DETAILING
Laminate Flooring

Well-planned transitions are key to a good-looking installation

There are two basic types of laminate flooring: square or rectangular tiles, which are usually made to simulate stone or ceramic tile; and plank flooring, which resembles wood. In both cases, the laminate surface is bonded to a substrate of medium-density fiberboard. The individual planks or tiles have tongue-and-groove edges that are glued together and held with special strap clamps, resulting in a smooth, stable, gap-free floor.

by Dave Kostansek

The biggest difference between laminate flooring and traditional flooring materials is that laminate flooring is fastened to the subflooring only by gravity and allowed to "float" on a thin layer of foam underlayment. Quarter-inch expansion gaps at the edges of the floor allow it to expand and contract with seasonal changes in temperature and humidity.

I'm a flooring installer and woodworker in the Cleveland area, where laminate flooring has been steadily gaining in popularity for the past five or six years. Although I still work with vinyl, ceramic tile, and some hardwood strip flooring, laminate now accounts for about half of my business. Most of that increase has come at the expense of sheet vinyl. I find that homeowners who have had bad experiences with dents and gouges in cheap builder-grade vinyl seem to like the idea of hard-surfaced laminate flooring.

I use all three leading brands of laminate — Pergo, Wilsonart, and Formica — as well as numerous other brands. Each company has its own styles, and my client's choice of color and pattern usually determines what brand I use on a given job. But my personal

Figure 1. Laminate flooring can be applied over a variety of substrates, including existing flooring materials, as long as the surface is flat enough. Surface irregularities that exceed 3/16 inch in a 6-foot span must be filled or cut down. Acrylic- or latex-fortified cement-based floor patching material used to fill low spots should be tapered to a feather edge.

Figure 2. Minor low spots can be corrected with several layers of 15-pound felt (above). Cutting each successive piece smaller than the one before builds up the greatest thickness in the center and tapers the edges. If necessary, the felt can be taped in place until the weight of the laminate floor holds it in place permanently. The author also uses cedar shims to ease transitions at doors and stairways (right).

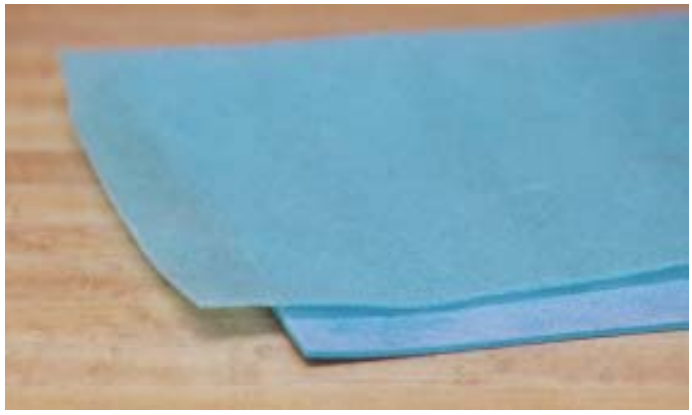
favorite is Pergo, because its gluing system permits easier cleanup and the manufacturer provides better transition pieces than any other company.

Generally speaking, I've found that the installation instructions supplied by manufacturers are pretty good — they're enough to get you going, at least. But they leave out a lot of the tricks and fine points that make the difference between a so-so installation and a really professional job.

Preparing the Subfloor

One of the great things about a floating laminate installation is that it can be put right on top of many existing materials, including wood, vinyl, and concrete. It can even be applied over some types of carpeting, such as short, dense commercial carpet. In most cases, though, the carpeting will have to come up anyway, so the subfloor can be adequately prepared. Soft, thick carpeting always has to be removed. Laminate can go over wood flooring that has been installed over joists, but existing hardwood that's glued to concrete has to be torn up, because the required vapor barrier under the laminate could create a

Figure 3. All laminate flooring manufacturers require a poly vapor barrier if the laminate will be applied over a concrete subfloor. Adjoining sheets of poly should be taped in position and must overlap by at least 8 inches (left). The vapor barrier is followed by a foam underlayment that provides cushioning and compensates for any remaining irregularities in the subfloor. Pergo offers the choice of a standard-grade underlayment (on top in the bottom photo) or a denser premium-grade material (underneath).



moisture lock and cause the wood to rot or develop mold.

Building up. Laminate isn't a structural material, so it can't bridge gaps or low spots. Each manufacturer specifies the maximum permitted height difference between high and low spots — typically 3/16 inch over a 6-foot span. To check the floor for level, I use the same 6-foot aluminum straightedge I use when installing ceramic tile (see Figure 1, previous page). Once I've identified the low spots, I fill them with acrylic- or latex-fortified cement-based floor patching material, which adheres well to concrete and existing vinyl, as well as plywood and OSB. Smaller low spots are easily built up with overlapping layers of 15-pound felt (Figure 2, previous page).

I also carry a lot of homemade shims of different thicknesses and widths, which often come into play around doors and entryways.

Lowering high spots. High areas on joisted floors usually take the form of humps or ridges running the width of the floor. Coarse sandpaper in a floor edger with a dust collection system works very well for high spots on wood or plywood. On a vinyl floor, I outline the high spot with a grease pencil and score the material at close intervals with a sharp utility knife, then cut it down with a four-inch razor-blade scraper. It's usually not practical to cut down high spots in concrete. Instead, I build up the rest of the floor with self-leveling concrete.

Vapor Barriers and Underlayment

When laminate flooring is installed directly over concrete or vinyl-covered concrete, all laminate flooring manufacturers require a poly vapor barrier between the subfloor and the foam underlayment. (Some manufacturers offer a "two-in-one" underlayment that also serves as a vapor barrier.) Each manufacturer provides its own proprietary brand of 6-mil poly. There's probably little difference between them, and it can be tempting to use leftover poly from one job

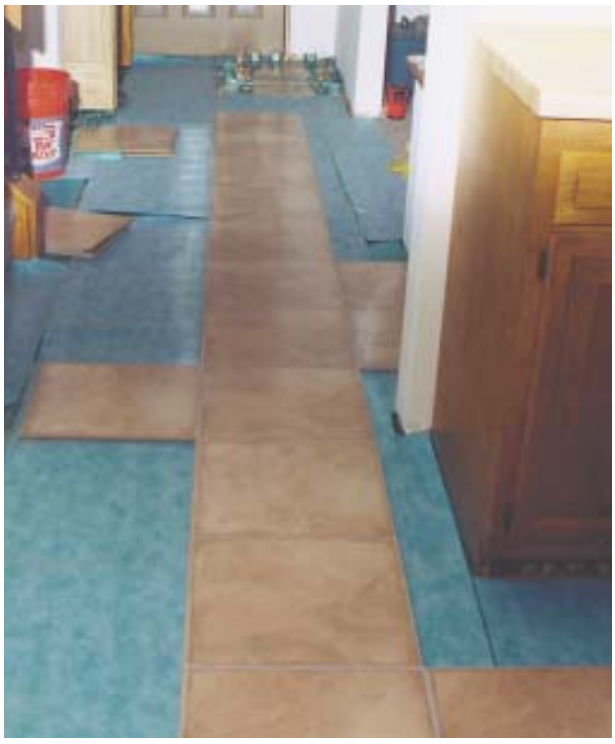


Figure 4. The first three rows of flooring are cut and dry-fitted to ensure an accurate and attractive layout. Note that the foam underlayment, unlike the vapor barrier, fits closely together but does not overlap.

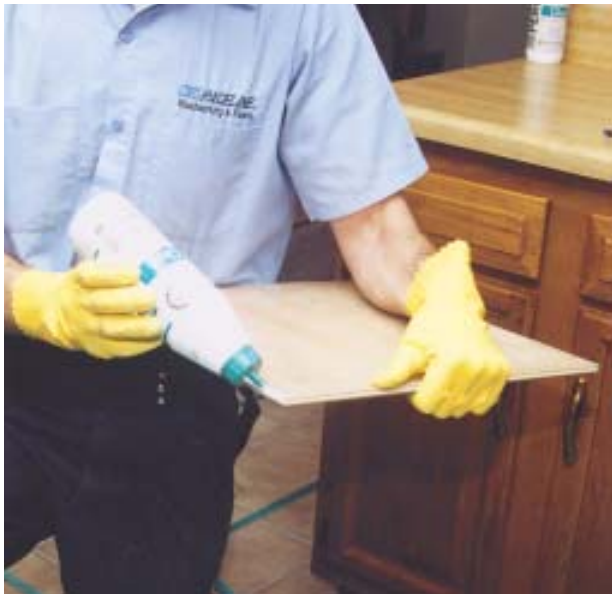


Figure 5. The grooved half of each joint between tiles or planks is carefully filled with a proprietary glue. Failure to use enough glue is the most common cause of laminate floor problems. Squeeze-out should be cleaned up according to the manufacturer's directions — in the case of the Pergo floor shown here, by wiping the joints immediately with a clean rag squeezed in a bucket of warm water.

under a different brand of laminate; but to prevent possible warranty problems, I avoid mixing materials from different manufacturers. Adjacent sheets of poly should overlap by at least 8 inches.

Most manufacturers offer a choice of standard-grade foam underlayment or a denser premium grade (Figure 3, previous page). Prices vary from one manufacturer to the next, but the standard material typically sells for less than 50 cents a foot, while the better grade goes for two or three times that.

I recommend the better-quality underlayment, because it provides better sound deadening and a more solid feel underfoot. This can be an important issue with customers, who often expect woodlike laminate to have the same distinctive "thud" underfoot as real wood. Educating them about what to expect can prevent disappointment later.

Layout, Gluing, and Clamping

The usual floor layout rules apply to laminates: Center the tiles or planks on doors or in hallways, stagger joints between planks by at least 8 inches, and avoid slivers and U-shaped cutouts. I use a Gizmo III laser — which has a 90-degree function — to make sure that my initial layout is straight and square to the room. I cut and dry-fit the first three courses before I start gluing to make sure that everything lines up the way I want it (Figure 4).

Glue joints and direction changes. It's important to use enough glue. A continuous bead should be applied to the grooved side of each plank or tile (Figure 5); and when the joint has been tapped together and clamped, a thin line of squeeze-out should appear along the entire joint. Some brands have slightly different gluing procedures; for example, the directions may call for applying a bead of glue to the top of the groove and the bottom of the tongue. Depending on the manufacturer, the squeeze-out is either scraped off after it has partially set or immediately cleaned up with a damp rag.

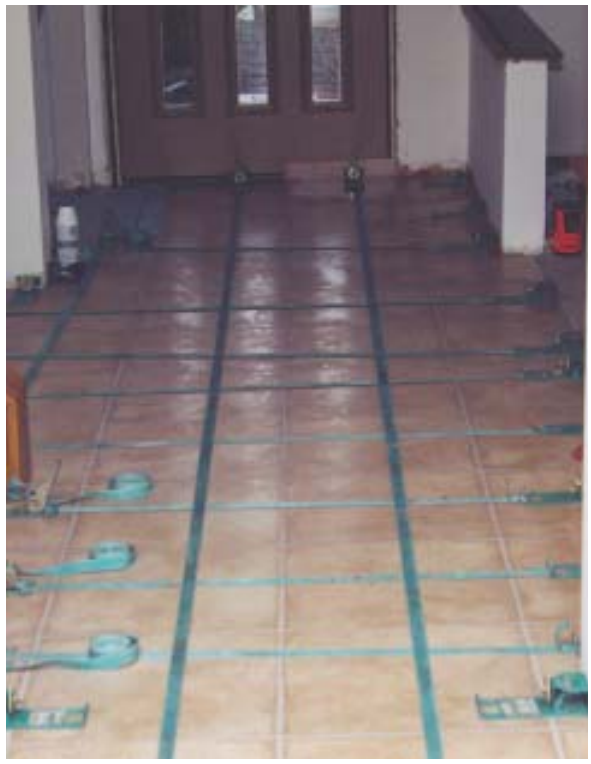


Figure 6. Proprietary strap clamps secure the first rows of flooring (above). Clamps can be adjusted to alter the spacing between the edge of the flooring and the adjacent wall to compensate for any irregularities in the framing. A carefully aligned initial strip of flooring several tiles wide is glued, clamped, and allowed to set up for an hour. Clamps are then loosened and retightened as needed to place additional tiles (right).

The gluing and assembly process starts at one corner of the room, where a section several tiles or planks long and wide, with the grooves facing the walls, is glued, clamped, and allowed to set up for an hour (Figure 6, previous page). This provides a solid base to build onto one piece at a time, loosening and retightening the clamps as pieces are added.

Especially when I'm working with tile-type flooring, I check the alignment often, because any irregularities that creep in at the start will get worse as you move along. To maintain proper pressure on the joints, I keep the clamp straps neatly aligned with the seams between tiles. As in laying hardwood flooring, a slip tongue can be used to change direction when needed to keep an efficient work pattern (Figure 7).

Figure 7. Tiles are typically installed from left to right, beginning with a grooved side against the wall. Slip tongues are used to change direction where needed to avoid an inefficient "backfill" installation.

Cabinet Trim

There are several ways to conceal the quarter-inch expansion gap where the flooring meets kitchen or bathroom cabinets. The most popular approach is to

Figure 8. Quarter-round trim strips are fastened to cabinet bases to conceal the required 1/4-inch expansion gap between flooring and base. The kickspace can be finished with vinyl cove base.

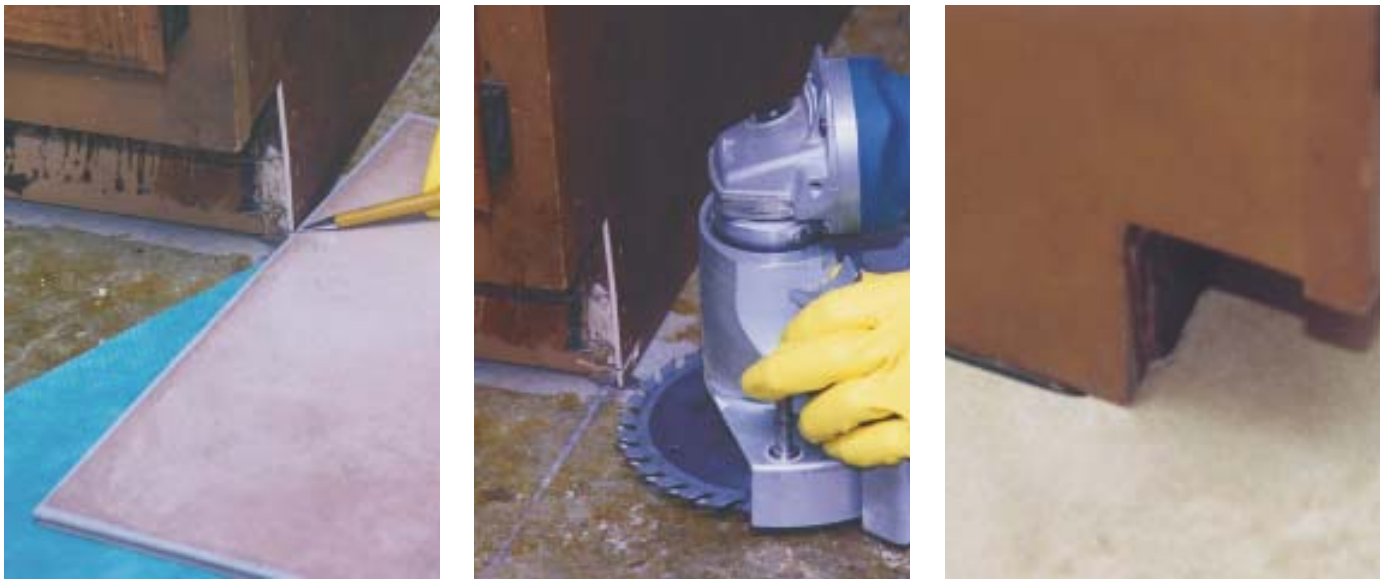
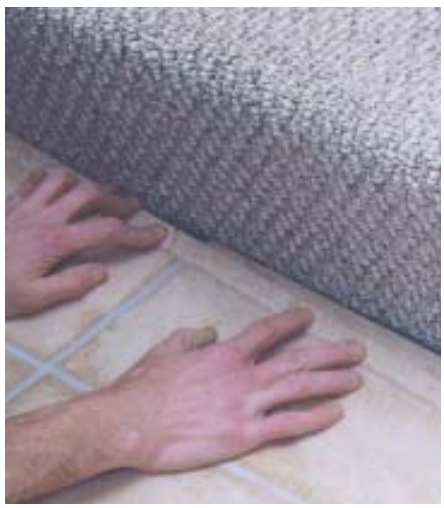


Figure 9. To eliminate the need for quarter-round at the base of the toe kick, the author scribes the combined thickness of the flooring and underlayment on the outside corners (left), which are then slightly undercut (center) and cleaned out with a chisel. Leaving a small amount of extra material in the corner of the adjoining L-shaped tile lets the flooring dive under the corner for a clean look with no visible gap (right). The expansion gap in the kickspace is covered with vinyl cove base, which is cut off flush with the side of the cabinet. The gap at the side is concealed by quarter-round that terminates just short of the corner with a back cut.



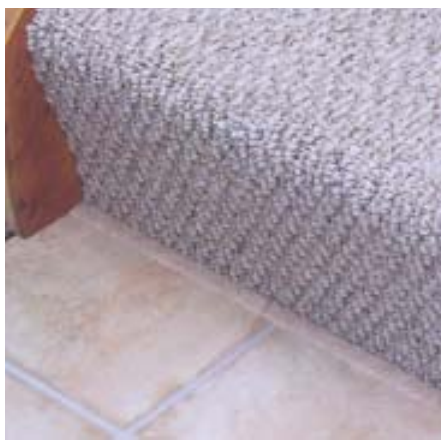


Figure 10. Here, the author trims the transition between flooring and a sliding door threshold with end molding (above). The vertical leg of the trim piece is embedded in a bead of silicone caulk in the gap between flooring and threshold; undercutting the side casings makes it possible to slip the molding beneath them, eliminating the need for complicated scribe cuts. End molding can also be used to trim the base of a carpeted riser (above right). If the gap between flooring and riser is sized correctly, the pressure from the carpeted riser will hold the trim piece firmly in place but still allow the floor to move (right).

enclose the cabinet base with base shoe or quarter-round molding, which is coped or mitered at the corners (Figure 8, previous page). Depending on what the customer wants, I'll use a real wood molding that's stained or painted to match the cabinet, or a laminate-faced molding that matches the floor, available from the flooring manufacturer.

To avoid impairing the flooring's ability to expand and contract, the molding should be nailed only to the cabinet base, not the floor. I use Senco's new air-free brad nailer for this job, because it saves me from having to lug around a compressor and hoses to run a few feet of trim.

Another method, which I often use in bathrooms, does away with the quarter-round in the toe kick while still leaving a clean, gap-free corner (Figure 9). This requires undercutting the cabinet base at the outside corners and takes a little more time, but it's made much easier with a good undercutting saw. I use the Sinclair Ultrasaw (Sinclair Equipment, 800/624-2408, www.sineqco.com), which also comes

Figure 11. Transitions between laminate flooring and carpeting require a two-piece carpet reducer (top left). After the U-shaped metal base is fastened to the concrete subfloor with expansion anchors and screws (top right), the transition piece itself snaps into place. In a neat-looking installation, the lip of the trim piece should be pressed snugly against the carpet (right). If the height difference is too great — which is often the case where thin, dense carpeting is used — it may require "ramping up" the edge of the carpet to the proper height with cedar-shingle shims between carpet pad and subfloor.

in handy for dealing with door side casings and other tricky areas.

Baseboards and Room Perimeter

It's especially important to leave an adequate perimeter expansion space in new construction. Framing lumber, drywall, and fresh concrete emit a lot of water vapor, which can cause a floor to buckle if it doesn't have room to expand.

But it's also important to prevent water from making its way into the expansion space and damaging the floor. In wet areas like bathrooms, the expansion gap and the area under the toilet flanges must be filled with 100% silicone caulk. The same goes for potentially wet areas in kitchens, such as along cabinets below a sink or dishwasher. I install moldings immediately after I fill those areas with sealant, because once the silicone sets up, it often has high spots that can keep the molding from sitting flat.

Baseboard options. The simplest way to deal with baseboards is to bring the laminate up to the existing base and cover the gap with quarter-round or base shoe. This is an easy and inexpensive approach, and it's the one that most of my customers seem to prefer. But this method does have a drawback. With narrow baseboard, the built-up height of the floor and the added height of the shoe molding can make the base seem awkwardly small and "buried." If the base is only $2\frac{1}{4}$ inches high to begin with, it can end up looking very skinny by the time you're done. I explain all this to my customers so they won't be surprised by the finished appearance.

A more labor-intensive option is to reuse the original baseboard by removing it before the flooring goes down and reinstalling it afterward. If it's too much trouble to save the old base, it can be replaced with matching new material. Either way, the baseboard itself covers the expansion gap, so there's no need to add a base shoe. A drawback to this method is that the reset or replaced baseboard will sit about $\frac{3}{8}$ inch higher on the wall than it did originally, so it won't match the height of the base in areas where the floors haven't been covered with laminate. I often use plinth blocks or some other additional trim to conceal the height difference where the two levels meet.

Other Transitions

Pergo makes a very versatile piece of trim called end molding, which is an L-shaped piece that is useful for trimming around door thresholds, hearths, and even carpeted stair risers (Figure 10, previous page). Other makers also offer end molding, but I find that most of them are too bulky for my taste and need to be cut to produce the profile I like.

Transitions between laminate flooring and carpeted areas are trimmed with a two-piece carpet reducer (Figure 11). A similar hard-surface reducer is used for transitions between laminate and vinyl, wood, or tile.

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