

BY ANDREW WORMER



# LAYING WIDE PINE FLOORS

Most of us like the look of old pine floors. The wide honey-brown boards have the patina of another era. And despite the gaps between the boards, and the dings, dents, and knots, those boards have a reassuring feel under foot.

Fortunately, it isn't difficult to recreate the feel of those old floors in a new or renovated interior. White pine is widely available and economical, it's easy to install, and it quickly acquires the dings and dents of a well-used floor. It is an

excellent flooring material for living areas that see light to moderate use.

## Selecting Material

Pine used for flooring can come from a wide variety of sources, and this can affect how it is installed and the final appearance of the floor. I've often used standard #2 stock in various widths from the local lumberyard with good results. Locally sawn pine is another option, although it presents a greater shrinkage problem than kiln-dried pine.

Shrinkage, and the resulting gaps between boards, are the bugaboo of pine floors. The problem can be minimized, but it can't be eliminated entirely. Pine is inherently prone to shrinking and swelling — more so than hardwoods. And because the boards will be wider than those used in strip

flooring, there is greater potential for some really big gaps to develop.

For the tightest joints and the least shrinkage, and for installations where board width exceeds 12 inches, S4S kiln-dried boards custom-ordered from a reputable millwork shop are your best bet. These boards, while more expensive, will have the lowest moisture content, preferably 8% (using a moisture meter is good insurance). For high-humidity summertime installations this is especially important, because even kiln-dried lumber will shrink a lot during the heating season.

Using premium lumber also eliminates the stickering and seasoning of boards that is typically necessary. In fact, the boards should be laid as soon as possible after milling, since they may never be any straighter or drier. Again, the key is moisture content: The drier the board before installation, the tighter the floor joints will be for the life of the floor.

**FOR BEST RESULTS, USE**

**DRY PREMIUM BOARDS**

**AND FASTEN THEM**

**SECURELY TO THE JOISTS**



*The author recommends wide pine floors for low to moderate traffic areas — the wood is soft and dents easily. Knots are typical for wide pine, though loose ones should be cut out.*

## Getting Ready

Prep the room as you would for any wood floor. I make sure that the subfloor is scraped clean of old joint compound, glue globs, or anything else that might stick up, and then thoroughly sweep it. If any blocking is needed, now is a good time to do it. I mark floor joist centers on the wall with a lumber crayon before laying down 15-pound asphalt felt. Then the joist lines can be snapped with a chalk line. The felt helps to stop squeaks caused by wood-to-wood contact between the flooring and subfloor, and controls moisture penetration into the underside of the flooring better than rosin paper. It's also less likely to get torn during installation, and, of course, shows the snapped lines better.

Locating the underlying floor joists is more critical when laying a pine floor than with hardwood strip floors for a number of reasons. Since most pine floors are face-nailed, the nailing pattern

is clearly visible on the finish floor. If the joist centers aren't well marked, the nail lines will weave in and out. Also, face-nailed boards depend on the holding power of the fastener into the joist, rather than just into the subfloor. A board that is nailed only into the subfloor is much more likely to pull the nails loose and start squeaking.

## Fastening Options

There are a few options for fastening the flooring down. Spiral-shank flooring nails offer good holding power and are easy to use. Authentic cut nails are also available, although more expensive. They don't hold as well as the spiral-shank nails, but they do offer a more traditional look on the finished floor, and are less likely to split the wood when nailing close to the edge. In actual practice, however, it is a bit difficult to distinguish one nail from the other, since both must be set into the floor before sanding and finishing. Blind nailing is another option, but only when installing relatively narrow tongue-and-groove boards.

The best way to avoid row after row of face nails is to use screws and plugs. Screwed-and-plugged floors offer some advantages over conventionally face-nailed floors. For one, the boards don't necessarily have to be laid perpendicular to the floor joists. An adequately sized subfloor (at least  $\frac{5}{8}$ -inch plywood) will give the screw plenty of material to hold on to without also having to penetrate a joist. This system also holds the floor more securely against movement, helping to minimize squeaks and gaps.

When I first started to screw floors down, I used a  $\frac{3}{8}$ -inch Forstner bit to drill the plug hole, another bit to drill the screw hole in the bottom of the plug hole, and then chucked in a Phillips-head bit to drive the screw. This is fine for a few holes, but it gets old fast. Now I use two drills; one has a tapered drill bit with an integral counterbore and stop collar (made by W.L. Fuller, P.O. Box 8767, Warwick, RI 02888; 401/467-2900) to drill the holes in the flooring (Figure 1). This setup is just as accurate as using a separate Forstner bit, and is a lot faster. The other screwdriver drill should have a good clutch, since it is pretty easy to pull a screw right through a pine board that has been predrilled and countersunk. Again, take

care when laying out the holes for drilling; a framing square can help keep the holes aligned.

Use double screws, 16 inches on-center, for boards less than 11 inches wide; three screws should be used for wider boards. The screws should be set in about  $1\frac{1}{4}$  inches from the edges of the boards. This pattern will hold the board down firmly and keep the edges from lifting. Bugle-headed drywall screws from  $1\frac{5}{8}$  to 2 inches long are perfectly adequate as fasteners.

The plugs can be cut from waste stock with a hand drill, but a drill press can speed up the process considerably and save some physical wear and tear. A fully plugged floor can use up an enormous number of plugs in a hurry. Tapered birch plugs are also available and work well, although they are somewhat expensive. Make sure your plug-cutter is cutting plugs that fit snugly, preferably



**Figure 1.** If you screw and plug a wide pine floor, you won't have to lay floor boards perpendicular to joists or align butt joints over joists. An adequately sized subfloor (at least  $\frac{5}{8}$ -inch plywood) will give the screw plenty of material to grab.



**Figure 2.** To allow for expansion, leave a  $\frac{3}{8}$ -inch gap between the flooring and the walls.

before you have a room full of oversize holes. I've generally found the counterbores to be quite accurate, although they should always be checked against your particular plug cutter.

Just before laying the floor, securely screw down straight pieces of scrap stock where the floor will meet a saddle or another floor material. This will keep the ends of the boards aligned and square. Usually these pieces will remain in place until after the floor is sanded, because they will protect the edges from getting rounded over during sanding or from getting gouged during installation.

### Installing the Floor

Laying a pine floor goes quite quickly. After picking out enough relatively straight stock to get started, snap a chalk line out from the starting wall a width equal to the board's width, plus  $\frac{3}{8}$  inch to allow for expansion. If the walls are out of parallel, this is a good place to try to start correcting by adjusting one end of the chalk line in or out. Install the first course to the chalk line, leaving a  $\frac{3}{8}$ -inch gap at the end walls as well (Figure 2, page 67).

As you lay the succeeding courses, be on the lookout for loose knots that might fall out from the face or the edges, and be selective about the best board face. The worst knots will have to be cut out, but many you will just have to live with — that's what pine's all about. Often this means saving less

desirable boards for closets or under obvious furniture locations, or along walls.

The courses will have to be squeezed up to one another as they are put down. Use wedges and blocks to do this when the boards are reluctant to lay straight. Remember that pine will take dings and gouges very easily. I usually cut a few blocks about 36 inches long out of scrap (long enough to span three joists), as well as a few sets of wedges, before starting to lay the floor. I can then screw the block to the subfloor alongside the board, leaving enough room to slide the wedges in between (Figure 3). Tapping the wedges together will usually drive the board over. Oftentimes, a 16d or 8d nail toenailed through the side of the board into a joist will close the gap. If the board has been pushed over with a wedge, toenail and fasten through the face before removing the wedge or the board will just bounce back.

If you're nailing the floor in place, butt joints should occur over joists. If you're screwing the boards down, however, this is less important; the joints can occur at random. Or, you can combine nails and screws, using the screw-and-plug method only at the butt joints to eliminate the need to break over joists.

Take care to cut the joints accurately, because they will be very noticeable. Cutting a 2- or 3-degree backbevel with a Skil saw and a Speedsquare as an edge



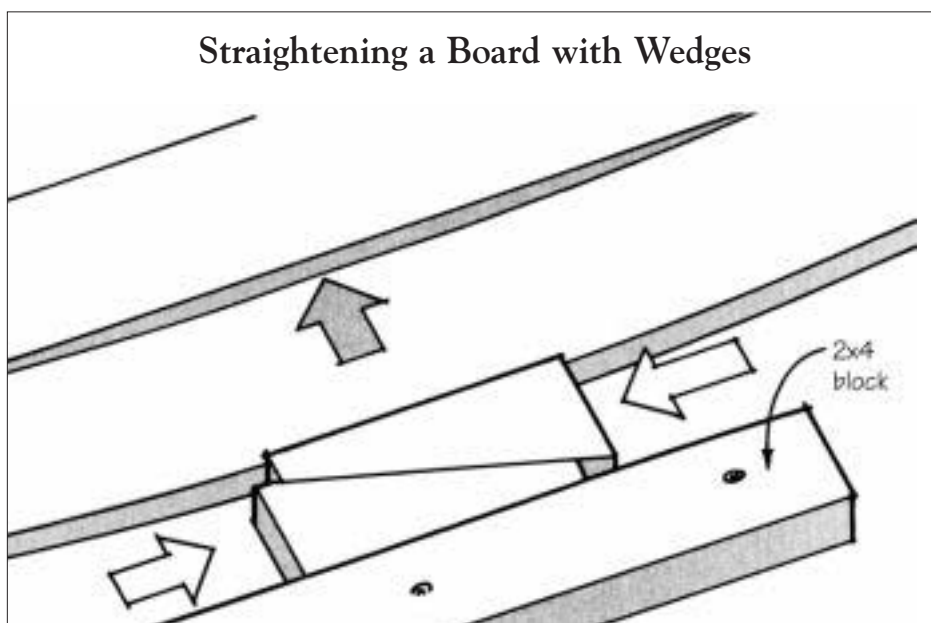
**Figure 4.** With extra wide boards, butt joints have to be cut precisely. For best results when you don't have access to a sliding crosscut saw, use a framing square, as shown, or a large Speedsquare, to guide the cross cut.

guide works best for me (Figure 4).

Carefully check the widths of the boards at the joints *before* fastening them, because often there can be as much as a  $\frac{1}{4}$ -inch difference, especially in the wider boards. Planing back the wider board can help, but this can also create problems down the line, as subsequent courses will start to dip and dive to follow the altered board. Sometimes ripping or jointing the entire board to width is the only solution.

Continue laying the boards, checking every few courses to make sure the courses are running straight and parallel to the wall where the floor will end. The final board will probably need ripping to width; again, leave about a  $\frac{3}{8}$ -inch gap.

After the floor has been put down, all of the holes can be plugged. For this I use a shallow pan for dipping the plugs into the yellow glue. Tap the plugs in with a hammer, let the glue dry, and then come back later with a sharp chisel to trim them off. When trimming back the plugs, it's best to leave them a bit proud of the surface of the floor. If you trim too close, the plug can chip off below the surface, or the chisel can gouge the pine. The plugs can be brought down flush later when the floor is sanded. ■



**Figure 3.** Standard practice calls for a chisel to lever twisted floor boards into place. But with wide pine, you risk dinging the soft edges. Instead use a couple of wedges — and a 2x4 block temporarily secured to the subfloor.

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