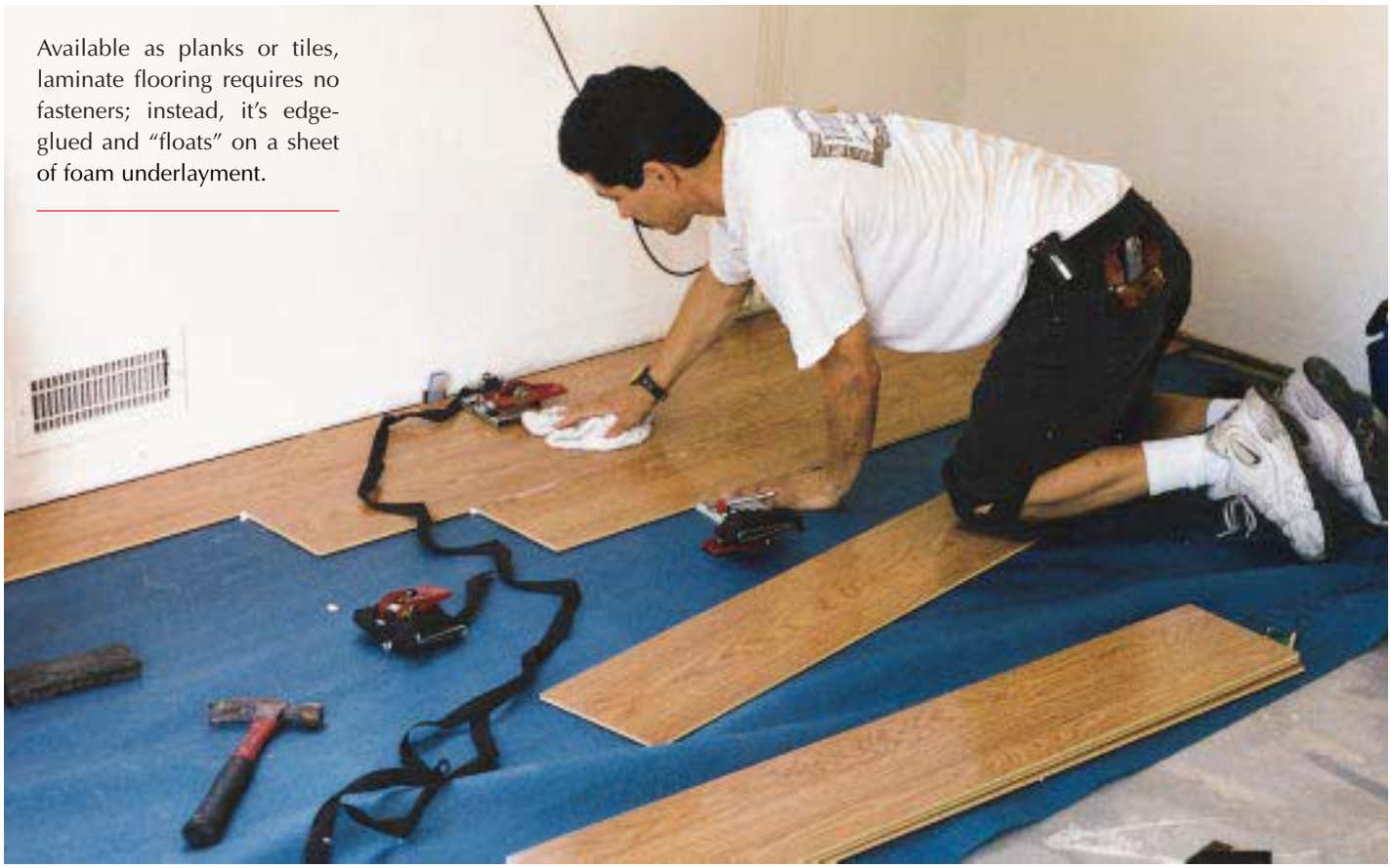

Available as planks or tiles, laminate flooring requires no fasteners; instead, it's edge-glued and "floats" on a sheet of foam underlayment.

INSTALLING Laminate Floors

by Leland Stone

Countertops have long been covered with high-pressure decorative laminate, an inexpensive plastic veneer that is both durable and attractive. This material is now widely available as a flooring product, but installing it successfully depends on careful attention to detail.

Builders have been using laminate flooring in Europe since the early 1980s. These products are usually manufactured as planks or tiles, with a laminate surface and backing sheet bonded to a core of particleboard or medium-density fiberboard (MDF). The resulting composite panels are popular with consumers largely because of their looks; contractors like them because they install easily.

Laminate flooring is made by several manufacturers, but all brands share similar installation requirements. The material is intended for indoor use on flat, level surfaces that are in good shape. (Concrete slabs, even below grade, are acceptable as long as they're fully cured

With a properly prepared substrate, these products will provide a flat, durable floor

Figure 1. Most flooring manufacturers won't warrant installation of their products in bathrooms, because of the potential for water damage. The crew that installed this job claims that bathroom installations are okay as long as the exposed edges of the flooring are sealed.

Figure 2. Laminate flooring is not flexible enough to span even small elevation changes or gaps. The substrate should be scraped smooth and patched with leveling compound before installing the flooring.

Figure 3. Production workers use a flush-cutting jamb saw to trim jambs and casings — even doors — without having to remove them. On small jobs, use a handsaw guided by a scrap of flooring.

and free of moisture.) Thick carpeting must be removed before installing laminate flooring, but most other floor coverings can be left in place as long as they're in good condition.

Radiant heating can be used with most laminate flooring systems, but check with the flooring manufacturer for the maximum surface temperature allowed. Also, most laminate flooring isn't recommended for use in areas subject to high humidity (see Figure 1), although Formica warrants its products for bathroom use.

Unlike traditional types of wooden floors, laminate flooring isn't bonded or fastened to the subfloor. The tiles or planks are glued to each other, but are separated from the substrate by various types of underlayment and vapor barriers. The finished floor is free to "float," expanding or contracting with seasonal temperature and humidity changes.

Expansion joints are used to break large areas of laminate flooring into smaller zones. These gaps are also needed next to walls, cabinets, and other fixed obstructions.

Substrate Preparation

As with most flooring products, preparation of the substrate and adjacent walls and trim is one of the keys to a successful laminate floor.

Moisture. Laminate flooring installed on concrete will turn into a source of endless callbacks if there's moisture present. To check for water vapor coming up through the slab, tape a square of polyethylene sheeting on the floor and leave it for 24 hours. Condensation on the film indicates a moisture problem that should be corrected before proceeding. Applying a vapor barrier may solve minor moisture problems, but check with the flooring manufacturer for specific guidelines.

Subfloor surface. Laying a new floor over a shoddy substrate won't save you any time, and it will multiply any problems that arise later. Take time to patch or repair the subfloor (Figure 2), and cover all subfloors, including dry concrete, with a sheet of thin, closed-cell foam underlayment, which most manu-

facturers supply. The underlayment allows the floor to float on the substrate, plus it acts as a cushion, improving comfort and reducing sound transmission. Seams in the underlayment are butted, and if the underlayment is being used as a vapor barrier, the seams are also taped. Run the seams in the same direction as the long edge of the flooring, and let the edges of the underlayment run up the walls; after the floor is done, cut the foam flush with the top of the floor.

Orientation. When installed, the planks should be parallel to either the longest wall or to the direction of sunlight entering the room, whichever is more prominent. (The rest of the article will refer only to planks, since the installation of tiles is virtually identical.) To determine the number of plank rows needed to cover the room, divide the width of the room, in inches, by the plank width, then subtract 1/2 inch for perimeter expansion.

If necessary, trim the first row of planks so the last row will be at least 2 inches wide. For a custom look, use filler strips of the same width on both sides of the room, rather than leaving a full plank on one side and a trimmed plank on the other. To provide for expansion and contraction over large areas of floor, use expansion joints every 20 to 30 feet (the specs for expansion joints vary by manufacturer). These gaps are later covered with moldings.

Where the flooring meets a doorway, use a handsaw guided by a scrap piece of plank to carefully undercut the bottom of the door jamb and casing. Make sure the underlayment is in place, otherwise the cuts won't be high enough to clear the plank. If you start installing laminate floors full-time, a flush-cutting jamb saw called the Super Saw (Crain Cutter Co., 156 S. Milpitas Blvd., Milpitas, CA 95035; 408/946-6100) will make quick work out of this part of the job (Figure 3).

Installation

With all of the prep work done, it's time to open a box of planks and start fitting them to the job. The starter plank may have to be scribed if the wall is wavy, but remember that you don't want a tight fit (Figure 4). Set your scriber at the widest gap between the wall and the edge of the flooring, and add another 1/4 inch to allow for expansion. If there is

Figure 4. Planks should be scribed against walls, allowing 1/4 inch for expansion.

Tips from the Pros

Terry and Chris Rogers, the father-and-son owners of Rogers Flooring in Upland, Calif., together have more than 30 years of flooring experience. And they've never seen anything like laminate flooring.

"We've done every kind of floor you can name," says Terry Rogers, "but now we only do laminate flooring. It's easier to install, it's less messy to work with, and the profit margins are better." His son, Chris, agrees: "I've had this stuff in my house for years — even in the bathroom, which isn't recommended by the manufacturer — and I've never had a problem with it."

Chris laughs when asked about violating the manufacturer's guidelines. "If we did everything by the book, we'd never make any money." They take their chances, since manufacturers won't warrant floors that aren't installed as recommended. But Chris points out that even though Rogers Flooring pushes the limits, they do so based on years of experience and a feel for the business. Here are a few tips gleaned from hundreds of installations:

Keep the site clean. Sawdust and other job-site debris under the new floor will make a cracking noise when the client walks on it. Later, it could cause a surface crack.

Make sure the floor is flat. Laminate flooring isn't a structural material, and shouldn't be used to bridge gaps or span even slight changes in elevation. Terry Rogers swears by Webcrete 95 (DAP, Inc., 855 N. Third Street, Tipp City, OH 45371; 937/667-4461), a leveling compound used to smooth out an uneven subfloor.

Prep the edges. Use silicone or other approved sealant on exposed edges of the planks around the floor's perimeter. This is especially important in moist locations, such as near the sink base cabinet in the kitchen.

Use transition strips. They're not only used for changing elevations or materials, but as a border when changing the direction of the flooring. Expansion strips also break up large areas of flooring, and work well as saddles in interior doorways.

Walk the job. It's common practice in the flooring industry for the store that sells the flooring to a homeowner to sub out the installation. To avoid having to eat the cost of extras not included in the supplier's price, walk the site looking for problem areas — like a large number of required undercuts, difficult curves, or numerous small elevation changes — that should be back-charged to the client.

—L.S.

Figure 5. Use spacers (supplied by some manufacturers) or flooring scraps to establish the expansion gap. Note the blue foam underlayment.

Figure 6. Using a tapping block, seat the end joints until an even glue line squeezes out. Most manufacturers supply strap clamps to hold successive courses in place until the glue dries. Staggered butt joints help to make the finished floor appear seamless.

Figure 7. Some manufacturers recommend cleaning up the glue immediately; others advise allowing the squeeze-out to set up partially, then scraping it off.

no wall to start against, temporarily nail a 1x4 in place to act as a guide for setting the first row of planks.

Figure 5 shows a textbook installation, which starts in a corner. If you can't start in a corner, planks should still be laid from right to left, with both edge and side grooves facing away from the area to be covered. The first course is held in place at each end by plank offcuts or spacer blocks sold for this purpose.

To lay field pieces, apply the manufacturer's adhesive to the first plank of the next course and seat the tongue-and-groove joints with a few light hammer blows on a tapping block (Figure 6). Tap first on the end of the plank, sliding it into the previous course; with successive planks, tap on the long edge as well. An even line of squeeze-out indicates a good joint. Note that gluing techniques vary by flooring manufacturer. Depending on the brand, you may glue the tongue or groove, and squeeze-out will be cleaned immediately or allowed to partially set and cleaned later (Figure 7).

When cutting the last plank in a given course to fit, remember to allow 1/4 inch for expansion. To avoid chipping the plank, lay the planks face down when cutting with a circular saw, but face up on a table saw.

Where an abutting wall prevents you from using a tap block, gently press the plank into place with a hooked pry bar, or use a scrap to create a fulcrum for a flat bar or chisel. Before moving on to the next row of planks, install the spacer blocks.

To avoid calling attention to butt seams, end joints in planks should be staggered over several courses before repeating. Mark the first plank of the next row 12 inches from the groove end, then cut and install the 36-inch piece. Save the offcut for the other end of the row. On the following row, cut the first plank at 24 inches long, and continue this pattern as you work across the room, as shown in Figure 7.

Cut-offs used as a starter for the next course should be at least 8 inches long (recommendations vary by manufacturer). This is mostly for aesthetic reasons, but small pieces may not have

Figure 8. Careful undercuts at door jambs and casings make for a clean finish detail (above). At transition moldings, such as where laminate flooring meets tile and when installing base moldings (left), avoid getting any adhesive on the flooring or driving nails through the molding into the flooring. If floor movement is restricted in any way, seasonal dimensional changes can cause serious damage.

enough mass to lay flat.

Each laminate flooring plank also needs to be clamped. The clamps are reset as each new course is added, keeping enough pressure on all of the joints to ensure a strong bond. Most of the manufacturers make strap clamps for this purpose, and one company provides a type of bar clamp for its flooring. If you're doing a single installation, ask the distributor who sold you the floor whether clamps and accessories can be rented.

While clamping the planks, you can weight them down if they start to buckle, but avoid walking on the new floor as much as possible. Don't allow furniture to be moved onto the floor until at least 12 hours after installation.

Finishing touches. After the last row of planks has been scribed, cut, and pried into place, replace the strap clamps with spacer blocks wedged between the planks and the wall. After the glue has set, prep for base moldings by removing all of the spacer blocks, starting with those that were placed first.

Base and shoe moldings are installed on laminate flooring the same as on any floor: Miter or cope the corners, and use the smallest nails you can get away with. Laminate-covered moldings in a variety of sizes and profiles are available from flooring manufacturers. Again, make your cuts carefully to avoid tear-out.

Transition moldings are used wherever there's a change from laminate flooring to another surface, like vinyl, tile, or carpet. These moldings can be nailed or screwed in place, and can be glued to concrete subfloors. At door jambs, where moldings can't be used, the kerfing technique described earlier produces a clean finish detail (Figure 8).

It's okay to install moldings snugly against the flooring, but don't allow adhesives or fasteners to restrict floor movement. The high-tech plastic surface is bonded to a temperamental wooden core that needs to be able to expand and contract freely.

Leland Stone *is an associate editor with the* Journal of Light Construction.

Laminate Flooring Sources

Most manufacturers go out of their way to help you install their products, and everyone on this list offers detailed instruction manuals. But call around, since most of these manufacturers offer more comprehensive guides, such as videotapes, and some of them even host installer workshops.

Bruce Floors
16803 Dallas Pkwy.
Dallas, TX 75248
800/722-4647
Traffic Zone

Formica Corporation
10155 Reading Rd.
Cincinnati, OH 45241
513/786-3400
Formica Laminate Flooring

Mannington Mills
P.O. Box 30
Salem, NJ 08079
800/356-6787
www.mannington.com
Mannington Laminate Floors

Perstorp Flooring
524 New Hope Rd.
Raleigh, NC 27610
800/222-1827
Pergo

Uniboard Canada
5605 Cypihot St.
St-Laurent, Quebec H4S 1R3
800/351-7991
Multi Look Prestige Flooring

Wilsonart International
P.O. Box 6110
Temple, TX 76503-6110
254/207-7000
Wilsonart Laminate Flooring