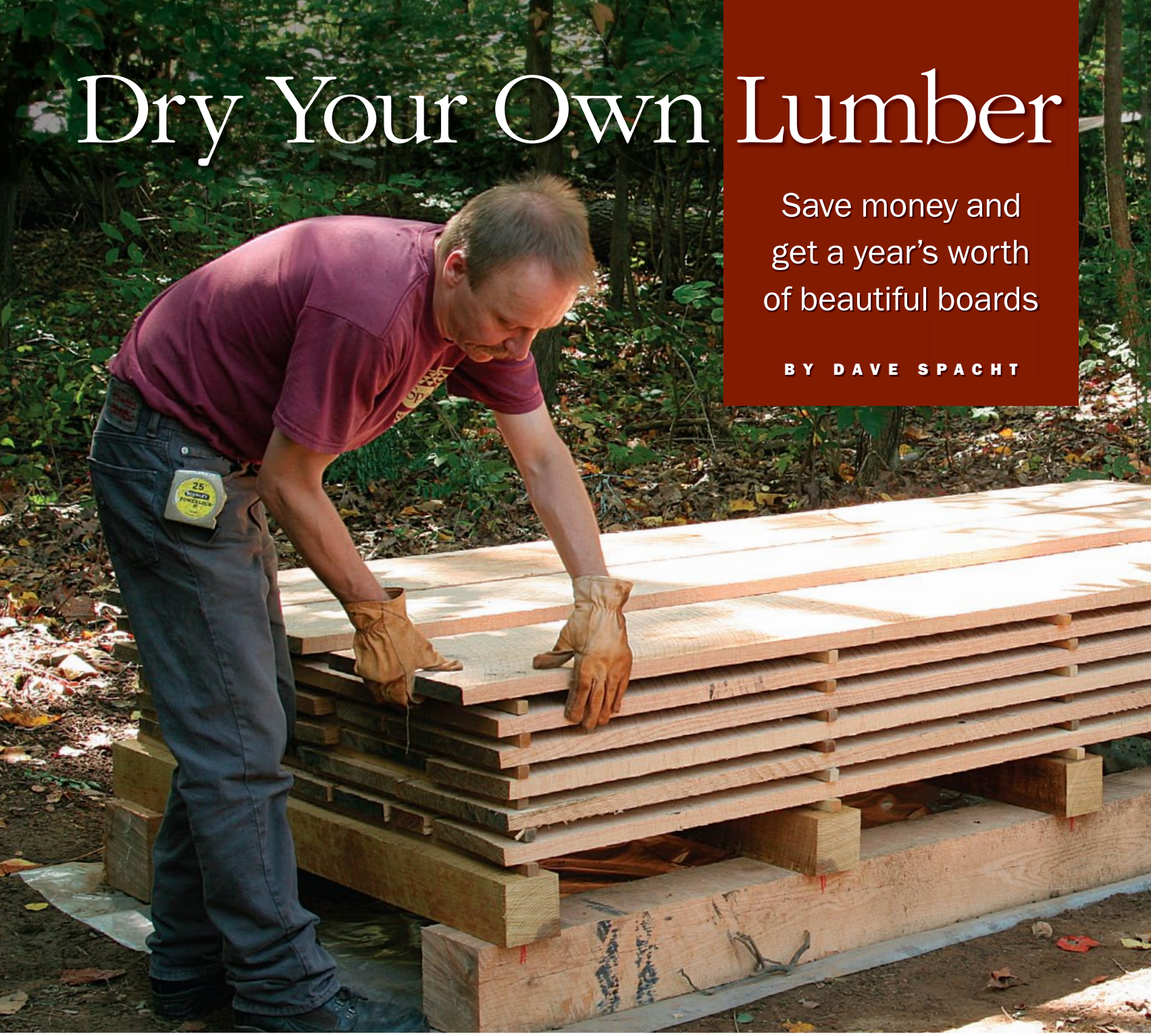
Dry Your Own Lumber

Save money and get a year's worth of beautiful boards

BY DAVE SPACHT



As home-shop woodworkers know, lumber is almost always the biggest cost when building a project. But there's one way to cut down on the cash you spend on fine hardwoods: Dry your own. Not only will you save money, but you'll enjoy the convenience of having a stockpile of great lumber at hand. Also, many woodworkers believe that air-dried wood has richer color and better workability than kiln-dried wood.

Anyone can transform green wood into stable, seasoned boards with a moisture content (MC) of 7% to 9%, perfect for furniture making. You don't need a kiln. You need only make sure the boards are properly stacked outside. Then you can kick back for about a year while Mother Nature evaporates most of the remaining moisture. At that point, in most places, you'll be at about 12% MC. To complete the drying process, bring the boards inside a heated workshop. In as little as a few weeks (depending upon species, temperature, and humidity), they will be ready to use.

I've run a small sawmill in eastern Pennsylvania for more than 25 years, and I've made hundreds of stacks of wood (that's me at right in the photo above). I'll show you how to stack green lumber so that it dries with a minimum of warping, splitting, and end checking.

Where to get green lumber

First, you need some fresh-cut wood. Green wood can be had in a variety of ways. A fallen tree, as long as it's not yet rotten, can

Photos: Tom Begnal

COPYRIGHT 2009 by The Taunton Press, Inc. Copying and distribution of this article is not permitted.

be transformed into boards. Or, if you know what you're doing, you can cut down your own tree. Either way, the logs will have to be transported to a local sawmill or you'll need to hire someone with a portable sawmill to come to your site. Expect to pay somewhere around 50¢ a board foot to have a portable sawmill cut your tree into boards.

Another option is to use a bandsaw to cut small logs into boards. You'll need some sort of shopmade sled to support and carry the log. But the boards won't cost you a nickel. You can find one version of the sled at FineWoodworking.com/extras.

You also can simply buy green boards. You probably won't find them at a big hardwood dealer, but a small dealer is likely to have

Air-dried has advantages

In addition to saving cash, woodworkers have other good reasons for air-drying lumber. Here, frequent *FWW* contributors Garrett Hack and Michael Fortune explain why they use air-dried lumber extensively.

BETTER COLOR AND WORKABILITY

Air-dried and kiln-dried woods are noticeably different. From my experience, air-dried wood has better color. And, no matter if I'm cutting with power tools or hand tools, I find air-dried wood cuts and planes better, too.

—GARRETT HACK

IDEAL FOR BENDING

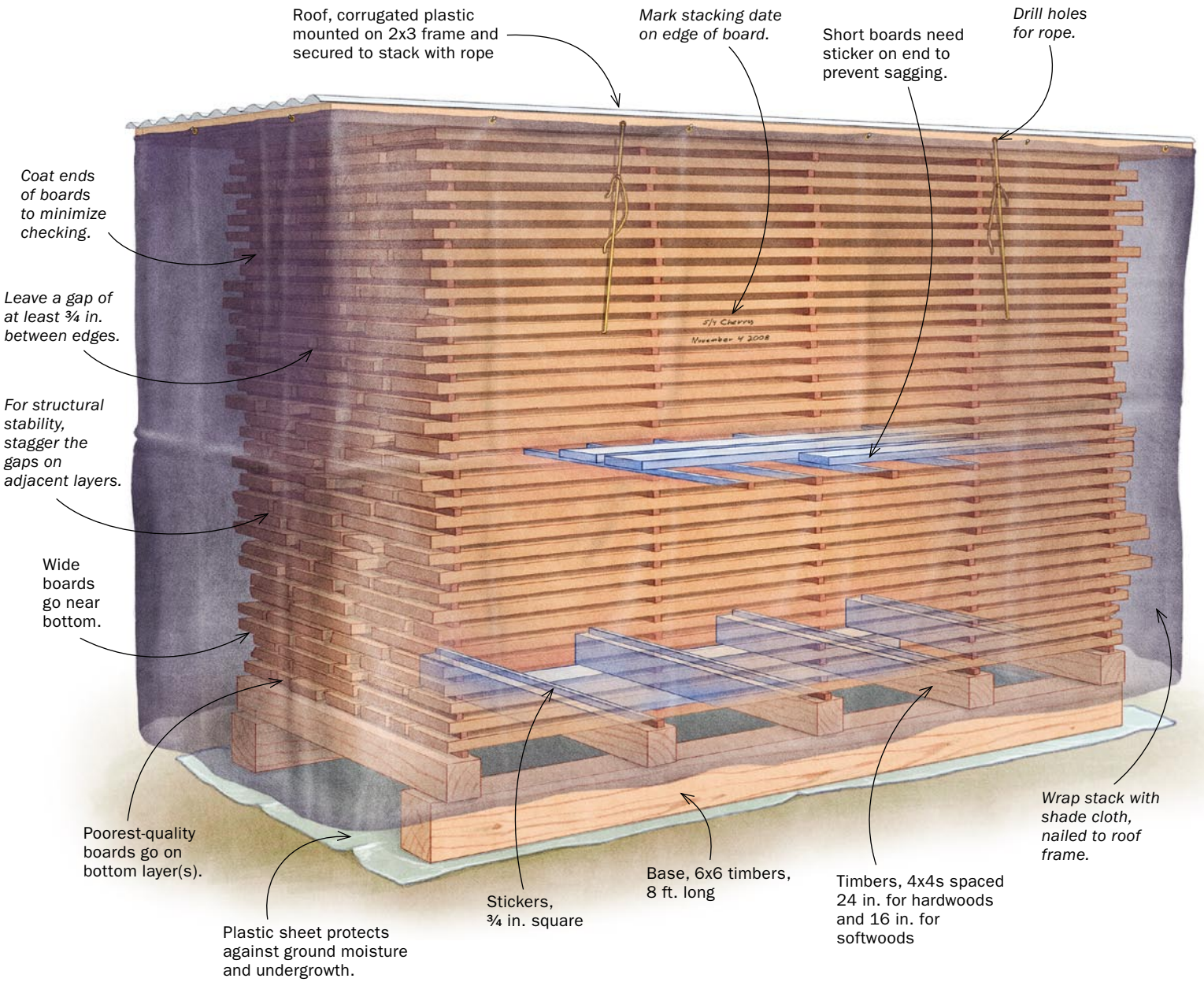
I design and build furniture with lots of curves. I almost always create those curves by steam-bending wood so I don't have the visible gluelines that are inherent in laminated parts.

When steam-bending, I use only air-dried wood because the naturally occurring adhesive that surrounds the wood cells—called lignin—isn't permanently set. That means the wood can be softened with steam. On the other hand, the lignin in kiln-dried wood becomes firmly set during the drying process. No amount of soaking in a water bath or extra steam time will make kiln-dried wood as pliable as air-dried wood.

—MICHAEL FORTUNE

COPYRIGHT 2009 by The Taunton Press, Inc. Copying and distribution of this article is not permitted.

HOW TO BUILD A STACK



them. You'll find a listing of small dealers, often called mini-mills, at FineWoodworking.com/extras.

A good stack dries wood at a comfortable pace

The secret to air-drying lumber is building a stack that lets the boards dry slowly but steadily—you can't just toss a bunch of boards in a pile and expect them to dry perfectly.

All boards warp as they dry, and if they dry too fast, the warping can be so severe that the board is useless. Also, fast-drying boards can develop nasty cracks on the ends and tensions that will cause a board to pinch the sawblade or spring uncontrollably when sawn. Boards that dry too slowly can develop molds or fungi, and attract wood-boring insects.

Start with a good outside location—A spot that doesn't get a lot of direct sunlight is best. Look for an area with plenty of air circulation—be sure there's at least 3 ft. between the stack and any building. Also, choose a place that drains well.

Make a solid base—The base must be sturdy, flat, and level because green lumber is relatively pliable, which means the weight of the stack will make the lower layers of wood conform to the contour of the base. If the base has a twist, then so will the stack.

Stickers allow air to circulate—Add spacers—commonly called stickers—on top of the base and between each layer. They ensure that all surfaces of each board are exposed to circulating air. Stickers can be made from any dry wood, plywood included. Wet stickers can cause mold that discolors the wood, a hard-to-repair defect called "sticker stain." Make all stickers the same size: ¾ in. square works. Cut them as long as the stack is wide.

Layer the lumber logically—Use the lowest-quality boards for the first layer—those with lots of knots, splits, sapwood, and other

Drawings: John Hartman

COPYRIGHT 2009 by The Taunton Press, Inc. Copying and distribution of this article is not permitted.

Base of the base. *Two 8-ft.-long timbers, which serve as the foundation for the base of the stack, must be parallel, flat, and level. A sheet of plastic under the timbers helps protect the stack from ground moisture and undergrowth.*

Complete the base. *Spacht adds 4x4s across the timbers and places a ¾-in. sticker on each 4x4.*

Start stacking. *Use the lowest-quality boards for the bottom layer (3). When wide boards go near the bottom, the weight of the other boards above helps keep them flat. Also, the stack will be more stable if the gaps between boards are staggered from layer to layer (4).*

Short boards are OK. *When encountering an odd length, such as a 5-ft.-long board that doesn't divide into 2-ft. intervals (or 18-in. intervals for softwood), add an extra sticker to the layer so both ends are supported.*

Add a top. *A roof made from corrugated plastic over a 2x3 frame (6) helps shield the stack from rain and direct sun. Wrapping the stack in shade cloth keeps out much of the rain, yet allows good ventilation (7).*

COPYRIGHT 2009 by The Taunton Press, Inc. Copying and distribution of this article is not permitted.

Check back often. *Every couple of months, measure your drying progress using a moisture meter. Pick a board in the middle of the stack.*

Finish it in the shop. *Once the lumber in your stack has dried as much as it can outdoors, bring it into your workshop to lower the moisture content further.*

defects—but avoid badly twisted boards because the layer must lie flat. The lower-grade boards serve as an additional moisture shield for the better boards above.

Begin the second layer with the widest boards. Stacking the widest boards here allows the weight of all the boards stacked above to act as a press, helping to keep them flat. Plus, you won't have to lift these heavy boards higher than necessary.

Put a lid on it—You need a roof to protect the boards from rain and direct sun. A good option is to use roofing panels made from corrugated plastic. Typically, they are made from PVC and measure 26 in. wide by 10 ft. long. Most home centers carry them or will order them for you.

Shade cloth completes the stack—The final step is to cover the stack with a product called shade cloth. It allows air to circulate through the stack and, although it isn't completely waterproof, offers pretty good protection from driving rain. Look for it at nursery supply houses. I use one called Shade-Dri SD-04 that provides 55% shade. It costs 21¢ a square foot (www.shadedri.com).

Let the stack fully air-dry

Now begins the hardest part—the waiting game. As a rule, lumber requires one year of drying for every inch of thickness. A moisture meter can help you avoid the guessing game. For not much more than $100, you can get one that will tell you the exact MC.

At my mill in eastern Pennsylvania, and in most of the United States, the stack is considered fully air-dried at about 12% to 14% MC. In much of the Southeast, and along the coastlines of California, Oregon, and Washington, air-dried wood settles in at around 13% to 14%. In the Southwest, 6% to 8% is the norm. Once a stack is fully dried outdoors, the MC won't go up or down by much more than a few percentage points, even if you leave it there 10 more years.

Bring boards inside for final drying

If you're going to use the wood for outdoor furniture or steam-bending, there's no need to dry it any further. But for interior use, you need to bring the boards you plan to use into a heated shop (or house) for a while.

Stack and sticker indoors, too. *Use stickers to ensure good airflow between boards. Check the MC every couple of weeks with a moisture meter until they get to their target moisture content.*

Your goal is to dry the boards to the same MC as other boards that have spent at least a year in your shop. In most areas of the United States, that is 7% to 9%. In higher-humidity regions, shoot for 10% to 12%. In dry regions, 4% to 6% is the target number.

According to contributing editor Garrett Hack (see p. 73), in regions where 7% to 9% MC is the goal, you probably won't see much drying during the summer months because the humidity will be too high. Indeed, the MC of your boards might even go up a point or two. But, come fall and winter, when the heated inside air gets as dry as a desert, you can expect a 1-in.-thick board to take from three weeks to a couple of months to get to the 7% to 9% goal. Stay tuned to the drying process by checking the boards with your moisture meter every couple of weeks or so. □

Dave Spacht owns and operates Spacht Sawmill (www.spachtsawmill.com) in Fairview Village, Pa.

COPYRIGHT 2009 by The Taunton Press, Inc. Copying and distribution of this article is not permitted.