# Make Your Own Laminate Countertops

## With inexpensive tools and materials, you can build durable, distinctive worksurfaces in just about any size or shape

BY STEVE MORRIS

Choosing a kitchen countertop is a big deal. The surface has to be durable, attractive, and complementary to the kitchen's style. The decision becomes more difficult when you consider cost. You can spend thousands of dollars on the countertops for an average kitchen, but you don't have to. Fabricating and installing a laminate countertop can save you loads of money.

The popularity of expensive countertop materials like granite, solid surface, and engineered stone makes it easy to overlook the appeal of plastic laminate. But laminate countertops still have the durability and beauty to compete with more expensive options, and there are more colors and patterns to choose from than with any other material.

Making your own laminate countertops doesn't require many tools, and the price of materials—laminate, particleboard, and contact cement—is insignificant. You can make countertops in a garage or in a basement, or you can work outside if the weather is nice.

### Start with a custom fit

One benefit of laminate countertops is that they can be made to fit large, oddly shaped areas without seams. Sheets of laminate are available as large as 5 ft. by 12 ft. But before I get to the laminate, I have to build a substrate. The substrate is the structural part of the countertop to which the laminate is glued. Whether I am fabricating a large, oddly shaped kitchen countertop or a small bathroom-vanity top, I prefer to prepare the substrate in place—right in the kitchen, in this case (photo facing page). This way, I can be sure the finished countertop will fit correctly.

Particleboard is the best material to use for the substrate, and fortunately, it is the least expensive. Plywood is too grainy, and medium-density fiberboard (MDF) is too heavy. Particleboard is strong enough to do the job and provides a smooth surface for laminate. I use 11⁄16-in. particleboard to make my countertops.

If the kitchen is large enough to set up sawhorses and if the room can be sealed to contain dust, I work right in the kitchen. Otherwise, I set up outside. I measure from the walls to the edges of the cabinet frames and add ¾ in. Later, when I add wood strips to the edges, the overhang will increase to 1½ in. If the cabinets have full-overlay doors and drawer fronts, the result will be a finished overhang of ¾ in. (drawing p. 60).

I cut the particleboard with a circular saw guided by a straightedge (see "Building Skills," p. 122). Then I put the substrate in place to make sure it fits well. This often means scribing the particleboard to the

***The substrate is critical.*** *To ensure accuracy, the author fabricates the substrate where it will be installed. Here, he's truing a particleboard edge by guiding a router against a straightedge.*

walls. It is safer to cut the scribes on the blank substrate than to cut the laminated top during installation.

I avoid joining sheets of particleboard when I can. Sometimes, however, joints are inevitable. Preparing the substrate in place allows me to determine the best spots for joints. Even with thorough filing and sanding, particleboard joints can show up in finished countertops. For this reason, I try to hide the joints in corners or under the top cabinets.

Particleboard sheets are joined with biscuits and countertop bolts. On a 2-ft. joint, I use four biscuits and two bolts. The T-shaped mortises for the bolts are cut freehand with a router and a ½-in. straight

## Endless choices and unbeatable prices

These days, everyone wants kitchens full of granite and stainless steel because they are durable and attractive. But before you write off laminate as a choice for your kitchen countertops, consider this: Among only a few major laminate suppliers, there are hundreds of styles and colors to choose from. From the look of stone, metal, and glass to wood-grain patterns and solid colors, there is a style and color to complement any kitchen or bathroom. Laminate is available in different grades, including fire-rated, chemical-resistant, and abrasion-resistant materials. Laminate is durable and easy to work with. The edges take a number of interesting treatments, including simple bevels and wood nosings. And laminate costs as little as $2 per sq. ft. Add the cost of the substrate, the glue, and your time, and laminate countertops still cost a fraction of the alternatives.

### SOURCES OF SUPPLY

**Wilsonart**
www.wilsonart.com
800-433-3222

**Formica**
www.formica.com
800-367-6422



Laminated edges have the look of solid-surface material.

Wood nosing can be made to match the cabinets.

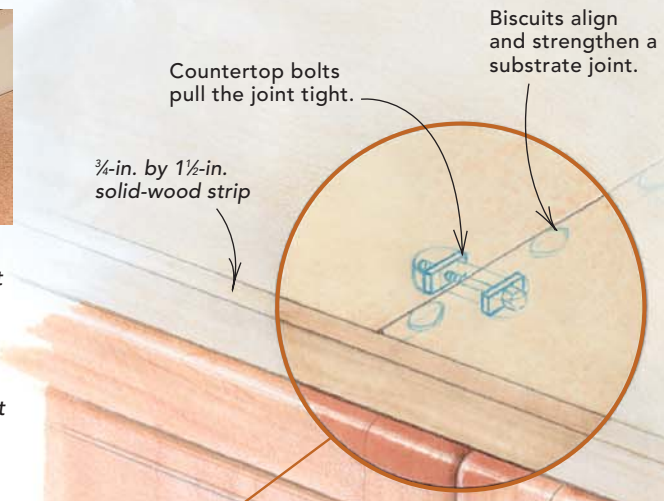
A half-round nosing softens the countertop edge.

Photo top right: Scott Phillips. Bottom three: Courtesy of Wilsonart.

# PREPARING THE SUBSTRATE

Walls can be bowed, and corners aren't always square. If you measure, mark, and cut the particleboard substrate in place, you can make sure that the countertop fits the cabinets and the walls.

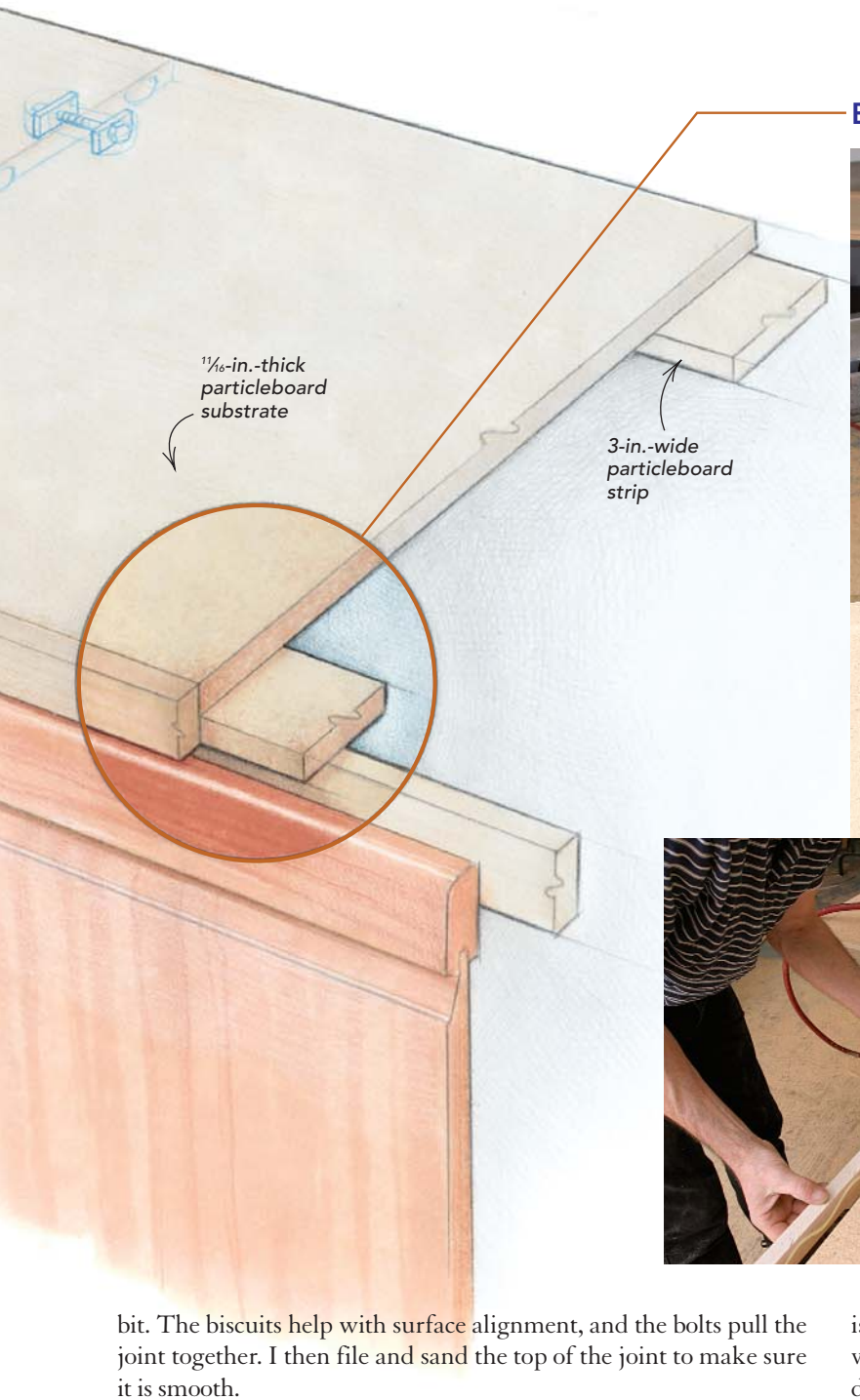
***Scribe now, not later.*** *The substrate should fit flush against the wall, and the overhang should be consistent along the length of the cabinets. Scribe and cut the particleboard to fit the walls now to avoid having to cut the finished countertop during installation.*




## Make joints strong, straight, and smooth

***If you can't avoid a joint,*** *try to plan the least-obtrusive places to join the particleboard pieces that will make up the countertop. Overlapping two pieces allows you to mark the exact location of the joint. You can cut particleboard to size with a circular saw. For smooth, straight edges, run the saw against a straightedge guide.*

***Biscuits and bolts work together.*** *Mark biscuit locations every 6 in. A pencil line across the joint is all you need to align the biscuit joiner. Bond each joint with yellow glue. Hidden on the underside of the substrate, countertop bolts clamp the joint together.*




## Build up the edges for strength

***Double up the perimeter.*** *Build up the edges with particleboard strips. On the edges that will be laminated, attach the strips flush with the top. On the back edges, recess the strips about ¼ in. to ease any scribing that has to be done. Glue and nail solid-wood strips along the front edge. The wood strips stiffen longer surfaces and accept contact cement better than the cut edge of particleboard.*

bit. The biscuits help with surface alignment, and the bolts pull the joint together. I then file and sand the top of the joint to make sure it is smooth.

### Build a stronger countertop

To provide strength and to make the countertop look 1½ in. thick, I reinforce the edges with 3-in.-wide strips of particleboard. Along the front and along any exposed edges, the strips are glued and nailed flush and are sanded smooth with a belt sander. In the back, where the countertop meets the walls, the strips are recessed about ¼ in. Any area at which the countertop overhangs the cabinets by more than 6 in., such as a bar top, is doubled up entirely.

Attaching ¾-in. by 1½-in. hardwood strips to the front edge of the substrate is the next step. The wood strips stiffen the surface, which is helpful when installing long countertops. The wood also gives the vulnerable front edge of the countertop some extra hardness and durability, and it accepts contact cement better than the porous cut edges of the particleboard.

### Be careful with the laminate

Until it is glued to the substrate, plastic laminate tears and cracks easily. It is important to treat large pieces carefully. I leave the laminate rolled up in the box until I am ready to work with it. Laminate can be cut in various ways, but I use a laminate trimmer or a small router with a sharp laminate bit. A dull bit will chip the laminate.

The laminate is first cut oversize, then trimmed after it is glued to the substrate. I clamp the sheet of laminate to a large table or a sheet of plywood and cut 3-in.-wide strips for the edges. Then I cut the top

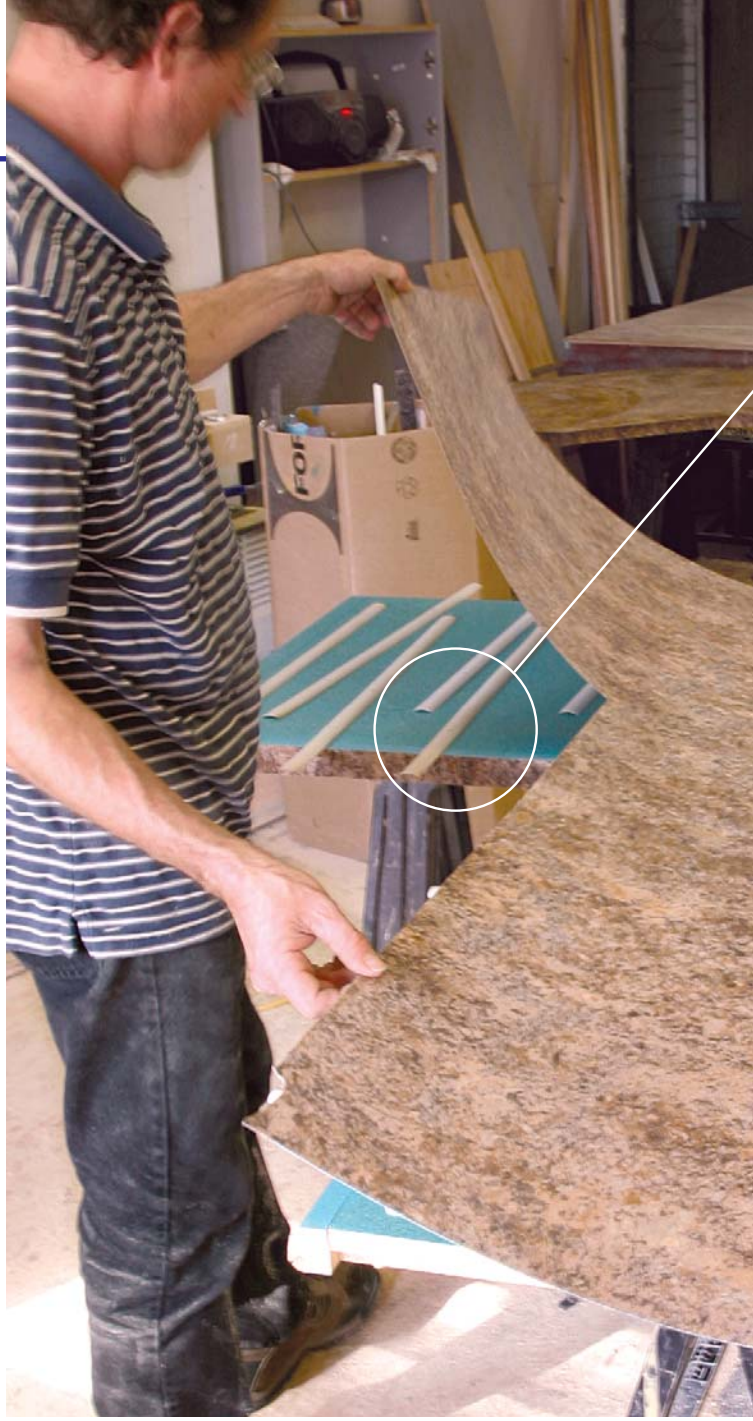
Drawings: Bob La Pointe

## LAMINATING THE COUNTERTOP

Get the front edges done first, then turn to the top. Once the glued-up laminate and substrate meet, it's difficult to separate them. Starting with oversize pieces of laminate and aligning the top on spacers helps to prevent mistakes.

***Edges first.*** *After adhering a laminate edge strip along the front edge of the countertop, trim it flush. A bearing-guided flush-trimming bit gets the job done.*

***Latex doesn't stink.*** *Use a roller to apply two coats of latex contact cement to the substrate and the laminate. Make sure the contact cement is dry on both surfaces before gluing them together. Spacers keep the two adhesive-coated surfaces apart while you position the large top sheet of laminate. When you're ready, remove the spacers, starting in the middle of the countertop and working out toward the edges.*



pieces of laminate on the prepared substrate, where I can follow the shape of the countertop. The cutoffs must be supported, or they will crack.

Joining pieces of laminate is tricky. Never rely on the factory edge of the laminate to be straight. If you are joining large sheets, use a laminate trimmer or a router with a straightedge and trim both pieces to make sure they are straight and square. Cut edge strips to length with a miter saw. Sandwich the laminate strip between two scraps of particleboard, and make the cut through the particleboard and the laminate.

### Laminate the edges first

Contact cement is sticky, so work slowly when you are gluing the laminate. Once you glue down a piece of laminate, you probably won't be able to get it off.

I use latex contact cement because it is nontoxic and nonflammable (www.lepageproducts.com). Both the laminate and the substrate get two thin coats of contact cement. Two thin coats dry faster than one thick coat. Because the particleboard will absorb some of the contact cement, the first coat is used to seal the pores, while the second coat remains on the surface, where I want it. Allow the contact cement to dry completely between coats and before applying the laminate to the particleboard.

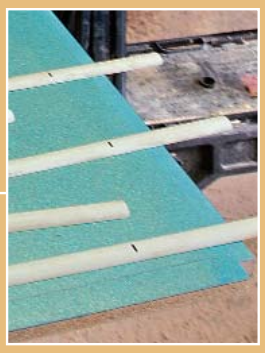
The edges are laminated and trimmed first. After the edge strips all are applied, I press them to the substrate with a roller. I use a heat gun to bend edge strips into and around radiused corners. Heating the laminate helps to prevent cracking as it bends. Pushing a heated edge piece into a curved inside corner is more difficult than turning an outside corner. Any voids that are left between the laminate and the substrate will be filled with epoxy before the top laminate goes on.

To trim the edge pieces flush, I usually use a bearing-guided flush-trimming bit, which can be chucked in a laminate trimmer or a small

Bit photo: Scott Phillips

## THREE TIPS FOR WORKING WITH LAMINATE

1. Use Venetian-blind slats as spacers between the substrate and laminate sheets to make sure the laminate is aligned properly before the two glued-up surfaces are allowed to touch.
2. For a clean-cut laminate edge, first cut a longer strip than you need. Then put the end of the strip between two scraps of particleboard and cut it with a miter saw.
3. Laminate warmed up with a heat gun or a hair dryer is easy to bend. Pull the laminate gently while applying heat. At first the laminate will resist, but after a few minutes, it will bend.

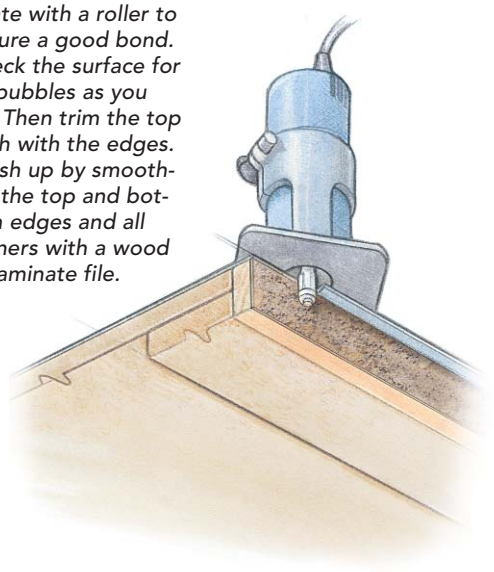


*1. Venetian blinds make great spacers.*

*2. A laminate sandwich makes for clean cuts.*

*3. Heat laminate to make it flexible.*

***Final steps.*** *Press the laminate to the substrate with a roller to ensure a good bond. Check the surface for air bubbles as you go. Then trim the top flush with the edges. Finish up by smoothing the top and bottom edges and all corners with a wood or laminate file.*



### Online connection

Laminate countertops are installed much the same way as postformed countertops, the subject of the author's first article. To read "Counter Act" (*FHB* #121), visit www.finehomebuilding.com.

router. After the edges are trimmed, I give the top of the substrate a final check to make sure it's flat and smooth. Slight irregularities near the front edge—between the particleboard, the wood edging, and the laminate—can be removed with a file or a belt sander.

### Align the top sheet carefully

Before contact cement is applied to the top of the substrate or the large sheets of laminate, these surfaces should be dusted thoroughly with a brush or air hose to remove debris. Even a tiny piece of debris will show through the laminate.

To line up large sheets of laminate without letting them touch the glued-up substrate, I use Venetian-blind slats as spacers. The laminate is placed on top of the spacers and positioned as it will lay on the substrate. Starting in the middle of the countertop, I work my way toward the ends, removing the spacers and pressing down the laminate. To ensure a good bond, I use a roller to press the laminate to the substrate.

If I find an air bubble, I heat the laminate from the bubble to the nearest edge to create an exit for the air. If that doesn't work, I can drill a small hole (1/16 in.) through the bottom of the substrate to get the air out from under the laminate.

The oversize sheet of laminate then can be trimmed around the edges of the countertop. Use a light touch with the laminate trimmer or router to avoid marking or scratching the laminated edges. Because the cut edges of the laminate can be sharp, the last thing I do is lightly file the top and bottom edges and all the corners with a hand file. M

Steve Morris is a finish carpenter and kitchen installer in Sarnia, Ontario, Canada. Photos by Brian Pontolilo, except where noted.