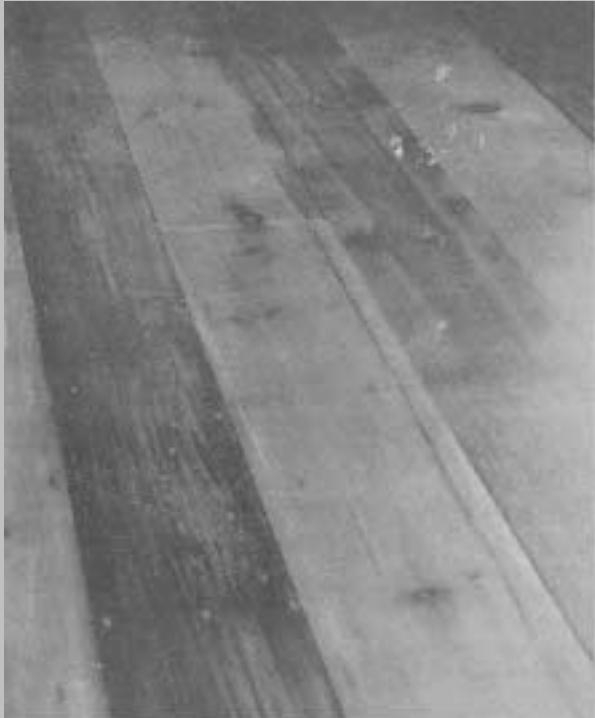


WIDE PLANK FLOORS

by Charles Thibeau



Even square-edged #3 pine can turn out a distinctive and durable floor

Customers choose wide plank flooring for a number of reasons. Those purchasing wide pine are often working on Colonial restorations or reproductions—or sometimes simply want a rustic country character. Wide hardwood flooring, on the other hand, gives a very contemporary look. Because it is relatively uncommon, it looks more distinctive than standard strip flooring. It is also more expensive. For example, the material cost of 4-to 9-inch oak is roughly twice the cost of standard strip oak.

What Species?

We mill wide pine flooring from Eastern white pine (*Pinus strobus*) in random widths from 12 to 30 inches. For floors, most contractors buy 12- to 18-inch boards of #3 Common. This grade, also called NELMA "Premium" (see Figure 1) has tight red knots. For a more formal floor, some customers are willing to pay a 50-percent premium for #1 and #2 Common (NELMA's Finish) or a 100-percent premium for Clear (NELMA's D & Better-Select).

While white pine makes an attractive floor, it is relatively soft and can dent from the impact of furniture or high heels. Your customers should recognize this. But the wood itself will never "wear out" as long as a finish is kept on it. Many white-pine floors have stood up well to over two-hundred years of use.

Other pines are more durable. Southern yellow pine, for example, is very hard, but I feel it makes an oily-looking and unattractive floor. Northern hard pine (red and Norway pines) make attractive and durable floors, but these species are no longer available in any quantity.

In hardwood, nearly all flooring is milled from FAS grade lumber (firsts and seconds). Our standard widths are 4 to 9 inches, with planks up to 16 inches wide available for a premium. Oak, maple, cherry, birch, walnut, teak, etc. all make fine flooring. It's simply a matter of taste and price, which can range from \$4 to \$12 per square foot.

Manufacturing

Whatever wood you choose, buy it from a reputable supplier. Wide boards need special care in manufacturing, or warping can occur. This starts with the drying. For example, in the kiln, stickers must be arranged evenly to keep the wood from permanently bowing. The wood should be dried to between 6 and 8 percent.

Hard pine and oak are two of the most difficult woods to dry properly. They must be dried more slowly and longer for a good quality product. Too rapid drying can cause case-hardening (brittleness of the wood), and honeycombing (internal cavities). With good drying and milling techniques, a 24-inch wide board can be almost as flat and straight as a 6-inch board.

In planing the wood, both faces should be dressed equally or cupping is likely to occur. And in ripping the planks for width, wavy boards must be straightened by jointing one edge and sawing to width. On narrow strip flooring, many manufacturers simply run common grades through a four-sided molder—following any waviness in the plank. Then they cut out knots and other defects, resulting in short lengths.

Profile

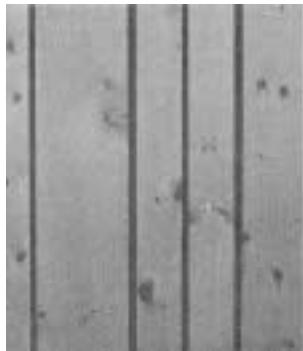
Once a wood is selected, the next decision is whether to use a square edge, ship-lap, or tongue-and-groove. For pine, I recommend a square edge, unless the flooring is going over old plank-

type subflooring. In that case, I usually recommend a ship-lap. The main benefit of the lap is that it helps keep dust, light, and sound from traveling between floors. With plywood subflooring, the lap is unnecessary.

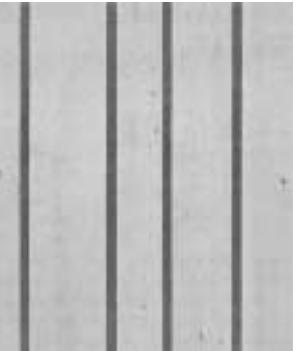
For hardwood, many customers prefer a tongue-and-groove edge. However, wide T&G planks are more difficult to pull together during installation. Actually, there's really nothing wrong with square-edged hardwood flooring.

Prep Work

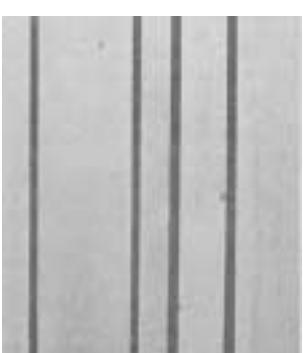
Ideally, all wood flooring should be installed with the same, or less, moisture content as it will have on average in the occupied building. This is about 9 percent for the New England region. Here, interior wood may range from as high as 12 percent in summer (in coastal regions) to as little as 6 or 7 percent in winter in a home with central heating. Ideally, any wood you put in a house in New England should have less than 10-percent moisture content.



Grade: NELMA Premium (also called #3 Common)



Grade: NELMA Finish (also called #1 & #2 Common)



Grade NELMA D & Better Select (also called Clear)

Figure 1. Grades of eastern white pine. Some customers want knotty flooring. Others will pay double for clear. The grades shown established by the Northeastern Lumber Manufacturers Association (NELMA).

If the floor is going in during the winter, leave the wood to condition for a week or so in the heated space where it will be installed. It should be stickered or laid out on the floor for this to do an good. In the summer, on the other hand, the flooring is not likely to dry on the job site. In fact, it is more likely to pick up moisture if it is fresh from the kiln. In summer, therefore, it's best to install the flooring right away.

The wider the flooring, the more its shrinking and swelling is an issue. For example an 18-inch pine board installed at 12 percent in August might show a 1/8-inch gap in January when the flooring goes to 8 percent in a dry home. But rarely do we see more than a 1/16-inch gap. This seasonal movement is something that most customers don't mind a long as they are told to expect it.

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Installation

The floor should be the last material installed in a room—so it is no damaged, scuffed, or splashed with paint. I even recommend pre-cutting and pre-finishing the baseboard so it can be easily installed after the flooring is in.

Start with rosin paper over the sub flooring to provide a cushion for minor irregularities. If you're going over concrete, use 6-mil poly on the slab, 2x4 sleepers, and minimum 5/8-inch plywood.

Lay out the various widths in a pleasing "random" pattern. Save your extra wide boards for showy areas such as near the front door or between rooms. Also it's important to line up all cut ends with joists or sleepers. With wide boards, nailing only into the floor sheathing is not satisfactory. Because of the need to cut most of the flooring boards to length, and the losses in milling the edges, you should figure on a 20-percent waste factor in placing an order.

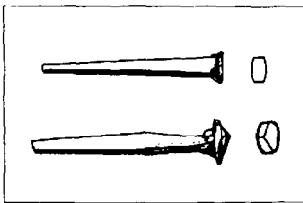


Figure 2. For pine flooring, use common cut steel nails (top), set about 1/16 inch below the surface. A wrought head (bottom) is used for pine paneling or wainscoting.

If you're using pine, the traditional approach is to face-nail with cut-steel nails (see Figure 2). Use 10d nails, or 8d if you're going into 2x sleepers. Nail about 1 inch in from either edge and about 5 inches apart in the field (Figure 3). At the ends of boards, nail about an inch in, angled to catch the joist. Because of the blunt nail heads, you should not have to predrill any holes.

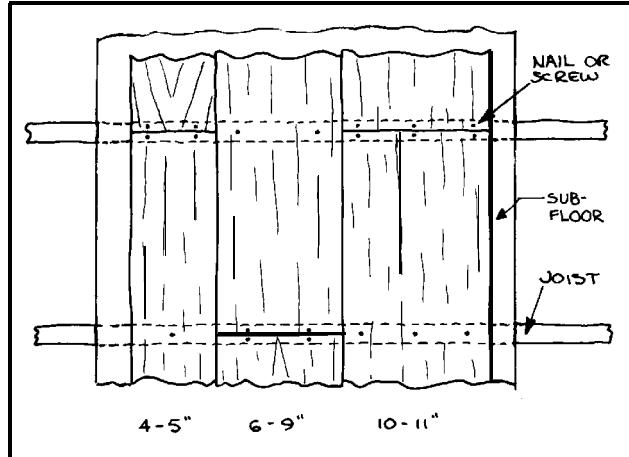


Figure 3. Nail or screw into joists, with the fasteners set about 5 inches apart and 1 inch in from the edges and ends.

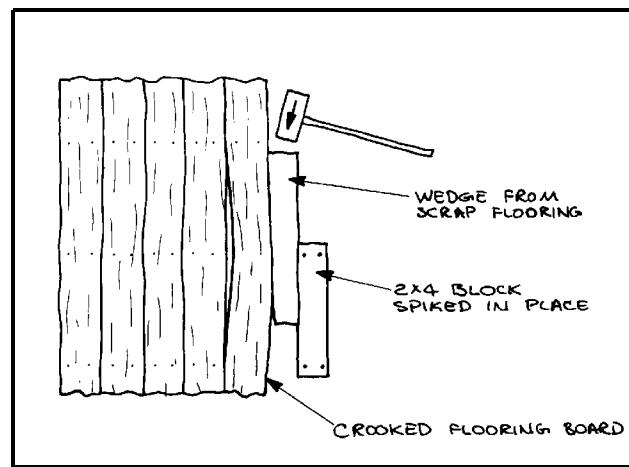


Figure 4. If necessary, you can persuade a warped board into place with a long wedge driven between the flooring and blocking. If a piece is badly crooked, cut into smaller sections.

Set the nails about 1/16 inch below the surface before lightly sanding.

For wide hardwood flooring, I recommend installation with screws set in counterbored holes. You can use nails to lightly tack the boards into place. In his approach, you drill 1/2-inch holes wherever you would put a nail (into joists only). In the center of each hole, drill a 1/8-inch pilot hole and drive in a hardened screw-nail. Use screws long enough to catch 1 inch into the joist. With a plug cutter and drill press, make latching hardwood plugs and install hem either with the grain (to match) or across the grain (to contrast). Install hem with an aliphatic resin glue (yellow carpenter's glue), chisel off the excess, and lightly sand.

If the flooring has T&G edging, some installers edge-nail as with strip flooring and use fewer screws. In fact, some carpenters edge nail only, and glue down the wide hardwood flooring with mastic. This is cheaper, but I don't recommend it.

If your flooring is well manufactured, it should be free of cups and crooks, and you shouldn't have to wrestle it into place. If a piece needs a little persuasion to fit tightly, however, it's sometimes helpful to force it into place with a long hollow wedge of scrap 1-inch stock driven between the flooring and a 2x4 piked to the floor (Figure 4). If a wide board has a bad crook, however, don't waste your time trying to straighten it.

Sanding and Finishing

One of the pleasures of installing wide-plank flooring is that very little

power sanding is needed. If you start with good stock, all you'll need to do is touch-sand at the joints, and lightly sand the rest with a fine (80 grit) paper to remove scuff marks.

For the finish, there are many options. My favorite is the penetrating sealer, such as Watco Wood Floor Finish. Watco is a very tough finish made from tung and linseed oils as well as phenolic resins. The finish soaks in and hardens the wood in addition to protecting the surface. You can buff this type of finish to a low "satin" gloss, or add a paste wax for a glossier, harder finish.

The real beauty of penetrating seals becomes apparent when it's time to touch up scratched or scuffed areas. All the homeowner has to do is strip the wax (if used) and spot apply more penetrating seal—blending it into the surrounding area. With urethane, varnish, and other surface coatings, spot repairs and recoatings are difficult, and generally look awful. The only real alternative is to completely strip and refinish the entire floor.

Finally, speaking of finishing, be sure to remind your customers to keep a finish on the floor. This includes periodically recoating high-traffic areas. That way, the finish will protect the wood from stains and physical wear. The finish will wear, not the floor. And that's what it should be. ■

Charles Thibeau owns the Craftsman Lumber Company in Groton, Mass., which specializes in supplying kiln-dried pine and custom millwork for restoration and reproduction work.