Building a Veneered Armoire

Simple joinery helps speed construction; veneered curves give it a classic style

by Gregg Domek

I've been commissioned to build more than a dozen armoires in the past several years, and not one was made to serve the purpose for which this furniture style was designed—holding clothes. Instead, I've built them to house televisions, audio equipment and computers. I've also made armoires as dry bars and as drop-down writing desks. Clients like these armoires because they hide a lot of clutter, and I can scale the design to fit any room. I made the one shown in the photo on the facing page to store audio/visual equipment in a master bedroom. It has plenty of space for a large television and a number of electronic components.

The joinery for this project is simple and straightforward, glued and biscuited or screwed in most cases (see the drawing on the facing page). Building cabinets brings home the bacon for my family, so I'm interested in making strong joints quickly. The dimensions for this armoire are not set in stone. You can modify this design and still end up with a handsome and useful piece of furniture.

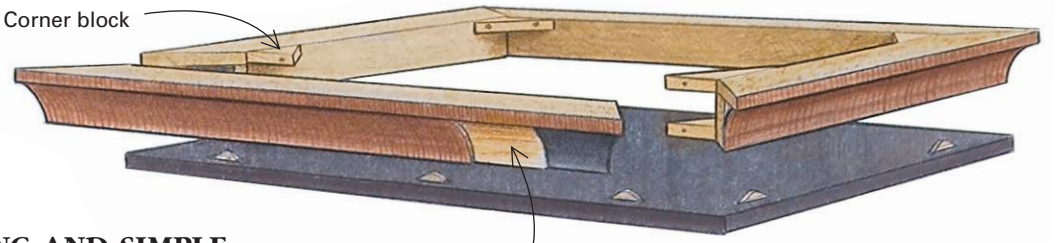
The construction of this armoire, as with most of my work, is unusual in that I don't use solid hardwood. Also, I use plastic plumbing pipe as the core material for curved elements (see the inset drawing at right). The entire cabinet, including the columns and the crown molding, is made from the same flitch of makoré veneer (also called African cherry). Last year, I used about 15,000 sq. ft. of veneer and less than 400 bd. ft. of lumber. When I

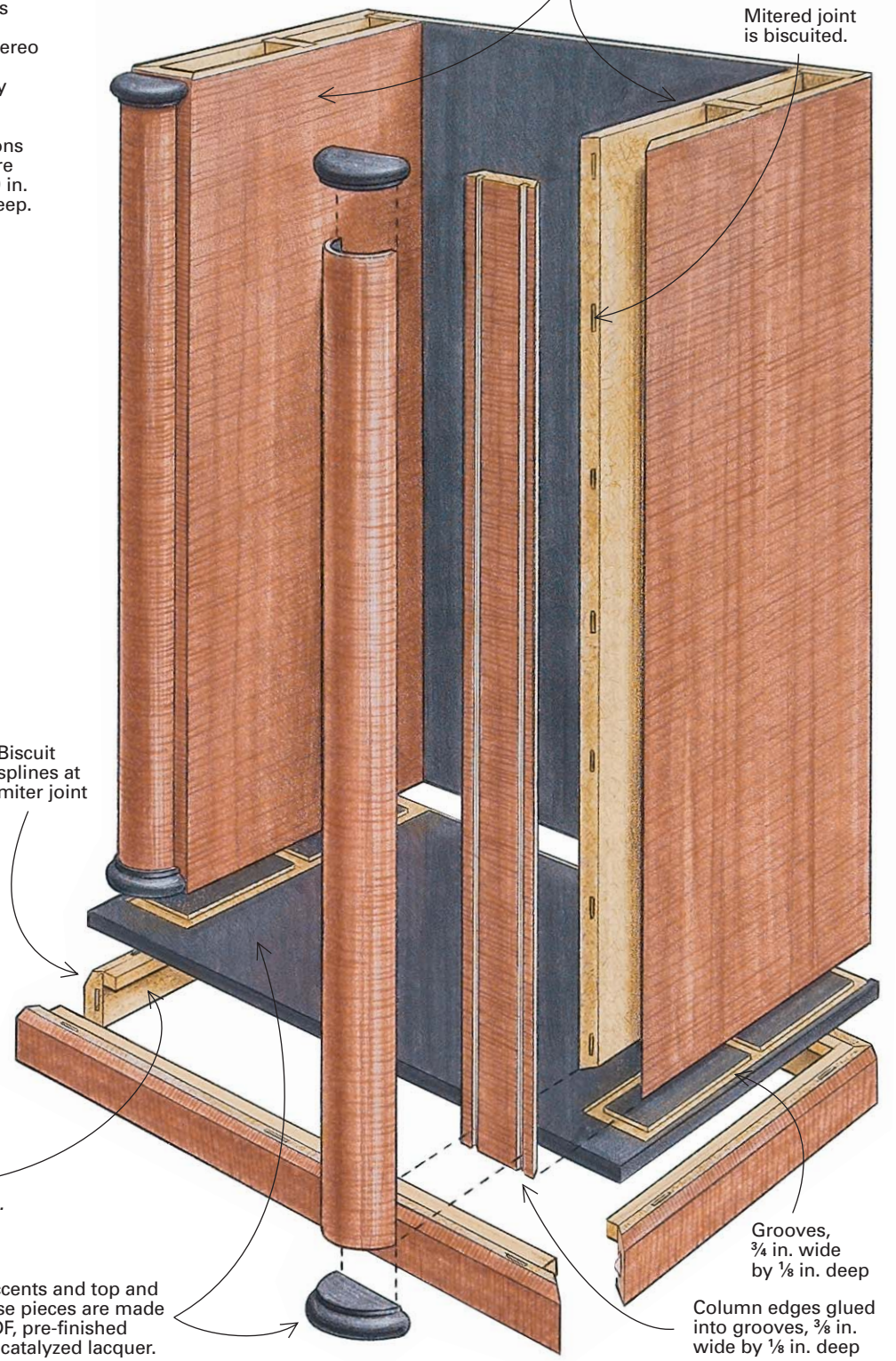
***Veneering curved columns**—The author wraps veneer over a plastic pipe and inserts the assembly into a metal stovepipe form. The technique yields curved components that match the veneer in the rest of the case.*

Photos except where noted: William Duckworth

CASE-WORK JOINERY IS STRONG AND SIMPLE

This armoire was made to store a television and stereo equipment. The interior cabinetry was constructed separately. The overall dimensions of this cabinet are 78 in. high by 49 in. wide by 26 in. deep.





Making columns and crown molding

Columns and cove-shaped crown molding are veneer over cores of black ABS plastic pipe.

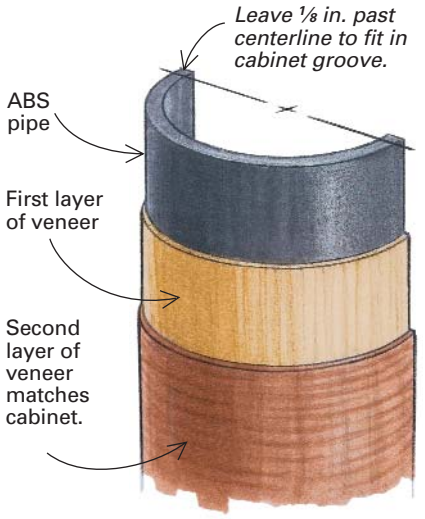


Photo this page: Gregg Krogstad; drawing: Bob La Pointe

VENEERING THE PANELS

Jig for jointing the edges of veneer— *By trimming two edges at the same time, the author achieves a perfectly matched seam.*

moved to coastal Washington state from Arizona several years ago, I learned very quickly what a difference in climate can mean. Here, veneered pieces are a lot more stable than those made from solid lumber. I also prefer the visual effects I can get with veneer—furniture perfectly uniform in grain and color.

Choose the veneer carefully before laying it up

Veneering case work is pretty straightforward, once the design details have been worked out. I break down the design into separate parts (see the drawing on p. 63) and glue up all the veneer before assembly. I choose all the pieces of veneer for the sides of the case, the doors and the back from the same part of the flitch, and then I mark all the seams for a book-matched pattern.

Rout the edges for tight seams—After choosing all the pieces and trimming them roughly to size with a razor knife, I place them in a router jig I devised to trim the edges for tightly joined seams (see the photo above). Basically, the jig is a plywood panel with a routed slot down the middle. The jig holds two pieces of veneer parallel to one another while I cut the edges with a laminate trimmer. I use a ¾-in., straight plunge-cutting router bit that rides in the routed slot. Because I cut both pieces of veneer at the same time, little imperfections in the jig make no difference. I get nearly perfect seams every time.

Some veneers will chip or tear out on one edge as the seam is cut. With problem veneers, I put one piece of veneer at a time in the jig, always feeding the router into the veneer against the direction of the rotating bit. This method takes longer, but you'll avoid sloppy seams.

After trimming the veneer, I tack two pieces together with small pieces of masking tape on the back side. I space the tape as needed to hold the pieces together as I flip the face side up. Then I apply veneer tape to the seam. When the tape is dry, I remove the masking tape from the back side of the veneer, which will be glued to the core.

Engineered wood products make the best cores—I use only medium-density fiberboard (MDF) or high-density particleboard as core material for flat panel components. When gluing up the veneer for large pieces, like case-work panels and doors, I prefer urea formaldehyde (plastic resin) glue, because it provides a strong bond that doesn't creep. And this glue allows more open working time to position pieces in the veneer press. I use a flip-top vacuum press (see the photos on the facing page).

Urea formaldehyde glue for large panels in the veneer press—*To apply glue to large, flat surfaces, the author pours it on and rolls it out with a paint roller. He covers the veneer with a protective panel of 1/4-in. MDF faced with vinyl. The vinyl won't stick to any glue squeeze-out.*

For veneering smaller pieces, I sometimes will use regular polyvinyl acetate (PVA) glue. Both yellow and white varieties work well.

Curved pieces require innovative solutions

I used to turn down work if the designs included curved elements like the decorative columns and large cove molding on this armoire. Even if I could find solid lumber suitable for making these elements—often not available in many wood species—I still had the problems of stability and of matching the color of the lumber to the veneer.

The unorthodox but effective method of gluing veneer over a core of plastic pipe solved all that. I use a standard black ABS (acrylonitrile butadiene styrene) pipe, which is available at most plumbing-supply dealers. I laminate the half-round column on a full piece of pipe, and then I cut out the waste after all the veneering is done.

With the cove molding, I rip out some of the waste first, veneer that oversized piece and trim it down later.

Use epoxy for the first layer of veneer—With both the cove-shaped crown molding and the half-round columns, I glue up a backing layer of veneer first, using a two-part epoxy (PVA glues will not work with ABS plastic pipe). The epoxy makes a really strong bond between wood and plastic, and it fills any voids or imperfections in the surface of the pipe. I spread an even coat of epoxy on the veneer, as shown in the photo at left on p. 66.

The first layer of veneer is technically not crossbanding because the grain runs in the same direction as the decorative second layer. But it's important not to skip this step. The first layer evens out the curved surface; any epoxy that bleeds through under pressure can be sanded smooth easily.

For the second layer, I use white or yellow PVA glue. The second layer will alleviate any problems the epoxy would otherwise cause in the finishing process. When gluing each layer, I use a piece of waxed paper between the veneer and the caul to keep any glue that bleeds through from sticking.

Make a caul for the crown from another piece of pipe—For gluing the cove-shaped crown, I use a second piece of ABS pipe as a clamping caul (see the top right photo on p. 66). I cut out a section from the pipe, lengthwise, about 2 in. wide. The caul and the core piece are both cut from 6-in.-dia. plastic pipe, but both have enough flexibility in them that

VENEERING THE CROWN

Epoxy veneer to plastic pipe. *The author smooths out glue for the first layer of veneer. He likes straight-grained fir because it bends easily to the curve of the pipe.*

A second piece of pipe makes a caul. *Although outside and inside diameters of the same size pipe are different, the plastic is flexible enough to give even pressure on the veneer.*

the difference between the outside and inside radius doesn't matter. With a ¾-in. scrap set on edge and clamped under firm pressure, you can get good results.

I always glue the veneer to a core piece that's larger than the finished dimension to allow some slack for cleaning up the edges. Once both layers of veneer are glued firmly to the core piece, I glue that into an L-shaped form of MDF or particleboard, using a bead of epoxy where the pipe contacts each leg of the form. This form defines the size and shape of the crown and holds the curved piece rigidly in place. Once the glue has set, I can trim the molding to size with the tablesaw (see the photo at right). This gives me a good edge, clean and straight, over which I add veneer to the top edge that will show.

Stovepipe and strap clamps make a form for the column—The method I devised for gluing the veneer to the outside surfaces of the columns is shown in the photos on the facing page. Spreading the glue with a paint roller ensures an even coat on every layer. For a gluing form, I use regular metal stovepipe wrapped around the plastic pipe, and I

Trim the crown to size after veneering. *To make the crown molding, the author glues the plastic cove to an L-shaped particleboard form after veneering. When the glue dries, he trims the molding to size.*

Bottom photo: author

VENEERING THE COLUMNS

Photo: author

***Gluing veneer to columns**—Galvanized stovepipe, left open so it's flexible, works well as a bending form for gluing veneer to convex surfaces (left). Strap clamps along the length will provide even pressure. Waxed paper prevents the good veneer face from adhering to the padding scraps. After the columns are veneered, the author glues them into grooves cut into the front face pieces of the vertical case members.*

pad the interior with several layers of scrap veneer to even out the pressure. Be sure that the stovepipe caul is a few inches longer than the piece being veneered, just to make sure the veneer is clamped along its entire length. I place strap clamps around the caul every 3 or 4 in. The force of using a screwdriver to tighten the worm gears in the clamps will pull the caul together with plenty of pressure. A socket-head driver isn't necessary.

Thermal bond glue for edges

I discovered another product that saves time and money: glue that comes in rolled sheets. It's activated by the heat of a household iron. I buy the rolls in 12 in. widths (Therm O Web/Colortech, 770 Glenn Ave., Wheeling, IL 60090; 800-323-0799) and cut pieces to size as I need them. I use this for all edge details, like doors, shelves, the flat edge left after trimming the crown molding and the 45° bevel along the top edge of the baseboard.

On MDF cores, I use one layer of glue with the veneer. Because particleboard cores are more porous, I double up the pieces for a good bond (each layer is .003 in. thick). Handling glue sheets and pieces of veneer separately may take some getting used to. But the results make it worthwhile. The bond is as good as you would get by clamping the pieces together with PVA glue. I set my iron on medium-high to generate enough heat to melt the glue. I've never had a glue joint fail, and I've been using this method for several years. I know there are purists who will scoff at some of my choices of materials and techniques, but I stand by the results: cabinets as nice as the day is long. □

Gregg Domek owns and operates Concepts in Design, a custom cabinetmaking business in Seattle, Wash.