

Frameless shower door design tips

Proper layout key to eliminating installation problems

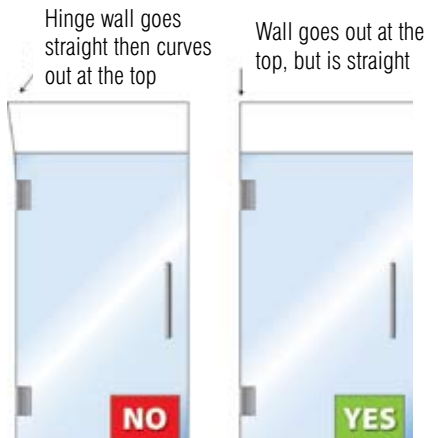
When it comes to installing frameless shower doors, most installation problems are, in reality, design flaws. In the initial design stages, it is important to consider safety issues, as well as other complications that might arise. The following tips, from C.R. Laurence Co., www.crlaurence.com, are in response to customer questions regarding installation and should be considered every time a frameless shower enclosure is designed, according to CRL officials.

Always adhere to the manufacturer's specifications concerning weight and door width capacities when deciding the proper amount of hinges to use on the door.

Don't try to cut corners by stretching the manufacturer's recommendations regarding hardware limitations.

When using wall-mount hinges, put a straight edge on the wall that the hinges will be mounted on.

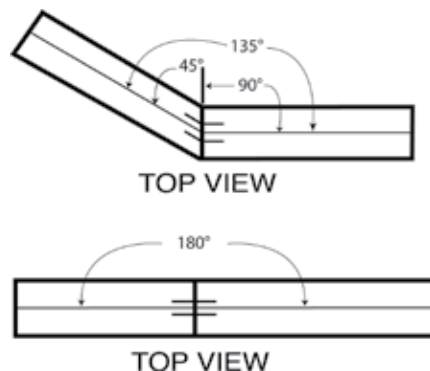
The wall can be out of plumb, but it has to be straight. Hinges operate on a pivot point, and pivot points must align with one another. If they do not—and they are clamped to a heavy piece of glass that does not flex—the glass can slip when the door swings. If the wall is not straight, you can use top and bottom pivot hinges to avoid it completely. Or, you can put a shim plate behind the back plate of the hinge that is closest to the wall, pushing it out so that it aligns with the pivoting point of the other hinge/hinges.



When using wall-mount hinges, make sure that the wall has a wood stud behind it, or the surface substrate is strong/thick enough and secured sufficiently to appropriate screw anchors.

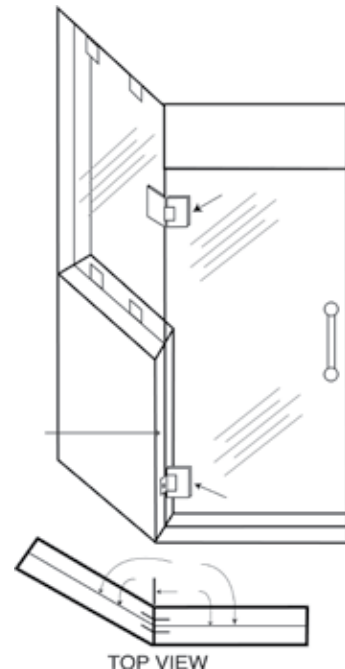
Generally, hinging a door using a combination of wall-mount and glass-to-glass hinges can be done, as long as precautions are taken and certain conditions exist.

CRL offers hinges for use on both 180° and 135° pony walls. These can be used in conjunction with the appropriate glass-to-glass hinge for the angle. To eliminate the need to cut the tile or marble to allow the wall-mount hinge to be recessed, modified wall-mount hinges with a shortened center block and a small mounting plate can be used. These allow the hinge to be mounted to the surface of the tile or marble and to have its pivot point match up with the glass-to-glass hinge pivot point above. Alternatively, top and bottom pivot hinges can be used in this type of situation. They do not require tile alterations and can be mounted in a variety of ways. Top and bottom hinges are also easier to install and reduce glass cutout expense.



For a neo-angle enclosure with a knee wall, standard wall-mount hinges can be used if the knee wall is mitered at a 45° angle. However, if the knee wall has a 90° square-end mounting surface, this will not work.

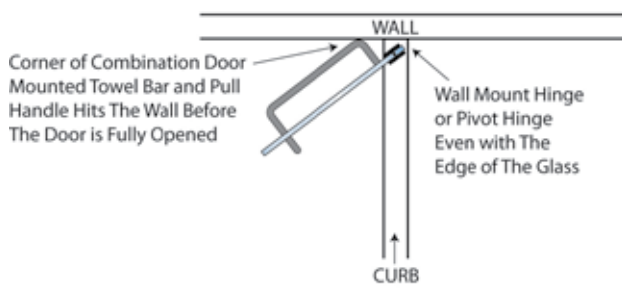
In the latter situation, the only solution is to place at least a 6-inch (152 millimeter) mitered fixed panel next to the wall, and swing the door off of the panel using 180° glass-to-glass hinges. The opening needs to be wide enough to accommodate the fixed panel, plus a satisfactory door width. If the knee wall is on the strike side of the door, simply miter the strike side of the door glass, and everything will match up.



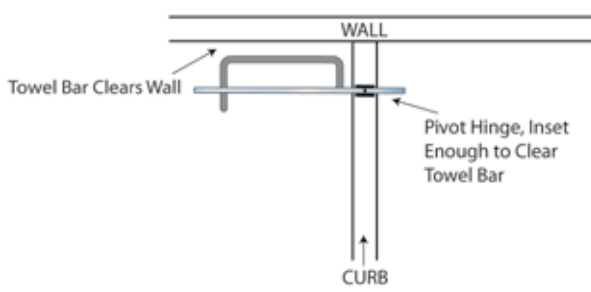
When using wall-mount hinges with a combination towel bar and pull-mount handle on the glass panel, check if the end of the towel bar closest to the hinges will hit the wall before the door opens to its full 90°.

If so, use top and bottom pivot hinges, and inset the hinges far enough from the edge of the glass to allow the pivot to clear the towel bar.

SITUATION: TOWEL BAR HITS WALL BEFORE DOOR IS FULLY OPEN.



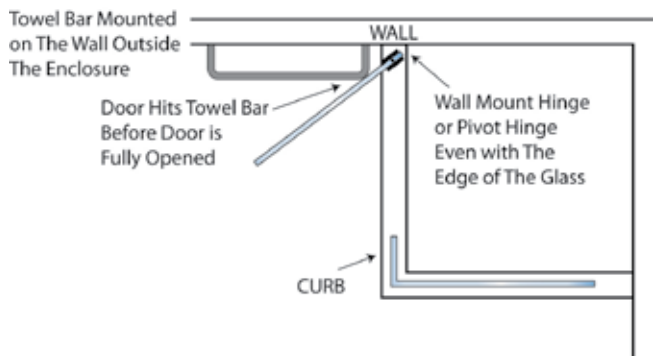
SOLUTION: USE TOP AND BOTTOM PIVOT HINGES. INSET FAR ENOUGH FROM THE EDGE OF THE GLASS TO CLEAR TOWEL BAR.



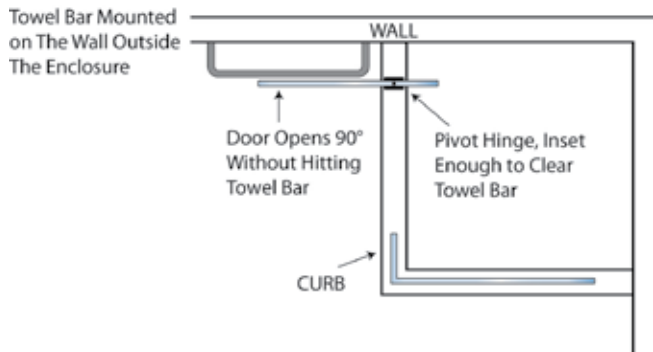
When using wall-mount hinges on a wall with a towel bar, determine whether or not the door will hit that towel bar when it opens to its full 90°.

Otherwise, you restrict access to the shower and have the potential of the door exploding when hitting the towel bar. A possible solution is to use top and bottom hinges, and inset them so that the pivot point projects far enough from the wall to clear the towel bar.

SITUATION: DOOR HITS TOWEL BAR BEFORE OPENING 90°



SOLUTION: USE TOP AND BOTTOM PIVOT HINGES. INSET FROM THE EDGE OF THE GLASS FAR ENOUGH TO CLEAR TOWEL BAR.



If a situation arises where you have to install a frameless shower unit in a tiled or marbled enclosure that has a protruding accent strip located where the glass will go, there are ways to address the problem.

This depends on whether the door is involved or just a fixed panel of glass. If you are mounting a door off a wall with an accent strip, there are two choices: notch the door to match the accent strip profile, or remove some of the accent strip in front and behind the door and replace it with a flat piece of matching tile or marble. Fixed panels of glass that are secured with U-channel down the vertical wall can be installed by notching a groove wide enough to accept the U-channel in the accent strip. On fixed panels installed only at the top and bottom with U-channel or glass clamps, the accent strip can be notched to accept the glass or, the glass can be notched using a contour gauge to copy the profile. Be sure to increase the profile by $\frac{3}{16}$ inch (5 mm) all the way around for clearance. Never position glass clamps in the accent strip area.

If you plan to use a wall-mount hinge, but the wall to be hinged off of is not 90° to the curb, adjustable hinges are a viable alternative.

There are hinges available that have reversible pivot pins or that will accept custom angled pivot pins. Note that in all cases, this affects standard glass size deduction on the hinge side. By using the reversible pivot pin in some hinges, you can alter the closing position by 5° in or out. Custom angled pins ranging from 1° to 45° are also available.

When using glass-to-glass hinges, never use a pivot pin of more than 5°.

The hinge operates off of a pivot point that is inset $\frac{7}{8}$ inch (22 mm) in from the fixed glass panel. As the angle is increased, the portion of the glass behind the pivot point starts to swing out proportionately with the degree of the pin offset, causing the hinge side of the door to not align with the fixed panel. The projection of a 5° pin is usually acceptable. When a glass-to-glass


application requires a greater angle, top and bottom pivot hinges can be used.

Consider the use of top and bottom hinges as part of your design criteria.

These are a solution to many potential design problems. They also offer the customer more of an all-glass look. They are flexible and can be mounted floor and ceiling, floor and header, floor and fixed transom, and several other ways. They also save on the number of cutouts required.

An aluminum shower door threshold should be considered when a flat or out-sloping curb condition exists under the door.

These can be adhered to the curb with silicone under the door and act as a dam, assisting in watershed back into the shower. A bottom wipe can work in conjunction, when positioned above the threshold. If the slope of the floor causes an uneven clearance gap directly under the door, consider using a double-fin wipe that provides flexibility in dealing with uneven clearance gaps.

In the interest of safety, all fixed panels should be supported by mechanical fasteners, such as U-channel or glass clamps. 

This article was provided by the Frameless Shower Door Hardware Division of C.R. Laurence Co., Inc., www.crlaurence.com. For more information, see CRL's Frameless Shower Door Guide, a comprehensive reference manual covering design, proper hardware selection, fabrication and glass sizing.