Easy Veneering with a Household Iron

Dried glue, heat and pressure bond a lovely wood skin onto any project

by Mario Rodriguez

Ironing on veneer is simple and quick even on curves like this apron. First apply yellow glue to both the substrate and the veneer; let them dry. Then place the two together, and reactivate the glue with an ordinary iron.

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Photos: Alec Waters

Being able to veneer can dramatically extend the scope of projects available to a woodworker. You can take veneer, a beautiful but unstable material, and apply it to a solid, flat substrate. You can also repeat or book-match patterns for a spectacular effect. But what's the best way to glue down the veneer and keep it down?

Mentioning traditional techniques of hot hide glue and a veneer hammer produces accelerated pulses and sweaty palms for most woodworkers. In my veneering workshops when students get over their initial fear of gluing veneer, they are okay.

But when I visited former apprentice Ken Vigiletti, he turned me on to another way of applying veneer using waterproof yellow glue and a household electric iron (see the photo on the facing page). At first, I was skeptical. But after seeing a demonstration, I was anxious to get back to my shop to give the technique a try. And the project I had in mind—a small half-round hall table that I wanted to cover with sycamore veneer—was perfect because veneer would enhance the table's form (see the photo at right).

Vigiletti's demonstration was not the first time I'd seen veneer adhered with an iron. The technique also appeared in *FWW* #87, p. 66. But in that article, the author applied white glue to the substrate, and then he immediately ironed on the veneer. With that method, the veneer can slide on the wet glue, causing misalignment and gaps at the seams. By contrast, when you heat the dry glue through the veneer, it adheres in place right away. And water is less likely to evaporate out of the glue and through the veneer, causing bubbles.

About the adhesive

The main appeal of veneering with yellow glue is that many of us use it daily. With yellow glue, you don't have to worry about water-to-glue ratios, soaking time, temperature, hammering pressure or the mess associated with hide glue. And by using an ordinary iron, there's no need for a vacuum bag, an expensive press or any complicated clamping cauls. But because I wasn't keen about the idea of having to redo the veneer if the bond failed, I was still hesitant about heating waterproof glue with an iron. So I asked one of *Fine Woodworking*'s regular contributors, Chris Minick, about the process. Minick, a research chemist, heartily endorsed the technique (see the box on p. 50).

Even before talking to Minick, I was attracted to the prospect of ironing veneer over waterproof glue for a couple of reasons. In situations where the wood will be exposed to moisture, such as in a sink cabinet or in a vanity for a bathroom, the veneer isn't likely to come loose. Also, once this type of glue is cured, it isn't sensitive to common finishing solvents, so finishing shouldn't affect the veneer bond.

Another advantage of this method is that you can glue down burl or crotch veneer without getting glue stains, which can cause finish delamination and uneven staining. When you glue down these veneers using a press, the glue bleeds through. This is because of the capillary action caused by the high percentage of end grain. Unless you use hide glue, the glue stains are nearly impossible to remove. However, by allowing the yellow glue to set up beforehand, you create a barrier near the surface that minimizes the bleed-through.

While I was talking to Minick, I learned of another technique that prevents the glue from bleeding through onto the face of the veneer. First seal the back side with shellac (use a 3-lb. cut). Once the shellac is dry, apply the glue and wait for it to dry. Then you can iron the veneer. Minick, who used the method on some quilted mahogany veneer, said that the shellac undercoat works well because shellac is thermoplastic, just like the glue and just like the burn-in repair sticks that furniture repairers and restorers use. And, if you get a dab of shellac on the veneer face, no big deal. Shellac is a great sealer; it's compatible with virtually any finish.

Veneer can emphasize a table's form. *To bring out this table's traditional shapes, like tapered Federal-style legs, the author veneered it with sycamore. The table is suitable for an entrance hall or this formal dining room at the historic Peach Grove Inn in Warwick, N.Y.*

Cutting and taping the veneer

On the table project, I started by veneering the tapered legs (the legs made good practice before I did the top) and ended with the more difficult curved apron. I cut veneer for the legs using a sharp chip-carving knife. When veneering the top, I used narrow strips of veneer tape along the seam, and I reinforced the joint with shorter straps of tape running perpendicularly.

Stabilizing and gluing veneer—*With a scrapwood backup, Rodriguez rolls glue onto the back of the veneer. By spraying water on the face of the veneer, he keeps the piece from curling. He has already smoothed the front of the apron and coated its surface with glue.*

Scraping the veneer leaves a clean, smooth surface. *Once the glue is cured and the veneer is set, the author uses a scraper to remove skid and scorch marks left by the iron. He keeps the scraper even and the strokes light to prevent the burr from digging into the surface.*

Before gluing, I also taped all the cracks, which is especially important if you're using curly veneer. To see if there are any splits, hold the veneer up to a light. If there are any cracks of light, even slightly suspect areas, tape them.

Some veneers, like burls and crotches, require a substrate veneer laid 90° under the face veneer. This underlayment absorbs the movement of the face veneer and prevents tiny surface checks. Because of the relatively straight grain and the 1/28 in. thickness of the sycamore veneer (most veneer is 1/64 in. thick), I omitted this step on my table.

Applying the glue

To apply the Titebond II glue, I used a small paint roller with a short nap. I heavily coated both the substrate and the back of the veneer. Before setting the veneer to dry, I sprayed the face side with a little water to minimize any curl (see the top photo). One thing to remember when you're working with veneer: What you do to one side, do to the other. In this case, the water mimics the glue.

Ironing the veneer

After setting down the veneer to dry for about 30 minutes, I placed the veneer with some overhang all around. Then, using a steam iron on the cotton setting, I pressed the veneer firmly and worked from the center out. I kept the pressure steady and the iron moving slowly. Looking for any gaps or open seams, I went over the veneer several times, allowing the iron to linger over any trouble spots. If you leave too much overhang on the veneer, the edges could curl away from the substrate, preventing a clean, tight job. To remedy this, limit overhang to 1/8 in., and apply steam from the iron. The steam causes the veneer to expand on the face side, which allows it to lie flat again.

The iron left some light skid and scorch marks, but these were easily scraped off later after the glue cured (see the bottom photo). On larger areas, I work from the center out toward the edges to avoid creating bubbles or creases. But I've learned that every veneer behaves differently—even within the same species. So on certain jobs, you may want to iron the edges first. Experiment on scrap to see.

The heat from the iron should drive out excess moisture from the glue, which might otherwise bubble up under the veneer. Steam also works to temporarily release the veneer when you want to reposition it or when you need to iron out blisters and bubbles.

On my table project, the veneer was large enough to cover the apron in one piece, but often I have to join narrow pieces to span a larger surface. You can shoot and tape the seams prior to gluing, and then treat the assembly as one piece. Or you

How thermoplastic adhesives work

by Chris Minick

Ironing on veneer is a sound idea. It'll work with yellow glue, white glue and waterproof yellow glue (such as Titebond II) because all are types of polyvinyl acetate (PVA), which are thermoplastic adhesives. This means the solid resin (dry glue) becomes flowable (plastic) at a certain temperature. The range can be from under 200° to over 400°F. To visualize this phenomenon, picture your sandpaper gumming up when you sand hardened glue. The heat produced by friction causes the glue to melt. This same thermoplastic attribute will allow you to veneer with an iron.

A household electric iron (not a travel iron) will produce enough heat to melt most PVA glues. The glue will become workable and sticky for a period of time. But here's where there are differ-

Video: Ironing on veneer

VIDEO TAKES

If you like the look of veneer, but you don't like the mess of hot-hide glue or the fuss of vacuum bags and clamping cauls, Mario Rodriguez will show you a slick way to glue down ve-

can lay the veneer one piece at a time, and cut your seams in place. You do this by overlapping the second piece onto the first and cutting through both of them. After passing your saw or knife over the seam several times, lift the top waste piece away from the seam. Then gently lift the edge of the top sheet, and remove the waste strip from the bottom piece of veneer. If you can't lift the veneer, use a bit of steam from the iron to loosen up things. When both waste strips are removed, press the seam firmly. After ironing, apply veneer tape lengthwise down the seam, and place tape straps across the seam (which prevents the seam from creeping open). Leave the tape in place for 24 to 48 hours.

Trimming the veneer

To trim the veneer for the hall table, I used a sequence of hand tools. First I cut the veneer with a veneer saw, as shown in the top photo. I prefer a French veneer saw (which is available from the Garrett Wade Co. Inc., 161 Avenue of the Americas, New York, N.Y. 10013-1299; 800-221-2942) because its teeth point toward the center of the blade arc from both ends, which lets me score the veneer before beginning the cut. And because the handle is directly alongside the blade, a French veneer saw gives me better control than the more common offset-handle veneer saws.

Next, paying close attention to the direction of the veneer's grain, I use a block plane to trim the veneer almost flush with the adjacent surface. For this job, I use a Lie Nielsen block plane. And rather than risk tearing the veneer or digging into the wood, I leave the veneer edge proud. After planing, I use a 10-in.-long second-cut file to level the veneer to the substrate. I work from the edge into the veneer so that I don't chip it, and I lift the file on each return stroke.

Then I use a Sandvik scraper to smooth out the file marks, as shown in the center photo, while again noting the direction of the grain. The scraper leaves a clean surface that will ensure tight, almost invisible, seams. By keeping about three-fourths of the scraper on the work, I prevent the scraper's burr from rolling over the edge.

After gluing veneer to the adjoining surface and allowing it to dry, I repeat the above steps to trim the veneer where it meets at the corner. Finally, I slightly bevel the edge of the veneer at the joint using a smooth file (see the bottom photo). □

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TRIMMING VENEER

Saw off the veneer leaving a little overhang to protect the edges. *The author drags his veneer saw along the tabletop (top) leaving about 1/32 in. excess.*

File and then scrape the surface flush, so the corner will be tight *(center). After Rodriguez files the veneer edges level with the leg, he scrapes them smooth.*

Chamfer adds a finishing touch—*Using a smooth file (above), the author bevels the veneer edges, which eases and protects the table's corners and helps to disguise the seams.*

ences: Regular white glue can be reactivated indefinitely at a temperature of only around 180°F (below the "delicate" setting). Yellow (aliphatic resin) glue must be heated to about 250°F (between "delicate" and "wool"), and you might have a window of a week or more to do this. Waterproof glue requires a temperature of 350°F or more in the "cotton" to "linen" range. And because it's a cross-linking PVA, you're better off getting it ironed down within 72 hours. To find out exactly how long you have to reactivate your adhesive, call the manufacturer.

If you're unsure about your glue and how hot to set the iron, take some scrap veneer, and start ironing at a low temperature. Then use more and more heat until the glue is workable and you can adhere the veneer. Once you move the iron away, the glue will cool fairly quickly, and your veneer will be set in place. This minimal-heat approach may prevent you from overheating a piece of delicate veneer. □

Chris Minick is a product-development chemist in Stillwater, Minn.

neer using a household iron. He also goes into detail about trimming veneer and getting clean joints. And he shows how to handle difficult veneers like curly and crotch. Send for "Ironvid," a $10, 28-minute video cassette (VHS) companion to this article. Order #011039, The Taunton Press, P.O. Box 5506, Newtown, Conn. 06470; (203) 426-8171.—*Alec Waters, associate editor*