At some point in your woodworking or do-it-yourself activities, the need to install plastic laminate will come your way, and why not? While it’s a great material for use throughout the home, it excels as a super-smooth shop surface material for projects like the router table on page 20, outfeed tables, cabinet counters, project design desks, and more. Beyond that, it’s cost-effective, installs and cleans easily, and withstands a world of abuse. If you shied away from the material having never worked with it, relax. We’ll run through what you need to succeed, from buying laminate, to choosing glue, to the tools, to laying and trimming for a finished fit.

Material close-up
Home centers serve as your primary source for plastic laminate. Here, you’ll find sheet sizes at 2 × 8’, 30” × 8’ (to allow for backsplashes), 4 × 8’, 5 × 10’, and 5 × 12’ in Wilsonart and Formica brands, among others. It’s worth noting that the material comes 1” wider and longer to allow for cutting and provide a trimming overhang when applied to common-size countertop substrates. As with the samples below, colors, patterns, and finishes vary significantly with prices for a basic 4 × 8’ sheet starting at $50. At steeper prices you can buy solid (color) core plastic laminate or sheets containing decorative surfaces.
Plastic laminate varies in thickness too. Countertop laminate for flat horizontal surfaces measures the thickest at $\frac{3}{64}$". It's engineered for daily use and the most abuse. Balance board, $\frac{1}{64}$" thick, adds stability to a countertop substrate or cabinet side and is applied to inside or bottom faces. Where moisture exists or in high-humidity, balance board makes sense, though countertop laminate can substitute. Use vertical-grade laminate to cover cabinet sides and slab doors. At $\frac{1}{32}$” thick, it too cleans well and comes in many colors, patterns, and textures, offering less wear-resistance than countertop laminate.

Finally, choose MDF or high-density particleboard for your countertop substrate. Go with two $\frac{3}{4}$” layers of MDF glued together with yellow glue.

Tools for working plastic laminate: (1) compass, (2) laminate file, (3) file card, (4) $\frac{1}{2}$” dowels, (5) rubber gloves, (6) contact cement, brush, and $\frac{1}{4}$”-nap roller, (7) hammer, wood block, and J-roller, (8) acetone, (9) flush-trim and (optional) bevel bits, (10) scoring cutter, (11) handheld router.

The goop on glues
To pick the right glue, assess the size of the laminate job, your time, and other key factors. The choices in the chart below work well, though one of them some gives off a harmful and flammable odor and will require working in a well-ventilated space away from any open flame.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Open Time*</th>
<th>Trim Time**</th>
<th>Pros</th>
<th>Cons</th>
<th>Cost/Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-Based Contact Cement</td>
<td>Large/small surfaces; apply w/ brush, short-nap, roller, or finishing trowel; Use two coats on each mating surface.</td>
<td>30-40 min.</td>
<td>0 hrs.</td>
<td>Little down time; low odor; water cleanup; nonflammable; offers strong instant bond.</td>
<td>Spreads thinner than solvent-based; no resetting laminate.</td>
<td>$14/qt. (cov. 190 sq. ft.; two coats per surface equals 47.5 sq. ft. cov.)</td>
</tr>
<tr>
<td>Solvent-Based Contact Cement</td>
<td>Large/small surfaces; apply w/ throw-away brush/ short-nap roller; one or two coats as needed.</td>
<td>15-2 hrs.</td>
<td>0 hrs.</td>
<td>Little down time; spreads thick; offers strong instant bond.</td>
<td>Harmful fumes; ruins applicators; flammable; takes more glue; no resetting laminate.</td>
<td>$11/qt. (cov. 27 sq. ft. of bonded surface.)</td>
</tr>
<tr>
<td>Melamine Glue</td>
<td>Smaller surfaces; apply w/brush, roller, or fine-tooth trowel; one coat to one surface only; platens/clamping/ weighting required.</td>
<td>5-10 min.</td>
<td>4 hrs.</td>
<td>Low odor; water cleanup; nonflammable; long closed-assembly time***.</td>
<td>Slow drying time; pressure needed over entire surface for a complete bond.</td>
<td>$7/16 oz. (cov. 56 sq. ft./qt.)</td>
</tr>
</tbody>
</table>

Note: Common white glue works in a pinch and behaves much like melamine glue.  
*Open time: Amount of glue-drying time before applying laminate.  
**Trim time: Amount of time after application when you can trim waste.  
***Closed assembly time: Amount of time available to adjust/align workpiece.
**First make the substrate**
Most shop laminate work centers around making countertops. Begin by cutting the top substrate sheet to exact size. Cut the bottom piece slightly oversized and glue it to the top piece. Chuck a top-bearing pattern bit in a handheld router and trim the edges of the oversized piece flush (Photo A). If scribe-fitting the countertop to a wall, allow the back edge of the top substrate piece to overhang the bottom piece by 1/4". If joining two countertops, do so with a butt joint and countertop connectors.

![Image A](image1.png)

Use a top-bearing pattern bit to even the bottom edge of the substrate piece with the top piece.

**Cut the laminate**
Prepare the substrate surfaces by sanding them with 100-grit sandpaper and wiping clean.

![Image B](image2.png)

Run the carbide-tip of the scoring cutter along a straightedge several times, and then snap off the oversized piece at the groove.

![Image C](image3.png)

Clamp the laminate in place on the substrate, supporting the waste; now rout the piece with a flush-trim bit and oversize bearing (Inset).

**Figure 1: Order of Applying Laminate**

![Diagram](image4.png)

Note the laminate pieces you’ll need for a countertop (and backsplash, if desired) and their order of application in Figure 1.
1. (For wood-banded edges, see page 36.) For ease of installation later, cut the laminate pieces ¼ - ½” oversize. While you can cut pieces on a tablesaw with a 60-tooth, thin-kerf blade, and zero-clearance insert, wielding a full sheet onto the saw top and against the fence can prove tricky, especially if you don’t have large infeed and outfeed support surfaces. A way around this wrestling match is to use a laminate scoring cutter to break a large sheet into smaller pieces (Photo B).

Because cutting inside corners in a large laminate piece can stress the material and result in a crack, rout the needed oversized piece as shown in Photo C. This method employs a 1½" bearing from a router bit bearing kit to create the desired waste overhang.

Apply and trim the laminate
Wearing gloves, apply glue on the first mating surfaces of the laminate and substrate. Wait out the open time and apply a second coat if the MDF or particleboard substrate seems overly absorbent. Test for light tack, carefully position the laminate over the substrate, and apply, working from the center out. With countertop pieces over 3' long, place dowel rods every 12" along the glue surface. Align and rest the laminate on the rods. Now press down at the center to make contact, slip out the rods one by one, and smooth the laminate toward one end as shown in the opening photo on page 32. Pull the rods and smooth out the other end.

Ensure a complete bond by rolling out the laminate as shown in (Photo D). To avoid snapping laminate overhangs, tamp the edges with a block of wood and hammer.

Chuck a flush-trim bit like the one in the Trim Bit Photo in a handheld router (a trim router works best) and remove the overhang (Photo E).

To knock down the sharp laminate edges left by the flush-trim bit on countertops, rout them with a bevel-trim bit having a 15° or 25° cutting edge or use a laminate file and downward strokes (Photo F). Remove residual glue with acetone and a rag. Repeat process for the backsplash.

Press the laminate onto the substrate with a J-roller; avoid breakage at edges with a hammer and wood block (Inset).
Fitting the countertop in place
To install the countertop and backsplash to a wall, first set the countertop in place atop one or a gang of installed base cabinets. Check that the back corners of the countertop fit against the wall and that the front edge is the same distance from the cabinet fronts. If not, space the countertop from the wall about 1/2” at contact locations. Now, placing the compass at the deepest recess along the wall with the pencil point adjusted to rest the countertop’s back edge, run the compass along the wall and transfer the high spots (usually about 1/16” to 1/4”) onto the laminate (Photo G).

Now, using a belt sander and 80- to 100-grit sandpaper, carefully remove the high spots along the back edge of the countertop for a custom fit against the wall (Photo H).

Option 1: These mitered bands bond to the edge of the already laminated countertop and are given a ¼” round-over.

Option 2: Here, the bands are butt-joined and radiused at the corner. Laminate overlays the bands and features a ¼” chamfer along the top edge.

Wood Edge-Banding Options

For all its strengths, laminate edges are a bit of an Achilles heel. Unless they’ve been finished properly, they’re prone to catching and then cracking or delaminating.

Consider a ⅜” hardwood edge band for a contrasting look and durability. The maple samples shown are held in place with glue and biscuits.

G

Scribe the contours of the countertop’s adjoining wall by running a compass along it, creating a scribe line for belt-sanding.

H

Belt-sand the raw edges of the laminated substrate up to the scribe line, being careful not to gouge the workpiece.

Set the backsplash in place on the countertop and against the wall. Again, use the compass to scribe the wall’s irregular surface onto the top edge of the backsplash. Remove the waste to the line with a belt sander.

Secure the countertop by driving screws through the cabinet’s stretchers and into the substrate. Glue the backsplash in place with construction adhesive, pressing it against the wall until the adhesive dries.
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