

Save Time With a Prefinished Wood Floor

Factory-finished products mean less work on site, but they demand a more careful installation

BY CHARLES PETERSON

When working with prefinished flooring, it's important to keep in mind that the finish is permanent.

While that may sound a bit obvious, many contractors who are used to installing unfinished wood flooring sometimes find it difficult to transition to prefinished products. They're used to working atop floorboards that will receive aggressive sanding before the job is done—a safety net of sorts. However, the margin for error when installing prefinished floorboards is small. The most minor mistake or oversight—a dropped hammer, a rock stuck in the sole of a boot, an exposed fitting on an air hose—can have costly consequences. From job-site setup to the layout to the actual installation, getting every detail right is imperative.

I recently installed solid, 3/4-in.-thick, prefinished, quartersawn white oak of various widths in my house. The installation process is similar regardless of the type of prefinished flooring you choose. Many of the important lessons that you'll learn here can even be applied to the installation of prefinished engineered flooring.

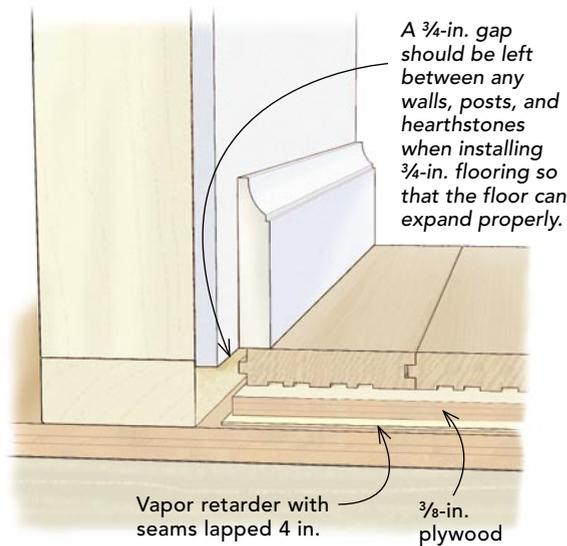
Get a superior finish

Many builders are opting for prefinished wood floors for reasons of speed. Depend-



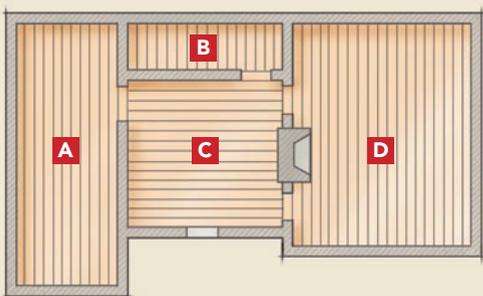
THE SUBFLOOR MUST BE FLAT

The subfloor should be dead flat before a vapor retarder is installed. Raised plywood seams and other flaws can telegraph to the floor's surface. Adjust for flatness by sanding high spots or gluing down shims in low spots. The floor should be flat within $\frac{1}{8}$ in. over 6 ft. Here, a layer of plywood was installed over the vapor retarder because the plank flooring will be glued down.



THE LAYOUT IS PARAMOUNT

Figure out where to start the floor installation by finding the focal point of the room and working out from there. The focal point may be a window, a doorway, or in this case, a fireplace. Your eye is drawn to the focal point in the room, so you want maximum control over the length of boards in this area and the way they break. Notched, ripped, or tapered boards should be left for more inconspicuous areas.



Directional differences

The direction in which the flooring runs has a profound impact on how a room looks and feels. Floorboards that run parallel to the longest wall in a room make the space feel longer and narrower (A), while boards running parallel to the shortest wall in a room make the space feel short and wide (B). Square rooms are simple because you can run the flooring in nearly any direction and it will look good (C, D).



Rack it out. Lay out as much flooring as possible, but be sure to retain enough space for your flooring nailer. Racking gives you a preview of what the floor will look like. You'll notice boards with harsh, contrasting color tones or grain patterns right away, and you can refine how the boards break. Joints should be spaced at least three times the width of the flooring.

ing on the scope of the project, in as little as a single day you can install a beautiful new floor that the homeowners are able to use immediately without having to go through the inconvenience of a long and messy sanding and finishing process. Moreover, the finishes, which are applied in a factory, tend to be better from a consistency standpoint than anything applied on site. (For more on factory-applied finishes, see "You get what you pay for," p. 41.)

Prefinished flooring is more sensitive to moisture changes due to its hard finish, which can be damaged if the floor is installed too dry. Acclimate the floor to the middle range of the expected interior moisture content of the house. (To calculate the ideal moisture content, see the chart in "11 Wood-Flooring Problems and Their Solutions" in *FHB* #200 and online at FineHomebuilding.com.)

As good as prefinished floors can be, read the fine print of the manufacturer warranties carefully before ordering. A 50-year warranty may include clauses that make it impossible to collect on a claim. For instance, some manufacturers allow 5% to 10% of the boards to have defects. They leave it up to you not to install them. Also, wear is not considered a defect, no matter how quickly it occurs. Warranties typically cover only flooring whose finish has been completely worn off to expose bare wood; they don't cover the floor's cosmetic appearance. Maintenance is crucial. Variations in grain, color, or tone are also not considered defects, so carefully select the boards you will use in the racking process.

The right tools for a flawless floor

I recommend that you rethink every detail, from the type of boots you're going to wear—I wear nonmarring white-soled work boots—to the placement of your tools when not in use. I place all my tools on a work mat to prevent accidental scratches. While a refined method of work is important, you'll never achieve a quality installation if you don't have the right tools on hand, and there are only a few to consider.

Almost all manufacturers of flooring nailers use a poppet-type valve system. The harder you hit the gun, the more the valve opens, which lets more air in to drive the piston. It's difficult to control the penetration of the fastener this way, however, because if you don't hit the gun hard enough, you'll sink the fastener insufficiently. On the other hand, if you hit the gun too hard, the piston can



CUT THE FLOORING CAUTIOUSLY

Cutting prefinished floorboards to length should not be met with trepidation. If done properly, the finished edges will retain their perfect sheen. As with any milling or cutting task, always be sure the blade or bit comes to a complete stop before moving the stock. Failing to do so is an easy way to chip finished edges.

TIP FROM A PRO

Crosscut blades with high tooth counts cut prefinished flooring best. Even so, a layer of painter's tape helps to reduce tearout.



Create a factory end. With a slot-cutting bit in a router, restore the tongue or groove on the end of the board. To restore the factory bevel, make a few passes on the edge of the board with a palm sander.



Finish cut ends. After restoring the factory bevel, wipe a bit of polyurethane finish on the exposed edge. Mohawk clear-finish markers (www.mohawk-finishing.com) are available in different sheens and make this task a breeze.



Butt joints don't cut it. Restoring cut boards to their factory-milling tolerance not only makes each individual board look better, but it also locks the boards together at the same height so that the floor is even across its surface.

come into contact with the wood and crack the tongue.

On this job, I used a Primatch P250 (www.primatch.ca). Primatch guns have a valve assembly that controls nailing impact independently from the mallet strike. Tap the striking surface, and the pneumatic reciprocal action of the valve drives the piston and fastener with a constant, regulated, and uniform push. I typically run this gun with my compressor set no higher than 90 psi. Excessive air pressure can create too much force on the edge of prefinished products, causing edge crushing, unsightly finish cracks, splinters, burnished areas, or broken tongues.

Manufacturers make adapters that fit on the base of flooring nailers to prevent damage to the board's edge. These essential adapters transfer the force of the gun to the flooring

tongue instead of the delicate surface edge. It's important to adjust an adapter for the thickness and contour of the flooring being installed. My gun is outfitted with a fully adjustable base, also made by Primatch, that has bearing-mounted rollers.

With fasteners, I always opt for cleats on prefinished flooring. Staples tend to fracture the flooring tongue and damage the board.

Other tools you'll want to have on site are a miter saw fitted with a sharp crosscut blade (the higher the tooth count, the better), a palm sander for beveling end cuts, and a router with male and female bits for milling the tongue and groove on cut boards. I like the carbide-tipped bits made by Amana Tool (www.amanatool.com) the best.

Finally, an 18-ga. finish nailer helps to fasten boards the flooring nailer can't reach, like

the first and last row of floorboards parallel to walls, or boards held tight to a hearth.

Keep a good floor looking great

My greatest nightmare begins happily enough. I've just completed a prefinished floor with meticulous attention to detail, careful not to place a single scratch in a single board. Then the owners come home. They open the door, and in sprints the dog, digging in his nails as he fights for grip on the slick floor. Next come the kids from baseball practice, dropping bats, mitts, and dirt as they make their way to the kitchen in cleats, only to be followed by the parents, who grind that dirt into the floor with each step.

Wood floors and prefinishes are durable, but they still demand a little respect and proper maintenance. To help prevent dam-

HIDE FASTENERS AND FLAWS

Nailing off the flooring is the easy part. After all, you already have your layout determined. Now it's simply a matter of pulling the pieces of the puzzle into alignment. Whether nailing with a finish nailer or a flooring nailer, be sure your compressor is set to the proper air pressure. Start with the air pressure at 70 psi to 75 psi, and adjust accordingly until the fasteners are set properly.

While you can get away with blind-nailing strip flooring, plank flooring needs extra hold-down power to keep it from moving radically. Before setting a board in place, apply a bead of urethane adhesive on the subfloor. Then nail the flooring every 6 in. to 8 in.



Top-nail, but sparingly. Whether you're installing the first or last row of flooring, you'll need to top-nail the boards. Glue the board down before tacking it with an 18-ga. finish nailer.

TIP FROM A PRO



Use a bash block made of scrap flooring to knock stubborn boards into place. The matching profile ensures that you won't damage the delicate edges of the floorboards.



COVER YOUR TRACKS

Whether you're spot-filling nail holes or covering up a mistake, these products can help you touch up prefinished floors.



Mohawk Fil-O-Wood
www.mohawk-finishing.com
This paste filler, tinted a variety of colors, can complement almost any wood species.



Timbermate Waxstix
www.timbermate.com
These wax sticks can be melted by a butane torch to fill deep or shallow scratches. Waxes can be custom-blended to meet the demands of almost any flooring tone.



Mohawk markers
www.mohawk-finishing.com
These permanent markers, available in a range of colors from blond to black, help to hide shallow scratches in prefinished floors.

BE PREPARED TO NAVIGATE TRANSITIONS

Reducer strips and T-molding are often used to join one floor surface to another, usually at doorways. You won't be able to make these products on site, so be sure to order them along with the flooring if you don't opt for alternatives (right).



Cork replaces reducers at the hearth. It's important to install the flooring a full $\frac{3}{4}$ in. from any walls and hearthstones. Instead of covering this gap with reducer stock, you can fill it with cork. This cork was cut into rolls on the miter saw to match the thickness of the flooring and then fit snugly into the gap the floorboard was nailed off.

Uninterrupted doorways. Instead of using a reducer or T-molding to join wood floors at doorways, you can simply use a piece of flooring. This doorway's casing needed a bit of trimming so that the piece within the door and the flooring butting up to the door would fit properly. Use a scrap of flooring as a guide and either a handsaw or a multitool to trim the casing and the doorstops to the right height.

age, place mats and rugs in the areas that are used the most. Regularly sweep the floors with a soft-bristle broom or a vacuum with a soft-floor attachment, but never with a rug-beater attachment. Do not use wax or oil-based detergents or other household-cleaning agents on your floors; these products may dull or damage the finish. They also can leave a greasy film that makes floors impossible to recoat without sanding to bare wood. Most manufacturers make a no-wax wood-floor cleaner for their products.

If you have dogs or cats, make sure their claws are trimmed regularly because they can scratch the finish and even crush wood fibers. Also, all furniture should have a protective pad under each foot to prevent scratching or denting.

Even after all this care, there will come a time when the flooring needs to be refinished. Many of the new prefinishes have some form of mineral suspended in the finish. These minerals make the finish wear longer, but they are often the same aluminum-oxide minerals used in sanding abrasives.

Abrading these finishes for a recoat can be a challenge. The buffer tends to leave scratch or swirl marks as some of the particles tear away from the finish and grind into the floor. For this reason, most prefinished-flooring manufacturers recommend chemical-bonding systems instead.

Chemical systems either etch the surface or prime it to create a surface for the new finish to bond to. Two such systems are Basic Coating's TyKote system (www.basiccoatings.com) and Bona's Prep system (www.bona.com).

Finally, extra floorboards should always be stowed in a safe place in case a board needs to be replaced. Matching the finish and sheen of a single board can be a nightmare if you don't have a stockpile of spares. □

Charles Peterson is a frequent contributor to *Fine Homebuilding*. His latest book is *Wood Flooring: A Complete Guide to Layout, Installation, and Finishing* (The Taunton Press, 2010). Photos by Rob Yagid, except where noted.



You get what you pay for

Not all prefinished flooring is created the same or costs the same. Expect to pay roughly \$2.50 to \$10.50 per sq. ft. for basic prefinished flooring, and up to \$20 or more per sq. ft. for custom flooring, such as wide-plank hand-scraped, oiled products. Don't skimp on cost, though. Inferior products can be a pain to install. They also may wear faster than pricier products. Here are a few things you'll want to consider when shopping for your next floor.

1. Before you purchase flooring, put some of the floorboards together. Cheap flooring is hard to assemble, and you'll likely damage the boards. Also, their widths may be off by as much as $\frac{1}{8}$ in.
2. Find out what the shortest, longest, and average-size boards will be. Many prefinished boards come in very short lengths that make your floor look like a butcher block. Quarter-Sawn Flooring (www.quarter-sawnflooring.com), the manufacturer I used on this project, produces boards with an average length of 5 ft., although some boards are as long as 12 ft.
3. Determine the manufacturer's overwood tolerance, which is the difference in height from one board to another when installed. I prefer overwood to be less than 0.012 in. Poor products will have tolerances of more than twice this amount and have large bevels on their edges to hide the difference.
4. Pay attention to the thickness of the finish, not the number of finish coats. Some flooring with 10 coats may have 0.0017 in. of finish, while other flooring with only three coats will have 0.0024 in. of finish.
5. Scratch the flooring in the showroom. Some finishes, but not all, leave behind noticeable white streaks when scratched. Scratching the floor before making a purchase gives you an idea of how it will look as it wears over time.