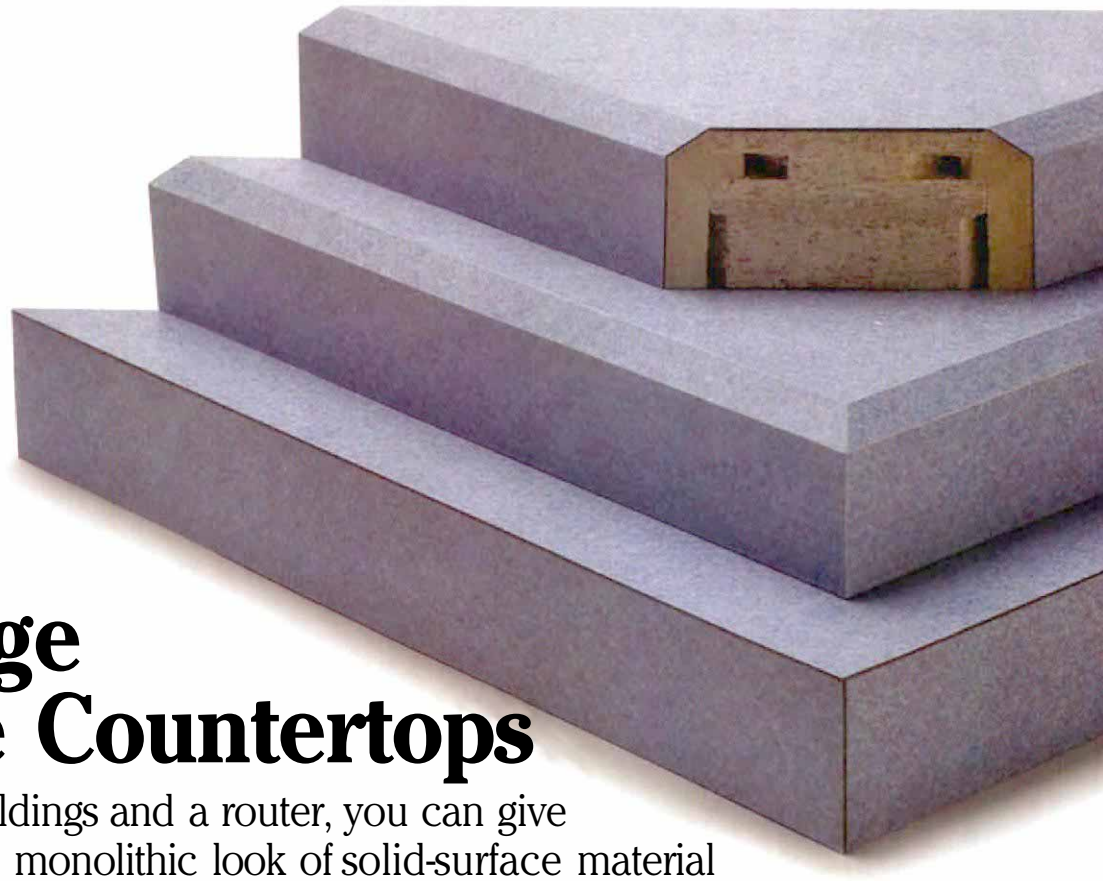


Making Bevel-Edge Laminate Countertops

With store-bought moldings and a router, you can give laminate counters the monolithic look of solid-surface material

by Herrick Kimball

Every trade has its mysteries. People look at the finished product in awe and wonder how the heck the maker was able to do what he did. That was my reaction when I first saw a plastic-laminate countertop with a bevel edge (top photo). As is often the case, though, I found that those mysteries were actually simple techniques that any good carpenter can learn.

Although solid-surface countertops (i.e., Corian) get a lot of attention these days, plastic laminate remains the most popular countertop choice. The material costs much less than solid surface, and it comes in a far wider range of colors and patterns. However, most laminate countertops have a square outside edge that is susceptible to impact damage. And with light colors, the dark-brown underside of the top sheet of laminate shows up as an obvious stripe down the length of each edge. Bevel edges eliminate the dark line and are less likely than square edges to be damaged by impact. What's more, eliminating the line by using a bevel gives the countertop a monolithic, solid-surface appearance.

Bevel-edge moldings can be made with any laminate. You can even mix laminate brands among the counter face, bevel and top. The moldings come either with a flat back (shown here) or with a tongue that fits in a groove routed in the countertop's edge.

You can even change the countertop's look by using a contrasting color of laminate on the bevel.

Bevel edges are actually precisely made moldings (bottom photo) that you buy and then glue to a properly prepared countertop edge. You put them on after constructing the counter underlayment, and gluing and trimming the top sheet of laminate. (If you need more information, see an article I wrote about making countertops in *FHB* #75, pp. 60-65. Or for an in-depth look at the whole topic, read my Taunton Press book *Making Plastic Laminate Countertops.)*

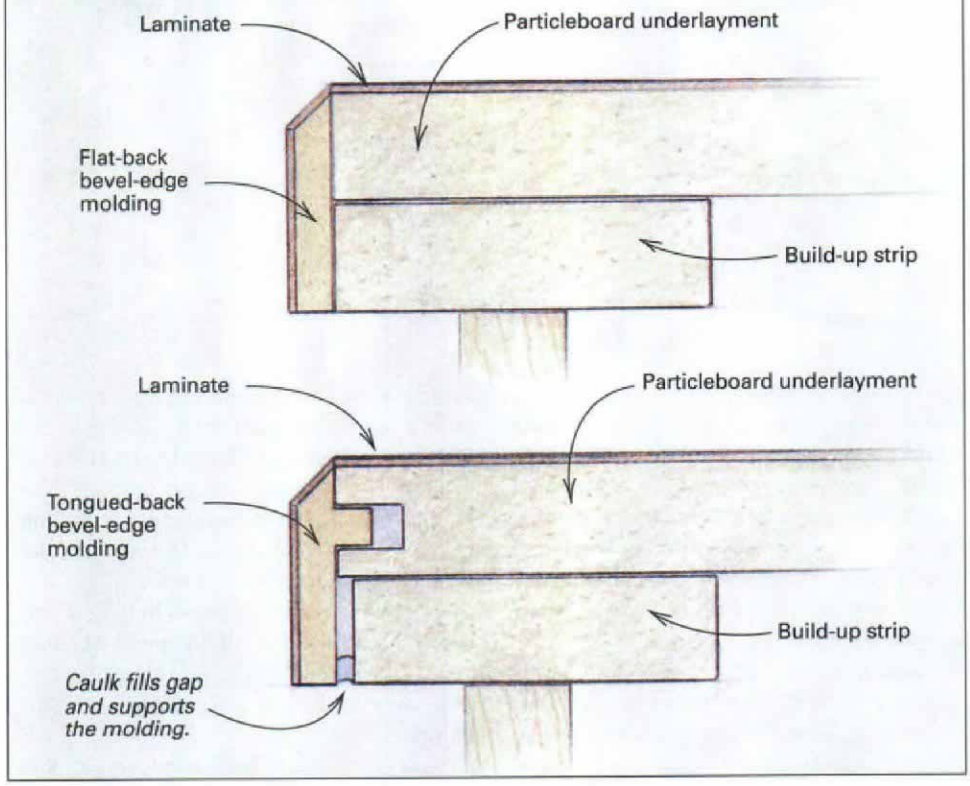
You have to buy the bevel moldings—Bevel-edge moldings are made of plastic laminate glued to medium-density fiberboard (MDF). They come in two styles: flat back and tongued back. The flat-back molding is glued directly to a standard 1½-in. thick countertop underlayment, and the tongued back fits into a groove routed in the edge of a ¾-in. or thicker (up to 1½-in.) underlayment. I'm partial to the tongued back because I think it's stronger and easier to align; the precision work is done beforehand with a router, not during the panic of glue up.

I've found only two companies in the country that make bevel moldings (see sidebar p. 93 for addresses and phone numbers). One company is Wilsonart International, and the other is Kuehn Bevel. Wilsonart's bevel edges are available only with Wilsonart patterns and colors on them, but Kuehn's edges can be had with any variety of laminate. For example, you could have Pionite laminate on the front of the mold-

Photos this page: Scott Phillips

Bevel edges hide the dark edge line typical of laminate countertops. Counter to their appearance, bevel edges are simply store-bought moldings that install with the help of a router and wood glue.

Bevel-edge moldings are either flat back or tongued back. *Flat-back moldings are glued to the squared 1½-in. thick countertop edge. Alignment can be tricky. For tongued-back moldings, a groove routed in the countertop simplifies glue up. Because the tongue strengthens the joint, the molding needs little support at its bottom. In that case, the author runs the underlayment about ⅛ in. past the build-up strip and squares only the ¾-in. thick underlayment.*



ing, Nevamar on the bevel and Formica on the countertop.

Bevel edges are custom made and must be ordered in advance. Twelve-ft. lengths are standard, and the minimum order is one. Lead time for ordering is generally a couple of weeks, although Wilsonart can sometimes deliver in a few days, for a premium. My local lumberyard sells both brands for about the same price, a length of flat back for about $35 and the tongued version for about $45. With both companies, the cost is the same regardless of the patterns you want on the face and bevel. Don't figure your edge needs too closely; you want a little extra material for practicing and for covering any mistakes.

Avoiding stress cracks at inside corners— The first step is assembling a particleboard underlayment, or substrate, with straight and square outside edges. I either trim the edges with a circular saw and a straightedge, or I simply position undamaged factory edges so that they face out. If I am using tongued moldings, they attach more easily to the ¾-in. thick top sheet only rather than to the 1½-in. thick built-up edge. I still build up the edges, but when I glue the ¾-in. strips to the bottom of the substrate, I set them back from the top edge of the deck by about ⅛ in. (drawing above). This leaves a single, thinner thickness of material to true up. I keep any fasteners far enough in so that the slotting bit I'll use later misses them. If you use flat-back moldings, on the other hand, the build-up strip must be flush with the top sheet.

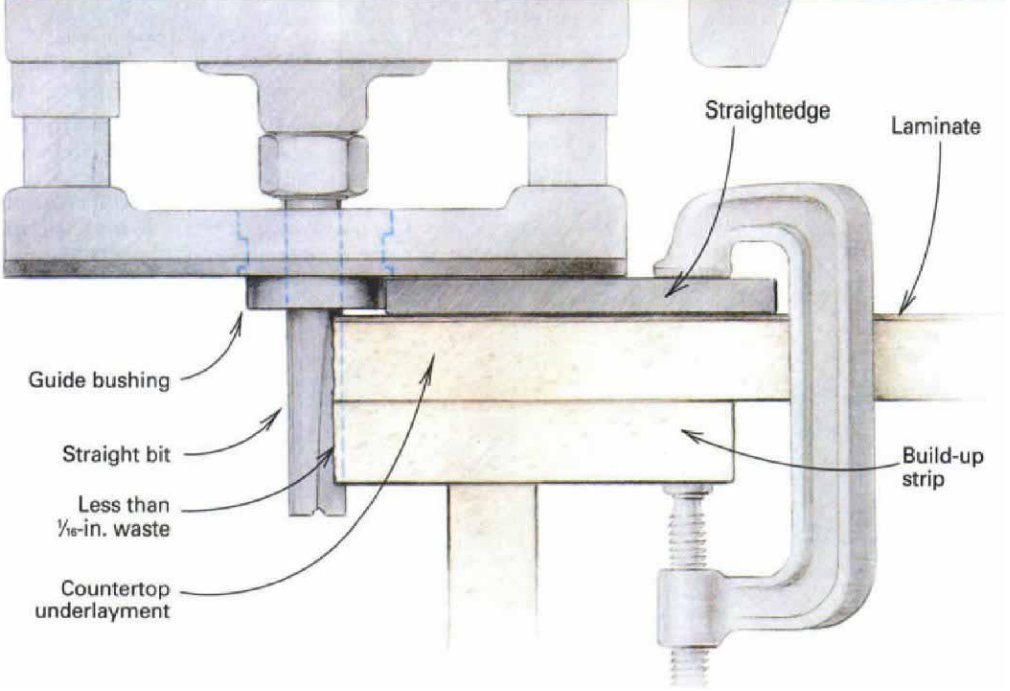
The top laminate sheet can develop stress cracks at square inside corners. To avoid these cracks, mask off a portion of all inside corners on both the laminate top sheet and the underlayment before spreading the contact cement. I use 2-in. masking tape and extend it 6 in. from the comer. Spread the contact cement, and after it dries, peel off the tape. Before placing the laminate, apply yellow wood glue to the masked part of the underlayment. Place the sheet, and clamp this spot until the wood glue dries. Then trim the laminate with a bearing-guided flush-trim bit in a router and file the corner square. The yellow glue makes a more rigid bond and doesn't allow the movement between the laminate and the underlayment that can lead to stress cracking.

Truing the edges with a router— By preparing the countertop as I've just described, you'll end up with edges that are overall straight and true. But they won't be perfect—yet—because the edges of the particleboard underlayment are slightly pitted. The bearing-guided trim bit will have mirrored these slight pits on the laminate edge. For the bevel molding to fit tightly to the top laminate, you need to take one more step to get a perfectly smooth, square edge.

Wilsonart sells a jointing router and base for this job. It removes slightly less than 1/16 in. of material, cutting a smooth edge that's square to the top surface. It costs $397. That's one way.

Another way to square and straighten the edges is to trim them with a router and straight bit guided along a straightedge (top drawing, p. 90). Many professional fabricators use a manufactured straightedge, but you can do the job with a straight length of MDF. Trim the edge with a ½-in. shank router bit with a guide bearing that follows the straightedge. Or you could set the whole arrangement up so that the straightedge guides the router base (no bearing would then be necessary). Most professional fabricators use a ½-in. straight bit and a guide bushing in the

Drawings: Dan Thornton



Flat-back moldings must glue to a square, smooth surface. *The author trues the countertop edge with a router and straightedge, removing less than 1/16 in. of material. He uses a sharp chisel to trim the inside corners where the router can't reach.*

router base. Whatever method you use, remove the minimum amount of material that will yield a perfect edge.

Any truing method that uses a router will leave a small untrimmed area at the inside corners because the round bit can't get all the way into a square corner. I trim this area with a sharp chisel, and I take care not to chip the laminate when I'm doing the trimming.

Router-truing the counter edges will work with either type of molding and is a necessity with the flat-back variety. However, there is another simpler way to prepare the edges for tongued-back moldings.

Truing edges by hand-sanding—instead of using a router, you can joint a ¾-in. thick edge for tongued moldings with sandpaper. However, you don't want to use a regular sanding block for this operation because it would prove difficult, if not impossible, to hold square, and that would be disastrous.

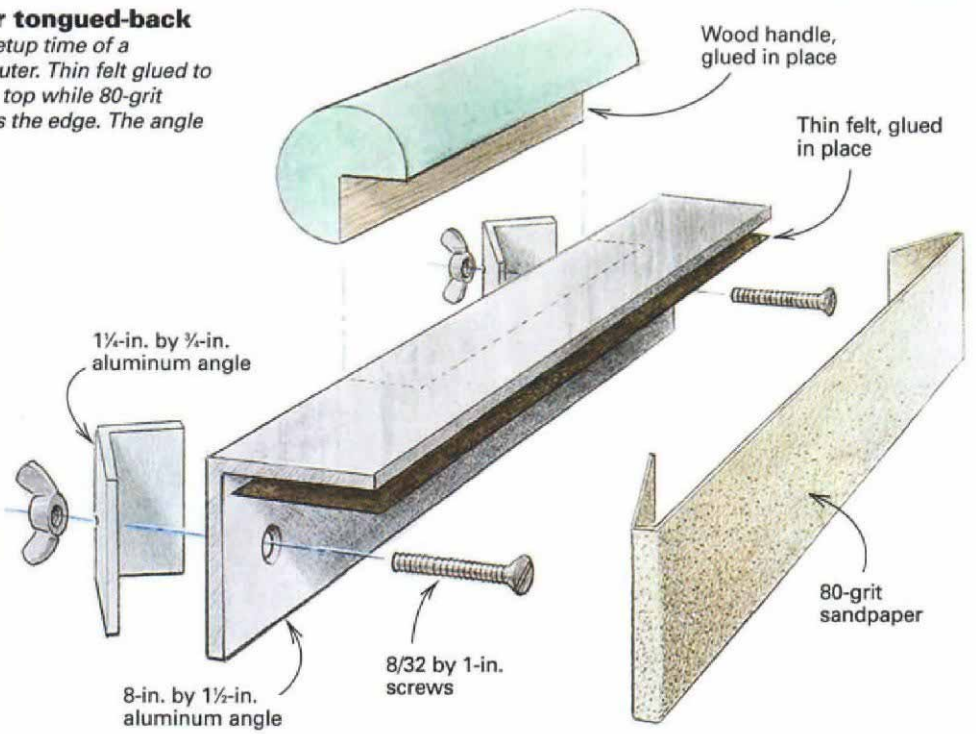
I use a jointing tool as shown in the drawing below. I invented this humble piece of equipment, and although the guys who own expensive tools may scoff at it, let me tell you, it works.

To joint the edges with the hand sander, make long, smooth, even-pressure swipes (photo below). Your objective is not to remove a lot of material; it is to smooth away the minor roughness that remains after trimming the laminate. Watch closely (sight down the length with a good light), and you will see it smooth up nicely. Watch out for the laminate's top edge—it will become sharp enough to slice your skin.

Grooving the edge for tongued moldings—I've grooved several tops for bevel edges using my Porter-Cable 690 router and an off-the-shelf ¼-in. slotting bit. They turned out fine, but I thought that a bigger router base would lend more stability to this precise operation.

Smoothing countertop edges for tongued-back moldings. *This simple tool avoids the setup time of a straightedge and makes less dust than a router. Thin felt glued to one inside surface glides over the laminate top while 80-grit sandpaper on the adjacent surface smooths the edge. The angle must have square, not rolled, edges.*

The build-up strip is ⅛ in. shy of the underlayment edge. This way, the author has to smooth the slight roughness left after trimming the laminate from the ¾-in. thick underlayment, rather than from the full ½-in. thickness of the countertop.



So I bought the Wilsonart ¼-in. dado setup for my router. It consists of an oversize router base and a ¼-in. slotting bit (top photo). The base is two 6-in. by 14-in. pieces of ¼-in. thick plastic screwed together. It works great, but I can't help thinking that a ½-in. thick piece of good-quality generic plastic would do just as well and cost a whole lot less than the $125 that I paid.

Wilsonart's slotting bit impresses me, though. It has a guide bearing above and below the cutter, so it's steady, and it stands up well to the punishment that particleboard dishes out. The slotting bit is, to my mind, well worth its $45 price tag to any pro who will be fabricating more than one bevel-edge top.

More important than the size of the base is how easily and precisely the depth of cut can be set on the router. The Porter-Cable 690 I use allows fine adjustments. Setting the bit at the right depth is vital; it determines the height of the groove along the edge, which in turn determines whether the molding will be flush with the top. The margin of error is small.

To arrive at the perfect depth setting, laminate some 1-ft. square practice countertops. Groove one edge at a time, and test-fit the bevel molding, adjusting as necessary, until the fit is good. That happens when the molding dry-fits in the slot with its point flush with the top of the laminate. Check the joint by running your finger over it. A fingertip can sense a smaller projection than the eye can see.

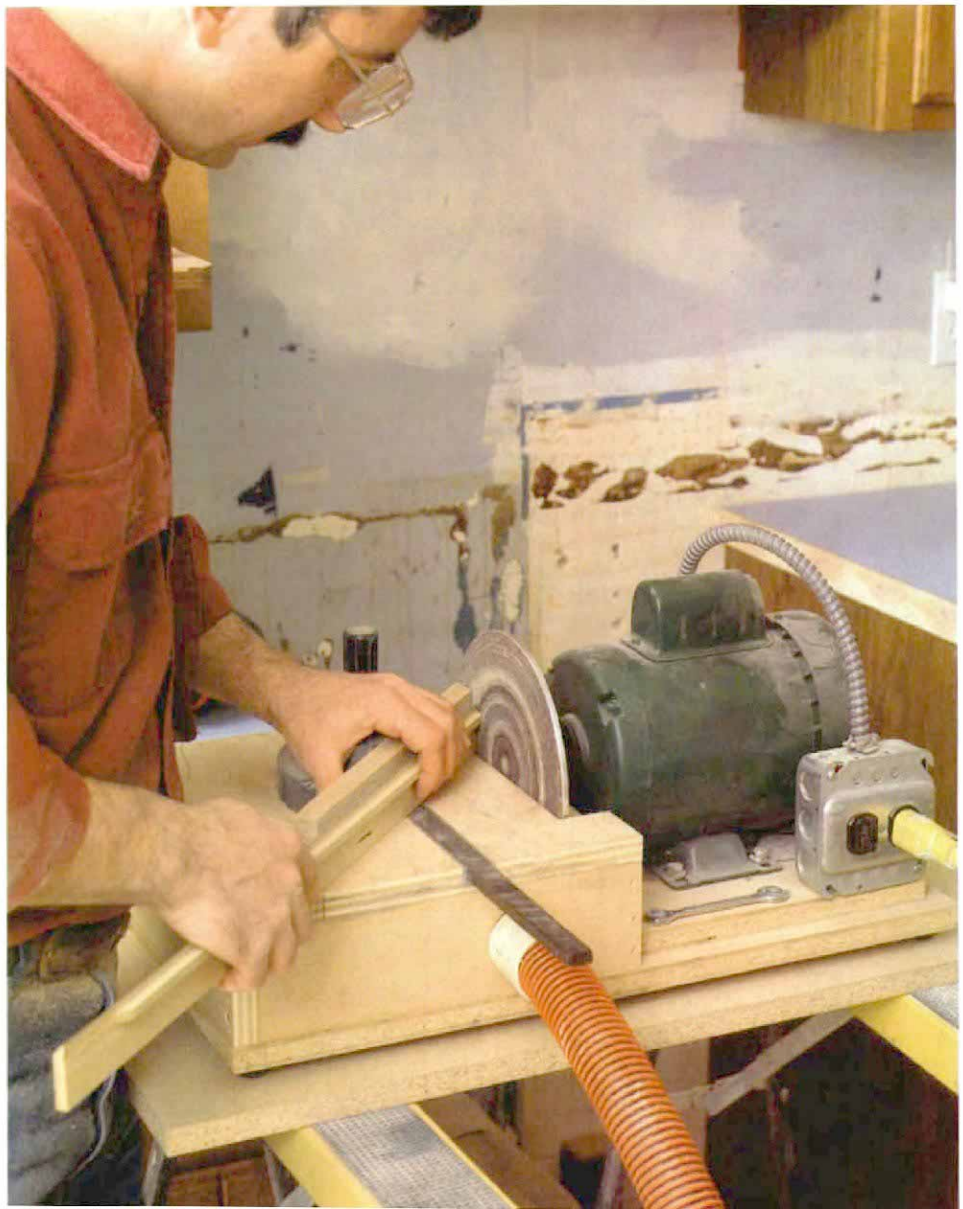
Cutting that groove is intimidating. The good news is that if your cut ends up being less than praiseworthy, you can tweak the router depth and make another pass, and the edge will still go on fine. A little bit of play in the groove is not perfect, but it's not serious. Take up the slack by using a little extra glue and by carefully aligning the edge when clamping it.

The question in everyone's mind when gluing a 1½-in. wide edge to a ¾-in. wide edge is whether the joint will be strong. The answer is yes, it makes a remarkably sturdy edge. It can be left that way, but I offset the build-up back no more than ⅛ in., and I caulk the gap to gain a little extra support at the bottom edge.

Fine-tune the molding with a disk sander— I use a chopsaw with a sharp 10-in., 80-tooth carbide blade to cut the edge moldings. I don't use the last 3 in. or 4 in. of the molding because it may not be precisely machined. I fine-tune these cuts using a stationary disk sander that has a miter attachment.

Even a cheap stationary disk sander with a miter attachment will prove useful. I made my own bevel-edge disk sander (bottom photo). Not coincidentally, it looks similar to one made by Wilsonart. But it only cost me $165 for materials, not the $937 the Wilsonart model costs,

A ¼-in. slotting bit grooves the top for tongued-back moldings. Careful location of the groove ensures that the top of the bevel molding will meet the top laminate perfectly.



Using a homemade sander to trim bevel moldings to a perfect fit. The author miters the moldings slightly long, using a chopsaw. To reduce the risk of chipping the delicate edge, he finishes the cuts with a sander.

A small bead of glue on both sides of the tongue holds the molding in place. Too much glue can keep the molding from seating in the groove, resulting in an open joint.

A router can't slot a built-in-place countertop all the way to the wall. Trim as much of the tongue from the molding as the router can't slot, and glue the end in place.

and most of that was for the ½-hp motor. I use the adjustable miter gauge from my table saw, and although there is a bit more play in the parts than with the Wilsonart sander, it works slick enough for me.

Use tape to clamp the moldings—When handling moldings, always keep in mind that the top edge is extremely thin, fragile and razor sharp. Use caution.

Cut and dry-fit the molding pieces to check their fit before gluing them. Tongued moldings should fit snugly in the groove. Tap them in with a rubber hammer. They will come out okay if you carefully pry them from the bottom.

When you are putting a tongued molding on a built-in-place counter, your router base won't let you groove all the way to the wall. Cut the tongue from the last few inches of molding, (photo top left) and flat-glue it.

Both types of molding fasten to the top with yellow glue and are clamped with filamented strapping tape. Use enough glue to get a bit of squeeze out, but not so much that it keeps the pieces from mating tightly. For flat-back moldings, spread an even layer of adhesive on the backside. I use a foam brush. For tongued-back moldings, use a glue bottle with a spout to apply a moderate bead to the top inside corner of the tongue and another bead on the inside bottom corner (photo top right). If you a put a bit more glue on the bottom, it will theoretically cause the particleboard to swell and make the top edge fit even tighter. I don't know for sure if it does that, but it sounds plausible. Glue molding pieces to each other at mitered corners.

Use strips of filament tape every few inches to clamp the moldings in place until the glue sets (photo bottom left). Tape any outside miters to-

A light sanding completes the job. The edge of the molding should be flush, or a bit high. If high, sand flush with 220-grit paper. Don't sand into the back of the laminate.

Strapping tape clamps the molding to the top until the glue dries. The author tapes the edge every few inches to ensure a tight fit. He also glues and tapes wherever the moldings meet with an outside miter.

Avoiding a grimy valley where bevel edges meet appliances

The author runs the top laminate past the countertop end. Then he cuts the bevel molding long and carves out its back so that only the laminate face and bevel extend past the countertop. He installs the molding and laminates the countertop end. Finally, he trims the bevel molding and laminate top flush.

gather. Moldings fitted into a properly placed groove will need relatively few tape clamps. If the groove is sloppy or if you are installing flat-back molding, you'll be using more tape and carefully lining up the top edge as you work your way along. Position the top edge flush or a frog's hair high.

The glue will dry enough for you to remove the tape in about 15 minutes. With the tape gone, you can scrape off any glue squeeze out; it should be rubbery and come up nicely. Remove any remaining residue with a dampened rag.

Finish by leveling the top edge with a piece of 220-grit or finer sandpaper, if needed (photo bottom right, facing page). Don't oversand, or the brown backer will show, and you'll get discouraged. Light-colored laminates are the ultimate bevel-edge challenge because any alignment mistake will show up clearly as a brown line. It will look like the molding cracked away from the edge, but it's a faux crack, and you can't fill it. I know of no way to mitigate the problem. But a dark laminate, or even a dark color on the bevel, will minimize such minor flaws.

Matching flat ends to bevel-edge fronts— You don't want a bevel edge on the end of a countertop that abuts a freestanding stove. The bevel would create a crud-catching valley. Unfortunately, the mechanics of getting a good joint between a flat end and a bevel edge are not obvious, or simple.

If you laminate the countertop end before laminating the top, standard fabrication procedure for square-edge tops, the end laminate won't cover the bevel molding's end grain. And if you laminate the end after affixing the bevel molding, you'll see the brown back of the end piece of laminate on its top and front.

The only solution that I've found is using double-sided tape to attach a double thickness of laminate temporarily to the end of the underlayment before gluing on the top laminate. Then trim the top sheet using the double thickness on the end as a guide. When you remove the end pieces, you are left with a close but slightly big overhang. Fit the bevel edge, leave it ¼ in. long at that end, and mark the end of the underlayment on the bevel edge's back. Remove the bevel edge, and with a utility knife, carefully pare away the MDF back of the molding that extends beyond the underlayment, leaving the laminate face (photos above). Glue the molding in place. Cut the end piece of laminate to fit under the top laminate sheet and behind the front of the bevel edge, and glue it in place. Finally, trim away the overhanging laminate with a laminate trimmer or a laminate file. The flat-to-bevel joint is a bother, but it looks good in the end.

Putting on bevel edges is not technically difficult, but it does require a precise approach. I recommend that anyone who wants to fabricate bevel-edge tops first get a little experience. Buy a length of white molding (the brown lines of imperfect joints show up best against white), some matching laminate and some particleboard. Then practice putting edges on sample countertops. Master that, and you'll be prepared to go forth into the world and create your own awesome bevel-edge countertops. □

Herrick Kimball is a kitchen contractor in Moravia, New York. Photos by Kevin Ireton, except where noted.

Sources of supply

Plastic-laminate bevel edges are available from Wilsonart and Kuehn. Both will send samples of their different moldings. There are other edge styles besides those discussed here, as well as ones made of wood and solid-surface materials. You can also order premade backsplashes with bevel edges on the top. Neither company sells directly to the public but will refer you to a supplier in your area.—*H. K.*

Kuehn Bevel
111 Canfield Ave., A-17
Randolph, NJ 07869
(800) 862-3835

Wilsonart International
2400 Wilson Place
Temple, TX 76504
(800) 433 3222