Flawless Frameless Shower Glass

A tailor-made solution for truly custom showers

BY MATT BRYANT

As a glass installer, the one thing I get asked to do more than anything else is frameless shower glass. Held in place with minimal hardware, frameless shower glass appears to almost float, giving bathrooms with stone or tile finishes an extra bit of sophistication. But it can't be a last-minute add-on. Successful installation generally requires solid blocking in the walls to support the heavy glass panels, plumb walls and flat wall finishes, and a threshold that slopes gently into the shower.

Then there are the quirks of the glass itself, which has to be specially fabricated for each installation. Professional glass fabricators cut the glass to size and make custom cutouts to accommodate the hardware you specify in the locations you need, and it's crucial to get all of these details set in stone before ordering glass. Once the glass is tempered—done after all cuts are made to make it stronger and less likely to injure people if it breaks—it can't be changed.

Many manufacturers of frameless-glass hardware only sell their products to glass-shower businesses, not directly to consumers. That was the case with the Portals hardware used here. When selecting hardware, be aware that you're likely to need to hire a professional to do the installation; custom frameless showers aren't DIY projects.

Frameless shower doors are usually hinged off the wall for strength, durability, and a cleaner look. When doors hinge off a glass panel, additional hardware is often required to stabilize the panel, which adds complexity and compromises the frameless look. Plastic seals used around panel edges can hide some imperfections, but they also detract from the frameless appearance. Leaving these seals out means that measuring for and fabrication of the glass has to be quite precise.

There's almost no end to the way frameless glass can be configured, but one of the most common arrangements I'm asked to do includes a single fixed panel of glass and a door that hinges off the wall. The procedures

POSITION THE PANEL

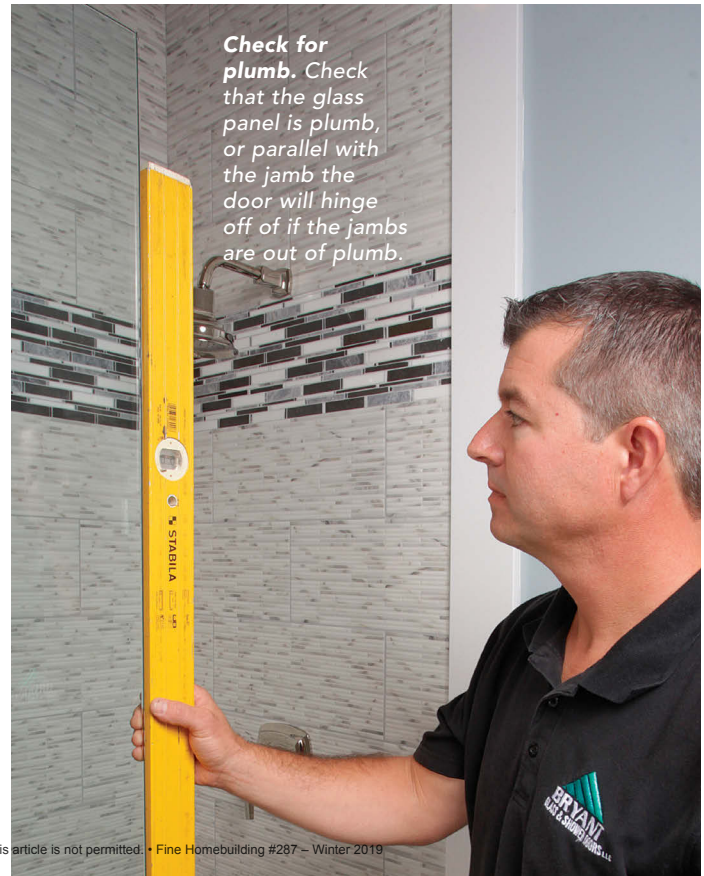
To start the installation, first mock up everything in place. The glass manufacturing process isn't always precise, so I order the glass a little narrow to allow for some adjustability. When walls are out of plumb, the glass can be cut at an angle during fabrication to match the wall's pitch. I don't drill any holes for hardware until I know where everything needs to be for a good fit and even reveals. Fixed panels sit on clear rubber setting blocks that come in various thicknesses to allow for adjustment.

Stop it. *To position the fixed panel, find the center of the threshold, measure back half the thickness of the glass, and stick a stop block near the bottom of the jamb. I use small lengths of U-channel backed with 3M double-sided VHB tape. After setting the bottom block, I level up to set another for the top.*

Set the panel. *Place rubber setting blocks on the threshold, then carefully set the glass panel onto the blocks and tilt it up against the stops.*

Hold it. *Stick a second stop block on the opposite side of the panel near the top to hold it in place while making adjustments and checking the door's fit.*

Adjust and mark. *Adjust the setting blocks as needed—using thicker or thinner blocks to tilt the glass one way or another—for a tight fit against the wall, then use tape to mark clamp cutouts on the jamb and threshold.*

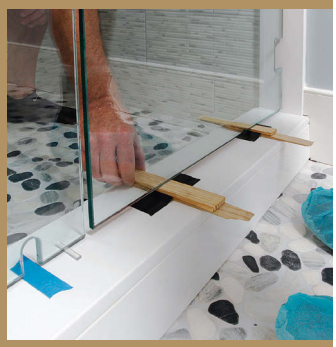


Check for plumb. *Check that the glass panel is plumb, or parallel with the jamb the door will hinge off of if the jambs are out of plumb.*

DRY-FIT THE DOOR

Never set glass on a hard surface. When testing the door's fit and setting it, I tape a set of shims to the threshold so they can't move, then place another set of shims on top of them so I can adjust the door for height and plumb. Setting doors typically requires two people—one inside and one outside the shower.

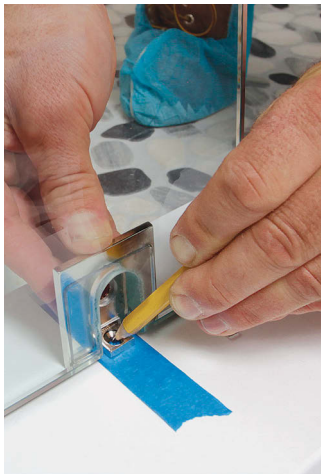
Fit the door. *Place the door next to the fixed panel. Professional suction cups or suction lifters are a must-have for safely lifting and moving heavy pieces of glass.*



Check reveals. *Adjust the shims or setting blocks as necessary to bring the top of the door even with the fixed panel, and to create an even 1/16-in. gap between the door and the fixed panel.*

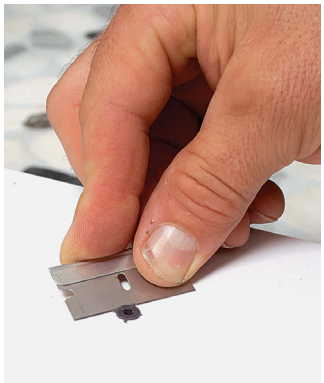
INSTALL THE PANEL

To mount hardware, I typically use a 3/16-in. masonry bit to drill through the tile and backer, and a 1/8-in. twist bit to drill pilot holes into framing. Vacuum or remove dust after drilling, and clean the jamb and threshold with denatured alcohol so the silicone can bond to it. Every screw hole gets a dab of silicone before the hardware is installed.

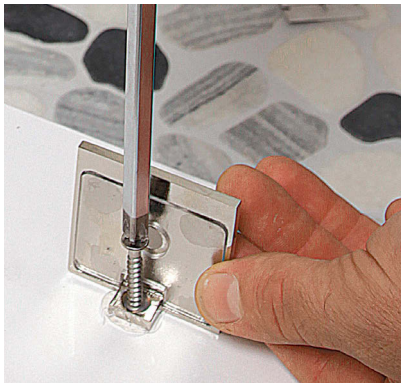


Mark for screws. *Hold the glass clamps in place against their cutouts and mark screw locations on the tape. For large panels, this is a two-person job.*

Drill for hardware. *Remove the panel to a safe location, remove the stops, and drill through the tile and tile backer; then change bits and drill pilot holes into the framing.*



Anchor it. *Install hollow wall anchors in thresholds without solid framing, and trim them flush.*



Fix the clamps. *Apply a dab of mildew-resistant silicone into the hole and fasten the glass clamps. Hand-drive screws to avoid cracking tile.*

for installing this assembly carry over to both simpler and more complex installations.

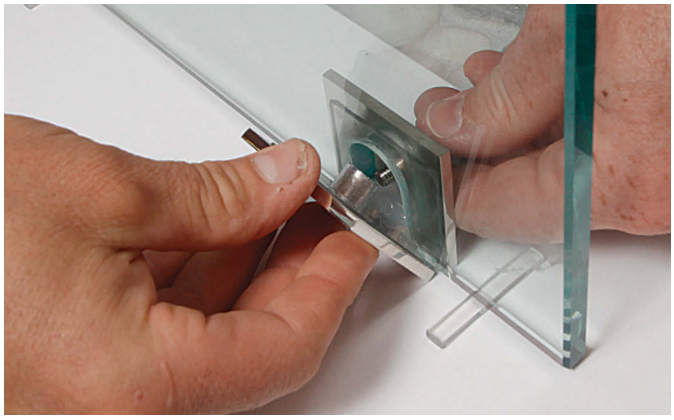
Before installation

One of the most critical steps in the process is ordering the glass, which can't be done until all of the finishes are in—there's too little room for error. I use a level long enough to span the full height of the glass panels to check the walls and jambs. If they're out of plumb, the glass can be cut at an angle to accommodate; I shim the level until it's plumb and note how much it's out top to bottom. But glass can't be scribed to fit a wavy wall. The installation of the shower-pan liner and wall waterproofing often results in the tiles at the bottom of the shower kicking out slightly—this should be avoided if possible.

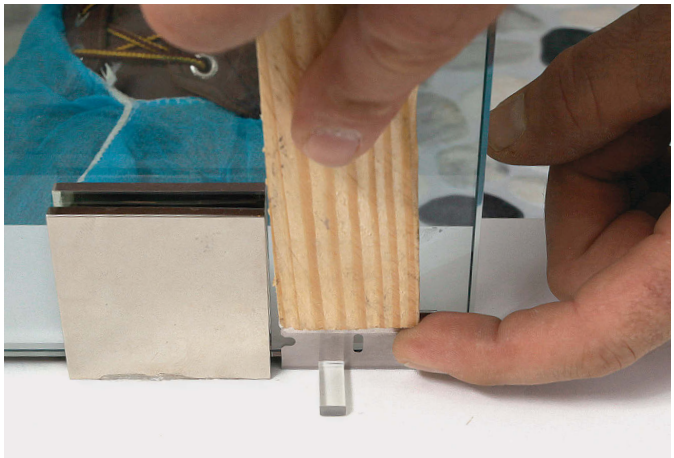
The shower's threshold or curb should pitch slightly—about 1/8 in.—toward the shower. Pitching much steeper than that could make it hard to open or close the door and prohibit the door sweep from sealing against the threshold. The location of addi-

Reposition the glass. *Place the rubber setting blocks in the same configuration determined in the mockup, and set the glass panel in place.*

Apply backup. *For clamps on the threshold, apply extra silicone for backup waterproofing.*



Fasten the face. *With a helper, fasten the faces of the clamps to the outside face of the glass. Again, tighten the screws by hand to prevent damage from over-tightening.*



Trim flush. *Using a shim, push a razor blade to carefully trim the setting blocks flush with the glass inside and out.*

tional hardware, such as towel hooks and bars, should be planned out ahead of time. These pieces shouldn't be mounted where the door can swing into them. Similarly, towel bars and hooks on the shower door shouldn't hit the wall.

When installing glass between two walls or in a shower doorway, I measure in multiple locations in order to find the narrowest spot. Then I deduct from that wall-to-wall measurement to allow for a small gap between the fixed panel and the door, a gap between the door and the wall or jamb, and a small amount of adjustability. Tolerances in the glass fabrication process aren't always spot on, so I want room to adjust things if the panels come out a fraction of an inch larger than ordered. With this particular hardware, I deducted 5⁄16 in. from the overall measurement, but not all hardware is the same. Check your specific hardware for recommended tolerances.

Shower glass typically comes in thicknesses of 3⁄8 in. and 1⁄2 in. Thicker glass is often

INSTALL THE DOOR

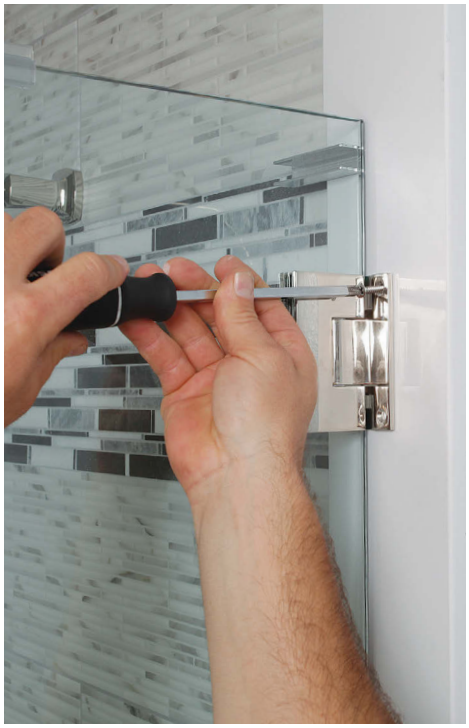
It's important that the face of the door is aligned with the outside face of the fixed panel. When both the door and panel are the same thickness, a piece of door sweep can help hold them in plane. When glass is different thicknesses, I use a modified piece of U-channel to hold the faces flush. I drill the holes for the hinges with the hinges and door in place, and use long drill bits to get the holes as straight as possible.

Position the door. *Adjust the door to its proper height with the shims, then slip a piece of door sweep over the door and the fixed panel to help hold them in plane.*

Clean and fasten. *Clean the glass surface around the hinge locations with denatured alcohol, then, with a helper, install the hinges on the door.*

Check flush. *Double-check that the face of the door is flush with the fixed panel and parallel to the threshold, and adjust as necessary.*

Drill in place. *Affix temporary stops on the jamb on the inside of the door top and bottom, then, starting on the outside, use the holes in the hinges as drill guides.*



Test swing. *Start with one screw in each hinge on the outside to secure them, then drill the remaining holes on the outside leg and fasten them. I install the hinges with 3-in. screws rather than the 2-in. screws they typically come with.*

reserved for large, fixed panels, while doors are usually made of ⅜-in. glass and held with two hinges. Doors are commonly 26 in. wide, though they can go up to 30 in. if heavy-duty hinges are used. Even wider doors are possible if a third hinge is added, though, because the glass tends to have a slight curve (a result of tempering), this extra hinge can result in the door becoming slightly hinge-bound and falling out of adjustment over time. □

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Photos by Matthew Millham.

Move inside. *With the outside legs of the hinges fastened, move into the shower and repeat the process on the inside legs.*

FINISH UP

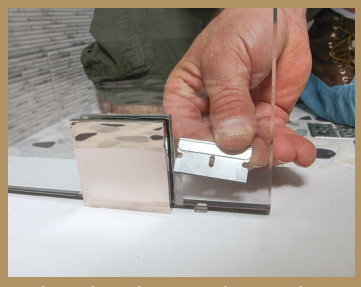
I typically seal the inside surface of the glass with Diamondize XP, a wipe-on, hydrophobic coating that protects the glass—sort of like industrial-grade Rain-X. I'm careful to keep the sealant away from the edges of the glass panel to ensure that the silicone bonds with the glass. The sealant can also be applied after the silicone around the fixed panel has dried, but that would require a return visit and is generally impractical.

Handle carefully. *When ordering glass, make sure to specify cutouts for your specific hardware, including handles. They typically install with a combination of screws and set screws.*

Set the sweep. *Cut the plastic door sweep 1/16 in. shorter than the door's width, file down the sharp edges, and press it up onto the bottom of the door.*

Spray and wipe. *Clean the glass inside and out with glass cleaner, then clean around the perimeter of the fixed panel and glass clamps with denatured alcohol for a good bond with the silicone.*

Seal it. *Apply silicone sealant where the fixed panel abuts the jamb and threshold inside and out.*



Extra seal. *Back up the clamps' seal to the glass on the inside with beads of silicone, then use a razor blade to remove the excess. Wait 24 hours before showering.*