Making Plastic-Laminate Countertops

Cutting shears and spray adhesive are among the tricks that make the job easier

by Herrick Kimball

As a carpenter's helper I learned the basics of working with plastic laminate 12 years ago. Since then I've fabricated more countertops than I can remember. Over the years I've witnessed a lot of mistakes and have made a few of my own. But there was a lesson in every error, and I've learned my lessons well. The tools and the techniques I'll describe in this article make it easier and less frustrating to fabricate professional-quality countertops.

It's not all Formica—Among the general public, all plastic laminate is commonly referred to by the brand name Formica. In fact, many customers don't understand what I'm talking about unless I use the phrase "Formica countertop." The confusion is understandable considering that the first plastic laminate was, indeed, Formica, but now there are other manufacturers.

Although most of my tops are done using Wilsonart laminate, because it happens to be the most readily available brand in my area, there is no difference between working with one brand or another.

Plastic laminate is made by bonding multiple layers of resin-impregnated kraft paper under heat and high pressure. The sandwich is topped off with a colorful layer of melamine.

Several manufacturers also produce a solid-color, or solid-core, laminate. This product is uniformly colored throughout its composition, so the dark band that shows up on the edge seams of standard laminate is eliminated. Another solid-core selling point is its ability to hide scratches that would show up on standard laminate.

I seldom use solid-core laminate, though. It's more expensive, comes in fewer styles and, frankly, my customers don't find the dark seam line unsightly; they expect it on a laminate counter. If you use solid-core laminate, you should know that it's worked like regular laminate, but it's more brittle. Use extra care when handling it, especially while cutting and routing.

Aside from the myriad choices of colors and patterns available, there are also different types of laminate, such as fire rated and chemical resistant. But if you go to your local lumberyard and order a sheet of, say, Erin Glenn #4627-8, the salespeople are going to assume you want the standard, general-purpose laminate, which is what I use on virtually every residential and light-commercial countertop I make.

Sheets of plastic laminate come in nominal widths of 30 in., 36 in., 48 in. and 60 in. Nominal lengths are 72 in., 96 in., 120 in. and 144 in. The actual sheets measure 1 in. larger in width and length. Some manufacturers also offer 1¾-in. by 12-ft. strips of laminate for edgebanding.

Low-tech, but effective. **To cut laminate with a scoring tool, draw the tool across the laminate several times. Then, holding down one side, lift up on the other, and the laminate will snap cleanly along the score.**

Shear force. **Laminate shears, made by Klenk, have three blades—one above, two below—that remove a ⅛-in. strip of laminate. Cutting laminate with shears is faster and more convenient than cutting with a scoring tool.**

Cutting strips with a slitter. **Made by Virutex, this laminate slitter can either be pushed or pulled along a sheet. Its adjustable guide allows you to cut strips anywhere from -in, to 3 -in. wide.**

Don't scrimp when estimating—On a small, straight-run countertop, figuring what size laminate you need is simple. But when you get into larger L- or U-shaped tops requiring one or more seams, estimating can be a challenge. Unfortunately, I don't know an easy way of doing this short of sketching out some laminate sizes and figuring each component of the countertop onto the sketched piece of laminate. There are things to keep in mind, though, when you do this.

First of all, even the best surface seams are unsightly, so avoid them whenever possible. If I had a 25-in. wide, L-shaped counter with an 11-ft. leg on one end and a 5-ft, leg on the other, I'd order a 5-ft, by 12-ft, sheet of laminate to do the job. That means I'll have some waste, but it's worth it to avoid a seam.

When a surface seam can't be avoided, I try to position the joint through a sink or a cooktop where it will be visible for only a couple inches in the front and the back. Never seam through a peninsula or other high-visibility spot unless it can't be helped. Keep in mind also that any butt joints in the substrate should be placed as far away as possible from laminate seams.

When estimating laminate, allow at least ½ in. extra all the way around for finish trimming. Also, don't figure too close. If a 5-ft, by 8-ft, sheet will give you more breathing room than a 4-ft, by 8-ft, sheet when cutting out several pieces, get the extra, especially if you're new to the craft.

Tools for cutting and trimming—For years I roughed out all my laminate pieces with an inexpensive, carbide-tipped scoring tool. Using a straightedge to guide the cut, you draw the scoring tool over the top of the laminate (photo top left). This tool actually scrapes a groove through the surface. After a couple passes, hold the sheet down on one side of the line, lift up on the other, and the laminate will snap cleanly along the score. On long cute, you start the snap at one end and work down the line.

Score-and-snap is an effective cutting technique, but it does have a couple drawbacks. It requires a large, smooth surface to lay the sheet on when cutting, and it's time-consuming.

Fortunately, I've discovered two tools that make cutting laminate sheets more of a snap than

score-and-snap. The first is a pair of hand-held laminate shears (middle photo, facing page) (Klenk Industries, Inc., 20 Germay Dr., Wilmington, Del. 19804; 800-327-5619). Similar in appearance to aviator tin snips, these shears have three blades, and together they remove a ⅛-in. strip of laminate. If you're going to make more than a couple of tops, spring for a pair of laminate shears. You'll never regret it.

But using shears can be tiring and time-consuming when you're cutting the long, thin strips needed for edging countertops and backsplashes. For these cuts, a table saw does a nice job-use a 60-tooth, carbide-tipped blade, and make sure the sheet doesn't slip under the fence. A laminate slitter will do the same job without the noise, the dust and the helper that the table saw requires. My slitter (made by Virutex, dist. by Rudolf Bass, Inc., 45 Halladay St., Jersey City, N. J. 07304; 201-433-3800) is hand-held and has two cutting wheels that shear a perfectly smooth line. The slitter is operated by pushing or pulling it along the sheet (bottom photo, facing page), and an adjustable guide allows cuts from ¼ in. to 3¼ in. wide.

To round off this review of cutting tools, I should note that Porter-Cable makes a hand-held motorized laminate slitter that employs a ¼-in. carbide-tipped router bit to cut strips up to 4¼ in. wide. I have one of these, and it does a nice job. But I find the tool awkward to use, so I have relegated it to the obsolete pile along with my carbide-tipped scoring tool.

In addition to cutting laminate sheets to rough size, you also need to trim laminate after it's been glued to the substrate. Basically, trimming tools amount to a router and a bit, but there are choices here, too.

Any router can be used to trim laminate, but a 3-hp plunge router would be overkill. If you're going to deal with much plastic, it behooves you to get a small, lightweight laminate router (or trimmer). I like the Porter-Cable #7310 standard trimmer. At 5.6 amps, it's a powerful unit that I can hold in one hand and maneuver easily. It also has a rectangular base that comes in handy when cutting seams (more on this later).

Laminate-trimming router bits are made to do one of two things: trim excess laminate flush and square to the surface it overhangs, or flush with a bevel at the top. Flush-and-bevel cutters come separately or as a combination bit. Laminate bits have carbide cutters and are guided by either a ball-bearing collar or a self-pilot bit.

When new, ball-bearing pilots work nicely. But after some hard use they can be a problem. I've had bearings stop rolling after being gummed up with contact cement. If the bearing seizes, it will spin with the cutter and burn a mark on the laminate. I'm ashamed to admit that I've burned more than one edge. And in every instance, I knew the bearing was old and not working smoothly, but I used it anyway.

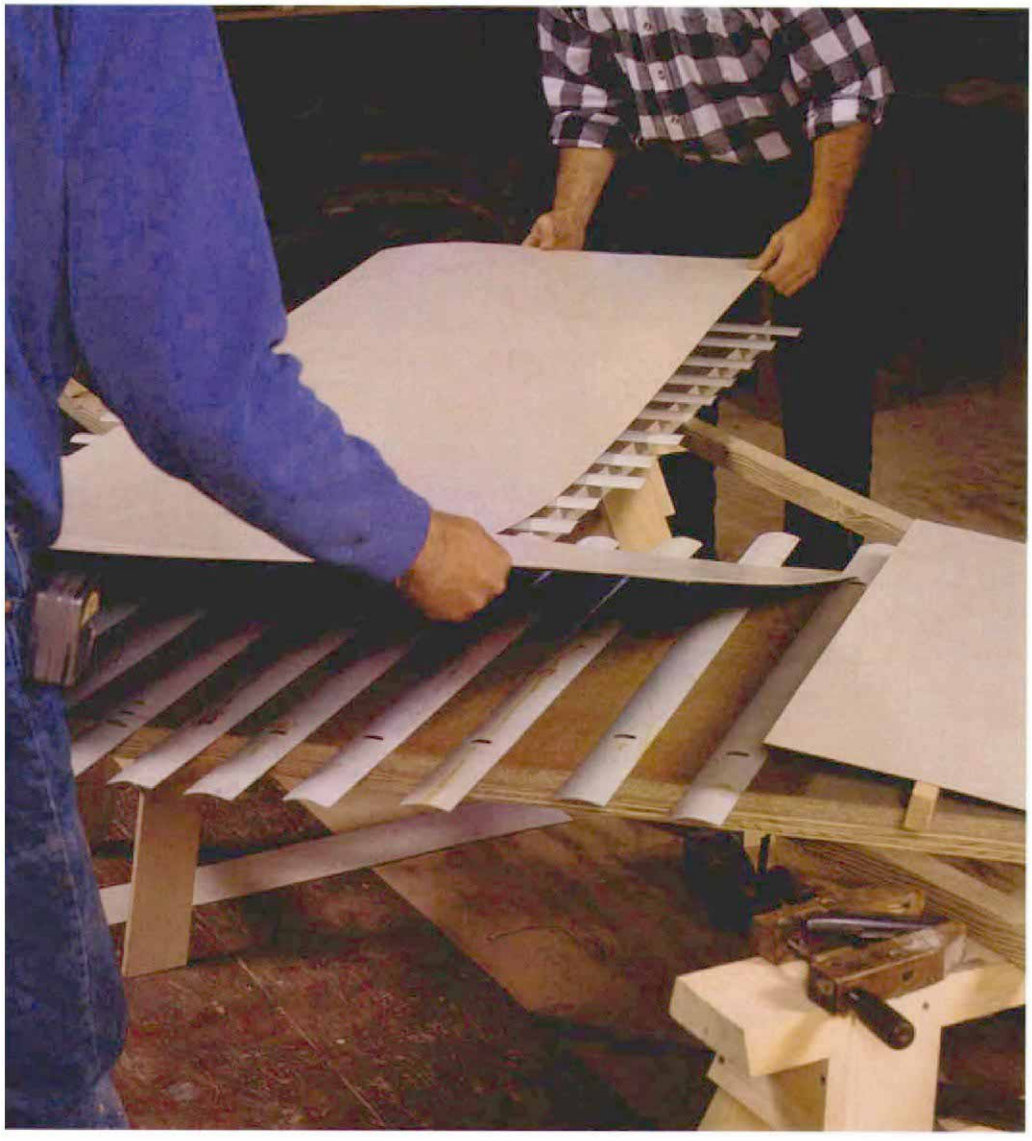
Bearing troubles led me to try a self-pilot bit. These cutters are milled out of a ¼-in. shank of solid carbide, and the pilot is an integral part of the bit; it spins with the cutter and rubs along the guide surface. You avoid burning by lubricating any laminate guide surfaces with a thin coating

Beefing up the substrate. **With its flat, uniform surface, high-density particleboard works best as a substrate for laminate. But gluing and stapling strips of plywood under the edges (and the seams) of the particleboard makes a stronger countertop.**

Cutting a seam. **Although you should avoid seams in laminate whenever possible, sometimes you can't. Mirror-cutting is the way to get the best possible fit between two pieces. To do it, butt the pieces together temporarily and make a router cut through the middle of the seam.**

Seize the spray. **Although slightly more expensive than brushable-grade contact cement, spray cans offer advantages that make them worth the cost. Spraying means easier, faster application, quicker drying and less fumes.**

Yes, those are Venetian-blind slats. **As the name implies, contact cement sticks on contact, so you don't want two mating surfaces to touch until they're properly positioned. Venetian-blind slats work well to keep the laminate off the substrate until you're ready to start gluing.**



of petroleum jelly before trimming. Because self-pilot bits have less bulk than the bearing pilots, they work particularly well in small trimmers. I tried a self pilot two years ago and haven't used a bearing guide or burned an edge since.

It's also possible to trim the laminate flush with a ¼-in. straight-cutting router bit if you have an auxiliary guide attachment for your router. Such attachments are usually standard issue with laminate trimmers. They work pretty well, but I don't use mine because I can chuck in a self pilot and have half my trimming done in the time it takes to set up and adjust the guide attachment.

The 48-hour rule—With kraft paper as the raw material, plastic laminate is actually a wood product. In fact, a sheet of laminate is very similar to wood in that it has a grain direction, and it expands and contracts according to its moisture content.

Standards for dimensional stability of plastic laminate are set by the National Electrical Manufacturer's Association (NEMA), and they allow for 0.5% dimensional change with the grain and 0.9% across the grain. On a humidity range from 0% to 100%, that means a 5-ft, by 10-ft, sheet of laminate may vary in size by roughly ½ in. in each direction.

Dimensional instability will cause problems if the laminate and the substrate are not allowed to acclimate in the same environment where they'll be assembled. Forty-eight hours, with free air flow around all sides of the pieces, is the recommended conditioning period. An air temperature of 75° F with a relative humidity of 45% is ideal for conditioning, but this is not nearly as critical as the 48-hour rule.

When properly acclimated laminate and substrate are glued together, the two will expand and contract together without incident. What happens if the components aren't properly conditioned? Nothing, if you're lucky. I've found you can bend the 48-hour rule and get away with it, but bending too far makes unhappy faces all around. One common result of insufficient conditioning is that perfectly fitted surface seams will soon separate, and in some cases, edge seams will come apart.

. I once had a job that involved redoing a vanity top in the men's executive washroom of a nearby industrial complex. The existing top had two drop-in sink bowls, and water had leaked under the rims, caused the particleboard to swell and started to crack the laminate. I decided that I could do a good job for a good price by removing the sinks, chipping down the swelled spots, attaching a new layer of ½-in. particleboard to the top and the edges and gluing down new laminate. Everything would be done on site without removing the original top.

With the rule in mind, I delivered my materials to the job 48 hours ahead of time, but my plans were thwarted when the clients told me they didn't want the stuff parked in their washroom for two days. I was assured that temperature and humidity were the same throughout the building, and the downstairs maintenance shop would be as good as anywhere else. I had a bad feeling about it, but I left the pieces downstairs.

When I made the top, everything went well; the job was perfect. An hour after I was done, the edges started to separate. I felt sick and wanted to hide, but instead I grabbed my clamps and torqued down on the front edge. I managed to salvage the job, but it isn't perfect anymore. The top pulled back from the edge and is still slightly gapped. The backsplash did the same thing; gone are my once-crisp edge lines. Live and learn? I hope so.

Preparing the substrate—Many of the old site-built countertops I tear out have a ¾-in. plywood underlayment, and there are still a few people around who think plywood makes a better substrate for laminate. But this is one instance where cheaper is actually better. I always glue my laminate to high-density particleboard. Sometimes called core board, this material is inexpensive and well suited for laminate work. Particleboard has a very uniform, flat surface and bonds to the laminate much better than plywood, which has an uneven, wavy grain pattern.

High-density particleboard comes in ½-in. and ¾-in. thicknesses and is sized for laminate work in 25-in. and 30-in. widths and in 8-ft, 10-ft, and 12-ft, lengths. It's also available in 4x8 sheets.

When possible, I take measurements on site, make complete countertops in my shop and then install the finished product. Not only is it easier and more convenient this way, but it also makes for less mess in the customer's home (which is no small matter). Sometimes, factors like size and shape or placement of a counter layout dictate that I make the top on site. If this is the case, and especially if the counter is particularly large, I can often fabricate the substrate in modular sections in my shop, then take them to the job site and finish the assembly.

My method of assembling the countertop underlayment is not the only way, but it's the best way I've found to make a durable substrate quickly and precisely. I use the double-layer approach: ¾-in., high-density particleboard on top and strips of ¾-in. underlayment plywood on the bottom (top photo, p. 61). I use plywood on the bottom because it holds fasteners better, it makes for considerably stronger overhangs and seam cleats, and if water spills over the front edge of the finished counter, plywood won't soak it up and swell like particleboard does—a common problem in front of some kitchen sinks.

I rough out my particleboard top sheets approximately ½-in. oversize each way. After fastening the bottom strips, I'll cut the top to exact size. Because my standard countertops have a finished depth of 25 in. (which gives a 1-in, overhang over 24-in, deep cabinets), I buy 30-in, wide particleboard, rip off a 4-in, strip for the backsplash and have 26 in. left for the rough top.

I cut the plywood bottom strips 3-in, to 4-in, wide and fasten them around the perimeter of the underside with a liberal coating of yellow glue and 1¼-in. long, narrow crown staples in my pneumatic stapler. If you don't own a pneumatic stapler, use 1¼-in. coarse-thread drywall or particleboard screws. Using a Phillips bit in an electric drill, the screws will pull right through and below the surface of the plywood without a pilot hole or countersink. Whatever fastener you use, keep in mind that the rough top must soon be trimmed to exact size, and fasteners should be kept out of the anticipated cut line.

Trimming the edges flush. **A laminate trimmer is just a router that's been downsized to make it more maneuverable. Here, the edge strip on the front of the countertop is being trimmed flush with the top of the substrate.**

It's not a ball-bearing bit. **A ball-bearing bit can can seize and burn the laminate. That's why the author prefers a self-pilot bit. To avoid burning, he lubricates the guide surfaces with petroleum jelly before routing.**

Flush-trimming bits don't trim flush. **You have to file the laminate top flush by holding the file almost flat to the front edge and stroking downward. You know you're done when the excess glue at the seam shaves off, revealing a crisp, clean edge.**

When fastening the plywood strips, I'm not concerned if they don't align exactly with the particleboard edges because I'll cut them flush later. It is important, though, that adjoining pieces fit tightly together. If there is a gap between abutting plywood pieces, the pilot on my laminate-trimmer bit will ride into the void and mess up the finished edge. When butting two pieces of particleboard together, I'll fasten a cleat underneath that spans the seam a minimum of 12 in. on each side. Peninsulas and islands often have eating areas that cantilever 12-in, to 16-in., and I always beef up these overhangs with a solid piece of plywood extended at least 12 in. back over the top of the cabinets. If a heavy sink is to be installed, I'll be sure to get extra plywood support there, too.

When the rough top is assembled, I cut it to finish size with a carbide-tipped blade in my circular saw and use a clamped straightedge as a guide. For long stretches, I have a 6-in, by 12-ft, length of particleboard that I use for a guide. If I can't get a regular clamp on this type of straightedge, I fasten it temporarily with screws.

When cutting underlayment with the saw, watch out for screws used in assembly. Occasional staples aren't much of a problem, but hardened drywall screws will easily ruin your sawblade. Back the screws out if they're in your cut line.

It's essential that underlayment edges be cut perfectly square. If an edge is beveled in at the bottom, the guide bearing on the laminate bit will cut too close and shave the face of the laminate edge strip.

I cut the front edge and the back edge of the substrate first. Then before I cut the piece to length, I clamp the backsplash and the countertop together, edge-to-edge, and cut both at the same time.

I prefer to have sinks and cooktops in my shop and make all cutouts in the underlayment before I glue on the laminate. After the opening is cut, I'll drop the fixture in to check the fit. There is little hope for salvaging a botched cutout if the laminate is in place. This became crystal clear to me after absentmindedly marking out and square-cutting an opening that should have had radiused corners.

After the underlayment is trimmed to size, and just before gluing, I sweep the surface off with my hands. Fingertips will detect residual grit and surface imperfections the eye can't readily see. Surface imperfections need to be filled before gluing the laminate. Plastic auto-body filler dries quickly and works well. Instead of sandpaper, I use a block plane to knock off gobs of filler, dried glue or uneven seam butts. I also double-check the edges and make a light cleanup pass or two there, if necessary.

Mirror-cutting a seam—If there is a surface seam to contend with, now is the time to match it up. Unfortunately, it's impossible to achieve an invisible seam in plastic laminate, but if done

properly, you can make a very tight seam that's not obvious.

The easiest way to make a tight seam is to mirror-cut the two abutting pieces of laminate with a router and a straightedge. To do this, I position laminate sheets on the substrate right where they will be glued down, with the two edges butted. Then I clamp the pieces so that they don't shift around and slide a scrap strip of laminate under the seam (bottom photo, p. 61).

Next I clamp a straightedge guide to one side so that it allows the router bit to cut down the center of the seam. With a ⅛-in. straight-cutting bit in my router, I set the depth to cut completely through the top layer of plastic and into but not through the scrap. I feed the router down the edge in one smooth, even stroke. Before unclamping the guide, I slide a square against it and pencil two index marks across the cut line. I unclamp the pieces of laminate, align the index marks, and I've got a no-sweat, perfect seam.

Before gluing, I scrape or file any burrs off the backside of the seam cuts, but I don't take any material off the face of the seam. If the edges don't meet as well as I'd like, I reset the straightedge and try again, provided, of course, that I can do so without making my pieces too short.

What a difference a spray makes—Contact cement is the adhesive used to glue down plastic laminate. Until recently, small-time fabricators like myself have had to use brushable-grade cement that comes in quart or gallon cans. If you've ever glued a top using this stuff, you know all too well how noxious the fumes are. And if you've brushed, rolled or squeegeed on as many gallons as I have, you've no doubt wished there was an easier, faster, cleaner way to get the job done. Well, there is.

Without a doubt, the best recommendation I can give on the subject of contact cement is this: spray it on (top photo, p. 62). Production fabricators have used spray equipment for years to glue their tops, but only in the past couple years have the advantages of spray been available to everyone in the form of aerosol cans.

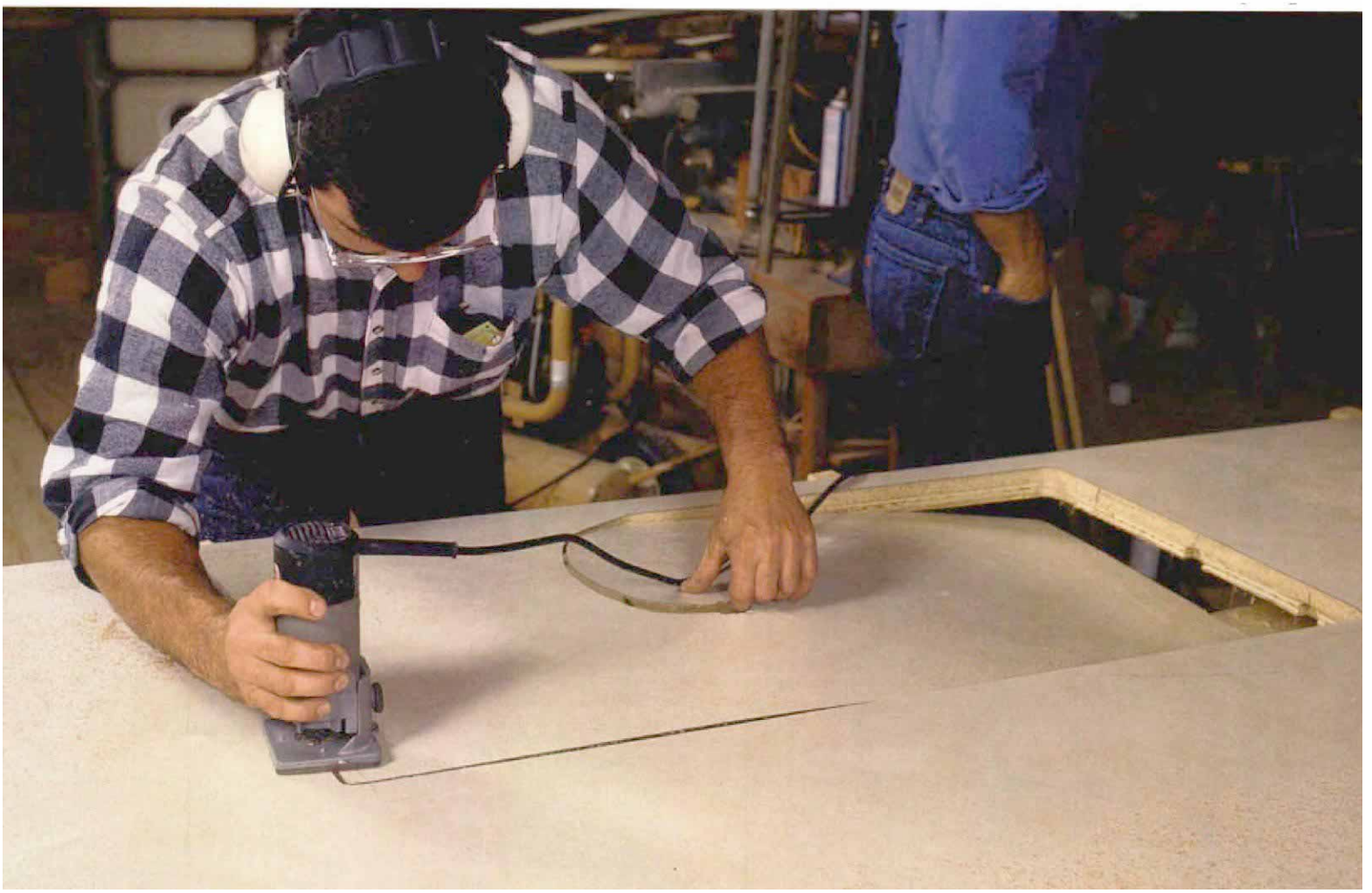
I use Wilsonart's Lockweld 1055, which I get from my laminate supplier. It comes in 17-oz. spray cans, and by my calculations, one container at 100% coverage will glue approximately 5 ft. of standard-depth counter, edge and backsplash. Spray adhesive costs slightly more than brushable grade, but it's worth it. Compared to prespray days, I've found my application time is less than half, drying time is quicker, fumes are considerably less, and except for some minor overspray, there is no mess involved. The spray is flammable, however, and while there are less fumes, they're still harmful, so be sure to have plenty of cross-ventilation when spraying.

To use contact cement, spray an even coating on both mating surfaces, allow the adhesive to dry, then bring the pieces together. When the glued surfaces touch, they stick. When they stick, they're stuck; there is no longer any chance for adjustment. A more permanent bond is made by applying pressure with a rubber laminate roller, or pounding a cloth-covered block of wood over the surface.

Laminate meets substrate—Edge strips go on first, and I always spray two coats of contact cement on the porous underlayment edges to ensure good coverage. Once the cement is dry on both the laminate and the substrate, bring them together. I start at one end and move across, centering the laminate on the substrate edge and pressing firmly as I go. With longer pieces, it's helpful to have someone support the other end of the strip while you work. On edges, I forego the cloth-covered block and apply pressure directly with a 16-oz, dead-blow mallet. Then I use a router with a flush-cutting trim bit to trim the ends and the top and bottom edges of the laminate flush with the substrate (top photo, p. 63). It's important here to rout in the direction opposite the rotation of the router bit. If I'm standing in front of the counter, for instance, and trimming the top piece of laminate where it overhangs the front edge, I rout from left to right.

After all edges are glued and trimmed flush, I use a laminate file to remove minor milling marks left by the router bit. A laminate file is made specifically for plastic laminate and should be available from any supplier. Other files don't do the job. I hold the file *flat* against the countertop and make a couple sweeps over the freshly routed edges, always filing *toward* the substrate. Don't file too much. Where edge strips

Routing out for the sink. **The author cuts sink and stove openings in the substrate before he glues on the laminate, which allows him to test the opening and make adjustments if it fits wrong. Afterward, it's a simple matter to knock a hole in the laminate and run the router around the opening.**



meet at an outside corner, I first file the overlapping piece square, then bevel it slightly. I also run the file at a slight angle along the bottom to take off the sharp edge.

With the edges glued, routed and filed, I spray the tops—substrate and laminate. To keep the laminate and the substrate from touching one another while I move the laminate into position, I lay salvaged Venetian-blind slats on the underlayment as temporary spacers (bottom photo, p. 62). After final positioning, I slide the strips out and press the laminate down as I go.

Always make contact from the center out or from one end to another. I once glued up a circular tabletop and made the mistake of pulling all my spacers out and pressing down the edges first. When I got to the middle I had a bubble, and the laminate didn't want to go down. Slightly panicked, I commenced to place extreme pressure on the trouble spot with block and hammer, and it stuck. I won the battle but not the war; a few days later the center popped loose.

In retrospect, I should have removed the laminate and glued it down again. This isn't something you want to make a habit of, but in a real jam it's nice to know it can be done. The only way to break the adhesive bond and separate two pieces is with glue solvent. Use acetone or lacquer thinner. Mineral spirits will do the job, but it leaves a residue that will interfere with glue up next time around. Work a wide-blade putty knife under a spot on one edge and separate it just enough to spray a little solvent in the crack. Keep feeding the solvent in and pry upward as the bond dissolves. Be patient, let the solvent do the work, and you'll succeed.

When gluing two pieces that meet at a surface seam, stick one side down first, align the index marks, glue down the next piece starting at the seam and work away from there.

With the top piece glued into position and rolled or hammered down, it's time to trim the top flush (middle photo, p. 63). Because I use a self-pilot bit, I spread a thin layer of petroleum jelly with my finger onto the laminate edge first. When cutting, always keep the router in motion when the self pilot is riding against the edge. If you have to stop, pull away from the countertop, or you may burn the edge.

To rout any openings in the top, I punch a hole just big enough for the trim bit to fit into, then I run the router around the opening with the self pilot riding against the opening cut in the substrate (photo facing page). Quick and easy.

Most stainless-steel sinks are held down with clips that fasten under the counter and require a ¾-in. thickness to grab onto. If my substrate is 1½ in. (double thickness) and is going to get a stainless-steel sink, I'll rout recesses for the clips at this time. Essentially, I just remove a section of the plywood layer in the spots where the sink clips will be positioned.

More filing—Despite their name, flush-trim bits really don't cut perfectly flush. If you slide your fingernails up the front edge, they'll catch on the slight overhang. I remove this excess and finish off the edges by hand filing.

Some fabricators prefer to use a bevel-cutting bit, which can be adjusted to trim off the overhang and reduce filing time. I don't use a bevel bit anymore because it's a pain to adjust the height, and a bevel cut produces a wider, dark seam line that I find less desirable.

Filing isn't difficult, but it does require a careful touch. A sharp, fine- or medium-cut laminate file is essential. I first remove the overhang by filing almost flat against the front edge (bottom photo, p. 63). Most of the cutting is done on the back half of the file in a forward-sawing stroke. You'll know you've gone exactly far enough when excess glue at the seam shaves off, revealing a crisp, clean edge. If in doubt, double-check with the fingernail test. After all the edges are finished in this manner, I ease the razor-sharp top corner down with a couple of light passes of the file (or sanding block), held at a slight angle. One thing you don't want to do is file inside corners square. The ¼-in. dia. radius left by the trim bit looks very nice and substantially reduces the possibility of stress-cracking in that area. Once you get the hang of it, filing can be done quickly and precisely.

I clean excess glue off the countertop with mineral spirits and a soft cloth. If I run into a difficult stain, I don't hesitate to use a little bit of mild abrasive cleanser (unless, of course, I'm working with a high-gloss laminate).

Attaching backsplashes—Fastening countertops down is a straightforward job. The standard procedure is to drive screws up through cabinet corner braces and into the counter underlayment. This usually works best if a clearance hole is first drilled through the brace, and obviously, you want to make doubly sure the screws you use are long enough to grab well but not so long that they go through the top.

Backsplashes are glued up just like countertops. I make up backsplashes as separate pieces and attach them after installing the countertop. Many fabricators do this by gluing their splashes in place with a bead of silicone on the bottom edge and backside, and they use no mechanical fasteners. I've used this approach too, but I've never felt right about it because I've seen backsplashes that have been installed this way separate from the counter.

I recently noticed some backsplash-attachment devices, called Smart Clips, in the Woodworker's Supply catalog (Woodworker's Supply, Inc., 1108 N. Glenn Road, Casper, Wy. 82601; 800-645-9292) and decided to try them. I wasn't disappointed; Smart Clips allow for quick, tight backsplash attachment. They're also relatively easy to use. The plastic clips are screwed down at least every 12 in. along the back of the counter. Aligned with the clips, drywall screws are driven into routed recesses in the backsplash (photos below).

I run a bead of silicone along the bottom of the splash before snapping it into the clips. The clips have tapered slots that engage the drywall screws in the backsplash and pull the backsplash tightly to the counter. The only drawback to Smart Clips is their price: they're about 60¢ each, and the $50 installation kit is practically a necessity.

Fabricating a countertop is not difficult, but it does require a good measure of concentration and attention to detail. Mistakes can happen all too easily, and they are seldom as easy to correct. This fine line between success and failure is something that I find particularly appealing. Because of the challenges involved, nothing can beat the satisfaction that comes with a well-executed countertop.

Herrick Kimball is a remodeling contractor in Moravia, N. Y. Photos by Kevin Ireton.

The backsplash. **Clips hold a backsplash tightly to the countertop. Screwed to the back edge of the counter (photo below left), the clips engage a screw on the back of the backsplash. Once the counter is installed, the backsplash is snapped into place (photo below right).**