

Stop Drafts With a Drop-Down Door Seal

This hidden mechanism retracts when the door is open and eliminates the need for a bulky threshold

BY JAY B. LANE

As a custom-door and window installer, I always include weathersealing as part of the job. This final step not only improves comfort and energy performance, but it also shields the home's interior from wind-driven water, insects, and street noise.

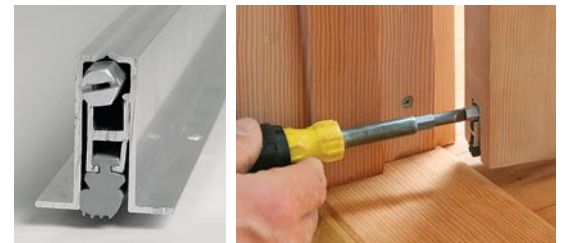
While the weathersealing around the sides and at the top of a door is straightforward, I find that sealing an exterior door at the threshold can be tricky. In most cases, I use an interlocking threshold with a water pan underneath and a rubber silicone bead kerfed into the bottom of the door. However, this approach still leaves a visible metal threshold.

For a seamless transition between interior and exterior spaces, I use an auto-drop threshold seal. It's an adjustable device with a neoprene seal that retracts when the door is opened to allow for a hidden weatherseal. When the door closes, the door jamb depresses a pin on the hinge side of the door. This action engages a leaf spring inside the mechanism, allowing the neoprene seal to drop into place. I use a Pemko automatic door bottom (www.pemko.com) because of its reasonable price (\$35) and its solid assembly.

A hidden auto-drop seal won't work for every door configuration. The stiff aluminum bar crimped to the neoprene bumper needs a fairly flat surface to seal against. Large gouges or dips and undulations in the floor or threshold below the door cause a gap in the seal. Also, the bottom of the door must be within ½ in. of the threshold. If the door needs to pass over a thick rug, the threshold can be built up to allow the bottom of the door to be higher. This seal is not recommended for high-exposure areas, but for a clean, seamless look, nothing works as well. □

Jay B. Lane owns Jack of the Woods Inc., a wood-window- and door-replacement company. Photos by John Ross, except where noted.

Dial in the drop



When the door closes, a spring-loaded pin compresses against the hinge-side door jamb to drop the seal. Depressing the pin releases tension on the spring and allows the seal to drop into place. Turning the pin with a screwdriver adjusts the seal up or down. A screw driven flush to the door jamb contacts the pin and prevents it from creating a depression in the wooden jamb. When the door opens (photo below), the seal retracts.



Inset photo above: Krysta S. Doerfler. Photo top left: Dan Thornton.

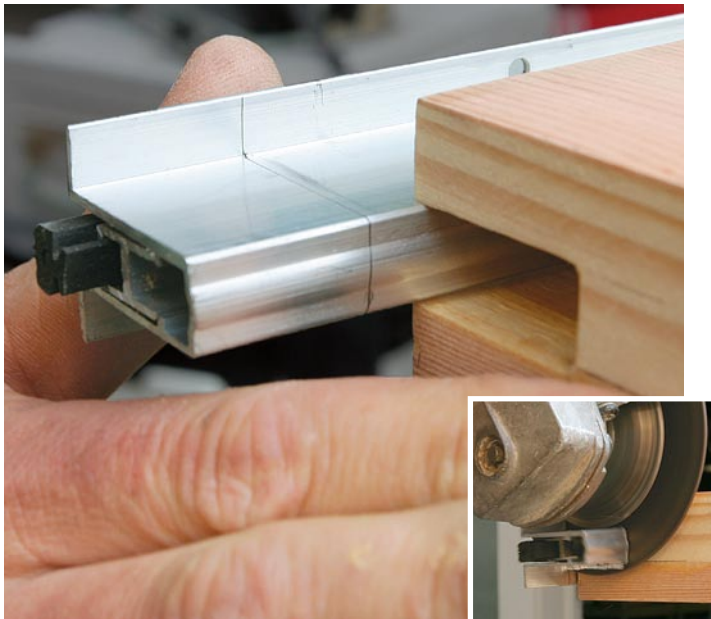
A GROOVE HIDES THE MECHANISM



1 Trim the door bottom. For the weatherseal to operate correctly, the bottom of the door must be no more than $\frac{1}{2}$ in. above the top of the threshold. After marking this dimension on both the hinge and latch sides of the door bottom (inset photo), I trim the door using a circular saw and a straightedge guide. For a review of different guides, check FHB #182, or online at FineHomebuilding.com.



2 Cut the groove with multiple router passes. The Pemko mechanism requires a groove $\frac{3}{16}$ in. wide and $1\frac{1}{16}$ in. deep. After fitting a $\frac{1}{2}$ -in.-dia. bit (www.freud.com) in my router, I attach and adjust a fence to center the groove in the door's bottom edge. Then I rout the groove in multiple passes, increasing the cutting depth $\frac{1}{4}$ in. to $\frac{3}{8}$ in. each time. I widen the groove to $\frac{3}{16}$ in. by adjusting the router fence on the final pass.



3 Cut the seal and housing in one step. After I've checked the mechanism's fit in the groove and scribed it to match the width of the door, I move the scribe line clear of the door's edge and cut the entire mechanism to length with an abrasive grinding blade (a fine-toothed hacksaw will work as well). Note: The neoprene bumper can move laterally inside the housing, so before you cut, make sure its opposite end is flush with the end of the housing.



4 Secure with screws glued in place. After sealing the inside of the groove and the door bottom with polyurethane sealant, I position the mechanism, drill pilot holes, and attach it with screws. I squeeze a small amount of wood glue into each hole before securing each fastener. I secure the bumper by crimping the aluminum bar at one end.

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Look for the Magazine Extras section on our home page to see a video of Jay B. Lane installing weatherstripping in this door opening.