



Custom Doors From Stock Slabs

Applied moldings create the look of a custom door for a fraction of the cost

by Gary Striegler



Given the choice, most of my clients will opt for solid-core doors over hollow-core ones. It's a quality thing: In my area, solid-core doors cost about twice as much as hollow-core doors, but it's an easy sell when homeowners learn they get a quieter and more solid-feeling unit for their money. I like solid-core doors because they cost less and are more stable than raised-panel pine doors. To raise the ante a bit, I offer an upgrade that guarantees that my clients' doors will look absolutely unique: "custom" frame-and-panel designs, which I make by applying panel moldings to flush doors. Depending on the molding, this upgrade can add as little as \$50 to the cost of each door. Most of my doors are traditional two-, four-, and six-panel designs, but I've also applied curved moldings to square-top doors, and I've cut arched tops in taller slab doors and added matching arched frames. I've even transformed solid slab doors into glass doors by cutting out a rectangular panel and replacing it with glazing.

I've used applied moldings this way for both new construction and remodeling projects. The technique can be used with exterior doors too, as long as exterior glue

is used and there's an overhang of at least 6 feet to protect the door and moldings from the weather. And I always make sure my clients understand that cutting a door — so that lights or an arched top can be added — voids the manufacturer's warranty (though I've never had any problems).

Layout

Various manufacturers offer a wide range of panel moldings, but I've found that the best ones have fairly thin edges on both the inside and outside, so that the profile returns gently back to the door. The PM 525 and embossed PM 24 and PM 25 profiles from White River Hardwoods are good examples (800/558-0119, whiteriver.com). Moldings that have a pronounced edge to them are prone to damage from kids and pets. Since panel molding adds to the effective thickness of the door, this technique can't be used with pocket doors.

When I plan my layouts, I usually try to emulate the look of a traditionally built raised-panel door. Bottom rails are typically 10 inches wide on this type of door, top rails are usually 4½ to 5½ inches wide, and lock (or center) rails are typically



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6½ inches to 7 inches wide and centered 36 inches up from the bottom of the door. Stiles are typically 4½ to 4¾ inches wide. I use a drywall square marked with these dimensions to record my layout on the door slab (see Figure 1).



Figure 1. When laying out the design, the author usually mimics the stile and rail dimensions of a traditional frame-and-panel door (A). The panels are assembled with glue and 1½-inch-long 23-gauge headless pins (B), then glued (C) and pinned to the door slab following the layout marks (D).



When laying out the door, it's a good idea to check the door hardware in case there is an unusual doorknob or a huge escutcheon. It's always a lot easier to modify the layout than to try to work around a panel design that interferes with the function of the lockset. And when I use embossed moldings, I spend a little extra time laying out the design and planning the cuts so that the pattern looks reasonably continuous around the miters.

Installation

Some of the moldings I use cost more than \$2 per lineal foot, so I try to cut them as carefully and systematically as possible to avoid wasting expensive trim. I set up for

the right-hand miters and cut the longest pieces first, using a good-quality 80-tooth crosscut blade in the miter saw to get clean cuts. Then I switch to the left-hand cuts, using a stop block to speed production. Production cutting is good, but remember that this is finish work, not framing; you have to stay focused so that the molding is tight against the fence and accurately positioned to get perfect miters.

After the pieces are cut, I use glue and 1½-inch-long headless 23-gauge pins to put the frames together. I also use glue when I pin the assembled frames to the door, with my layout marks serving as a guide. I'm very careful with glue squeeze-out, especially if the door is going to be stained. Instead of wiping excess glue off, I wait until it starts to harden and then use a chisel or sharp utility knife to remove it, since the residue will interfere with the way the door absorbs stain.

Curved Tops

Segmental arches are easier than elliptical arches to lay out on a door slab, and more practical than round arches when there's limited headroom. (For more on curved trim, see "Building an Arched Passageway," 12/07). I usually cut out the arch with a straight-bit-equipped router mounted on a trammel arm (Figure 2, next page). But sometimes, with multiple doors, I make a plywood pattern first and use it — along with a router equipped with a long pattern-bit — to make the cuts. If I'm working with an existing doorway, I scribe the slab to the opening for the best fit, since I never assume that I'm working with a true radius or a square opening.

After cutting the arch, I sand the door smooth and carefully remove all the dust. Then I seal the top with 1½- or 2-inch-wide iron-on veneer edge banding. This tape isn't widely available at most home centers or lumberyards — especially in species other than oak — so you'll have to



Figure 2. The author cuts segmented arch tops in solid-core door slabs with a router mounted on a trammel arm (A). After smoothing the cut with a belt sander (B), he irons on 1½- or 2-inch-wide veneer edge banding (C), which he trims to fit. The edge banding seals the top of the door.



do a little advance planning when you're cutting arched doors.

I usually make my own curved moldings for the parts of the frames that match the door radius. If there's an embossed pattern and it's fairly simple, I've had good luck matching it with a wood-burning tool judiciously applied to the milled panel molding. For more intricate embossed patterns, I've actually stripped out that part of the design from a straight piece of molding and glued it to the curved section. Of course, many millwork suppliers offer curved wood moldings (for doors that will be stained) or flexible resin moldings (for doors that will be painted) to match their straight molding profiles.

Glass

I use the same panel moldings to frame glass panes, stained-glass panels, and mirrors. I start by carefully laying out and cutting the opening in the door (Figure 3). Next, to create a split jamb that will hold the glass, I rip stops that are

equal in width to half the thickness of the door minus the thickness of the glass panel. I size the jambs so that they'll fit snugly in the opening, with about 1/16 inch of clearance.

When I fasten the frames to the door, I take care to align the jambs on either

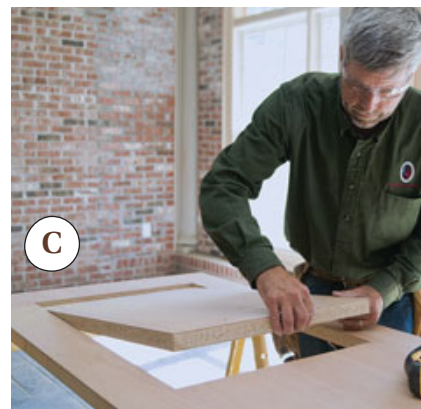
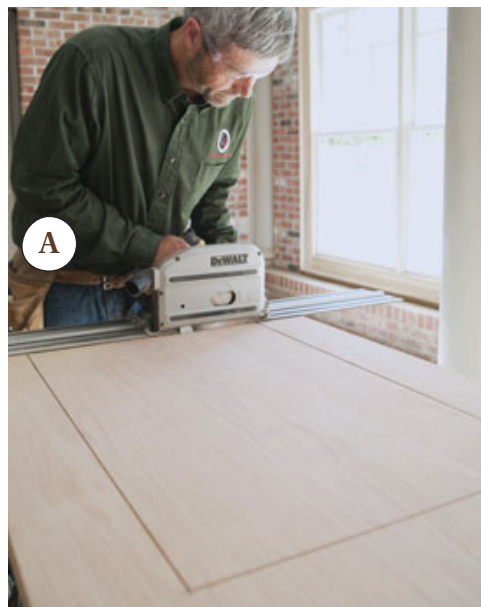


Figure 3. To cut the openings for glass panels in solid-core doors, the author first plunge-cuts with a track saw (A), then finishes up the corners with a jigsaw (B), leaving a clean cutout with square corners (C).

Custom Doors From Stock Slabs



Figure 4. Split jambs that fit snugly in the opening hold the glass in place (A). After pinning the panel molding to the jambs (B), the author temporarily tacks the assembly to one side of the door (C), then uses it for reference as he flips the door over and glues and pins the remaining frame to the door (D). The tacked frame will be removed and finish-coated along with the rest of the door before the glass is installed.

side of the door, but only glue and pin one side (**Figure 4**). Next — since tempered or safety glass is generally required in doors — I remove the temporarily tacked frame and call in the glass company to measure the opening. I schedule the door for finishing while the glass is being fabricated. I want to make sure the door is stained or painted before the glass company comes back to install the glass.

Finishing Up

The final finish is critical for a great-looking door, so before I hand the door off to my painting sub I take care to lightly sand

everything with 120-grit paper to remove scuffs and other marks. My painting subs usually work on site, setting up one room to use as a spray booth. They use oil-based primers, paints, and stains. All of the stain finishes are protected with a sprayed lacquer finish.

Cost. Depending on the number of panels, a door may require as much as 32 to 40 lineal feet of molding per side. Although some stock panel molding costs as little as 70 cents per lineal foot, the more expensive embossed panel moldings from White River cost more than \$2 per lineal foot, and can add significantly to the cost

of a door. To save money, some of my clients have opted to leave the moldings off the back of closet and bedroom doors.

Glass is usually pretty reasonably priced. My glass company charges about \$50 per door if its workers are on site for other work.

Set-up time adds to the cost of production. Once I've set up for four or five doors — the best number for the most efficient production — it takes me about a half-hour to panelize a single door.

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