

Three Ways to Weatherstrip a Door

Whether vinyl, silicone or bronze, an airtight seal is your best defense against the weather

by Gary M. Katz

Weatherproofing exterior doors isn't important. It's critical. When wind-driven water finds its way inside a house, it can seep into and stain wood floors, delaminate the plywood underneath the floor and get into vinyl and laminate flooring. Just as bad—or worse—are the invisible air leaks around doors. A weak seal between door and jamb can cost plenty in escaping energy.

This is why weatherstripping is so important. Although weatherstripping an exterior door won't make it seal like a refrigerator, these gasketlike strips will help to keep wind and water where they belong—outside. As usual in the building industry, though, there seems to be a dizzying array of weatherstripping products, at least at first glance. But the subject is fairly black and white—and not just because there are only a few colors to choose from.

I use just three common types of weatherstripping (photos right). All three are easy to install and are usually available at good hardware stores. Most important, all three keep the elements at bay, unlike some of the cheaper stick-on varieties. Unfortunately, no single product is perfect for every door in every home, so knowing the difference makes it easier to choose the right product for your door.

Bronze will beat back a gale—Bronze is the most durable weatherstripping material, and "cushion bronze" or "V-bronze"—a thin strip of bronze folded lengthwise into a "V" and squeezed between the door and jamb—is the best way to get a tight seal. V-bronze—especially when combined with another seal, such as silicone—stops 99% of the water that charges a door. Whether you are remodeling or weatherstripping a new door, V-bronze is hard to beat.

Every miracle cure has side effects, and V-bronze is no exception ("Installing V-bronze weatherstripping," facing page). Some people don't like its traditional look, and V-bronze can be time consuming and finicky to at-

Bronze weathers well



V-bronze is an improvement over flat bronze weatherstripping. It gets squeezed between the door and the jamb, blocking wind and water.

Rigid-jamb seals from the outside



Fastened to the weather side of the door, rigid-jamb weatherstripping is adjustable and easy to install on old jambs.

Kerf-in is the latest twist



Pressed into a thin kerf, or slot, in the jamb, kerf-in vinyl or silicone is often found in new construction.

INSTALLING V-BRONZE WEATHERSTRIPPING . . .



Spring bronze (top) and V-bronze (bottom) by Pemko (800-283-9988).

V-bronze (middle) by Macklanburg-Duncan (800-654-8454).



Miter V-bronze in the corners. To avoid overlap, the V-bronze flaps are cut at 45° angles in the corners. The strips on the side jambs are placed ¼ in. away from the stop. Strips of V-bronze are nailed every 3 in.

V-bronze combined with a kerf-in silicone seal, as shown in these photos, is perhaps the best defense against wind and water. I put V-bronze weatherstripping on openings that are battered by the weather, and then, ironically, I have to make all the gaps around the door larger— $\frac{3}{16}$ in. instead of the usual $\frac{1}{8}$ in. It helps to bevel the top of a door, which reduces friction and prevents moisture from oxidizing into a green mess.

Installing V-bronze is simple: Start by cutting the head (top) piece to fit between the door rabbets. Trim the flap on each end at a slight angle (3° to 5°) so that the flap won't drag after the legs are installed. Place the bronze flush to the doorstop, and nail the head every 3 in., using a punch to set the nails to avoid marring the jamb.

Install the legs (sides) next, but this time, hold the leg back from the stop $\frac{1}{4}$ in. so that the leg flaps won't interfere with the head flaps (photo 1).

(Offsetting the leg and the head also improves the seal at the top



Leave room for the lockset. Strike plates for a dead bolt and latch require narrow V-bronze. Be sure to cut it long for plenty of overlap, and set the nails carefully to avoid marring the bright surface.

... INSTALLING V-BRONZE (CONTINUED)

of the door.) Don't cut the flap too tight at the threshold, though, or it will bind. You can run the V-bronze over the hinge plates, but you'll have to use a narrower strip around the strike plates for dead bolts and latches (photo 2, p. 89).

The bottom corners of a door are the weak spot of any weatherstripping system. To ensure a complete seal at the bottom of the door, nail a corner pad at each end of the threshold (photo 3). Corner pads are available in black and white and cost only a few cents, and they can be used with all types of weatherstripping.

Adjusting V-bronze is easy. Slide a nail set or punch inside the V-shaped flap, and bend the flap until it contacts the door (photo 4). If the flap bends too much, press it down with the heel of the punch. I rub paraffin wax on the bronze, which helps to stop the metal from talking (photo 5).



3 **Corner pads complete the seal.** Corner pads are the best insurance against light and air penetration at the bottom of a door.



5 **Waxed and ready to fight the weather.** Paraffin wax silences the strip and ensures smooth door operation.



4 **Use a nail set to adjust the strip.** For large gaps, sliding a nail set into the crease will force out the flap. To press it back in again, slide the heel of the nail set against the flap.

tach to a door opening. There are lots of little brass nails to drive, you need a separate strip at the lockset, and the stuff is hard to paint around once installed.

To a lot of people, bronze is simply old fashioned and ineffective compared with other seals. But the bronze they are probably thinking of is "spring bronze," which is far less adept at stopping water than V-bronze. Spring bronze is a flat strip of metal crimped slightly at one edge so that it will contact the door when it closes (photo top left, p. 89). The problem with spring bronze is that over time, it loses its spring and flattens out. With V-bronze, weather and light penetration are not a problem.

Rigid-jamb weatherstripping is popular for old doors—Rigid-jamb weatherstripping (also known as "jamb-up" and "adjustable-jamb" weatherstripping) has been widely used since the 1950s and is still installed in many new houses ("Installing rigid-jamb weatherstripping," facing page). It's popular among remodelers, especially in cases where the existing door jambs are not being replaced. This type of weatherstripping is screwed to the outside of the door, making it easy to install on old doors.

Another plus is that rigid-jamb weatherstripping—when installed with screws—is adjustable. The screw holes in the metal retainer are slotted so

that the bulb can be brought closer to or pulled farther from the door. When you're buying rigid-jamb weatherstripping, be sure to look at the fasteners. If the package includes nails, put it back—it won't be adjustable.

Most weatherstripping manufacturers offer rigid-jamb weatherstripping with either a vinyl or a silicone bulb seal, and it is important to make the distinction clear. Vinyl bulb does not have much spring. Unless the vinyl bulb is installed just right—not too close to the door but tight enough to seal—it will pinch on the hinges as the door swings closed. On the lockset side, the vinyl bulb may interfere with the action of the door latch if it is installed too tightly.

Silicone, on the other hand, can be installed closer to the door, producing a tighter seal. Unlike vinyl, silicone doesn't harden over time, and it remembers its original, elastic shape. Another benefit of silicone is that paint doesn't stick to it, at least not for long. All these features are welcome in a product exposed to weather and, every few years, to a paintbrush. The big drawback is that silicone is almost twice as expensive as vinyl, adding about \$10 per opening.

Rigid-jamb weatherstripping is available for metal jambs, too. I frequently use one that comes with two-sided tape on the back. Only a few predrilled slotted holes are machined into a length of this material (instead of one

INSTALLING RIGID-JAMB WEATHERSTRIPPING



Rigid-jamb weatherstripping is widely available. Top and bottom are by Macklanburg-Duncan; middle is by Pemko.



1 Cut rigid jamb with a high-rpm circular saw. A carbide-tipped blade makes short work of rigid-jamb weatherstripping. A hacksaw works, too, but not tin snips. They leave an ugly scar on the metal.

With a hacksaw or high-rpm circular saw, cut the head first to fit tightly across the jamb (photo 1). Then shut the door, throw the dead bolt, and press the weatherstripping against the door until the vinyl or silicone bulb touches. Drive one screw into each end, and move on to the legs.

It doesn't matter which leg of the jamb is weatherstripped first. Measure from the head to the threshold, and leave enough to scribe the bottom of the weatherstripping to a sloped threshold (photo 2). Before installing the legs, crimp the aluminum over the bulb at both ends so that the bulb won't slide around (photo 3).

To fasten the legs, press the bulb lightly against the door, and drive one screw at each end and one in the middle (photo 4). Close the door and check the lock for smooth operation before inserting more screws.



2 Scribe the legs to match the threshold. Weatherstripping on the side jambs usually lands on the sloped portion of the threshold, which means you will need to scribe the pieces to get a tight fit.



3 Crimp the ends to freeze the bulb. The vinyl or silicone bulb—the part that actually seals the door—will slide unless the metal is crimped at the ends.



4 Use screws, not nails. Rigid-jamb weatherstripping is adjustable. Drive screws at the top, middle and bottom; then push the strip in to meet the door before tightening.

KERFING JAMBS FOR SILICONE AND VINYL



Q-LON vinyl-coated foam, by Schlegel (800-586-0354; in New York state, 800-462-1727).

1
Kerf cut with table saw.

Installing kerf-in foam weatherstripping is hard only on your fingertips (photo bottom right, facing page). Cut the head first, square at each end; then cut the legs with a 45° angle at the top so that they cope over the head. The bottoms of the legs should follow the threshold.

I buy my jambs precut and kerfed for foam weatherstripping (photo 1), but sometimes I have to kerf one or two by myself. I use my table saw with a finger board,

positioning the fence so that the blade clears the face of the jamb by 1/8 in. (A thin-kerf blade works best.) Adding a slight angle, about 2° to 3°, minimizes the risk of marring the jamb. You can also buy a router bit that cuts the kerf and extends the rabbet 3/8 in. for products such as Q-LON. (Bosch manufactures a flush-cutting sawblade that mounts into a router for kerfing jambs.)

It's nearly impossible to use foam in old doors without performing major jamb surgery.



Silicone tube seal by Resource Conservation Technology (410-366-1146).

2
Kerf cut with router (see facing page).

Fortunately, another kerf-in material—silicone bead—makes retrofitting old doors a breeze. I often use silicone corner tube seal (photo 2). Both the weatherstripping and a special router base for retrofitting old doorways are available from Resource Conservation Technology (410-366-1146).

The kerfing tool, which attaches to a laminate trimmer, has a base angled at 45° to fit in the corner between the stop and jamb (photo top right, facing page). A bit cuts the angled kerf,

and the weatherstripping is pressed into the slot (photos 3 and 4, facing page).

To kerf a jamb, rest the butt of the router base 12 in. to 16 in. from the end of the jamb; then, slowly plunge the head of the router into the corner between jamb and doorstop. (The angled base makes it easy to hold the tool properly.) Push slowly until the nose of the tool reaches the corner. Then remove the tool, return to the starting point, and finish the rest of the kerf in the opposite direction.

every 8 in. to 10 in. as in standard rigid jamb), and self-tapping sheet-metal screws are included in the package, rather than wood screws.

Kerf-in weatherstripping is now the standard for the industry—

Kerf-in weatherstripping is the most common seal you will find on new doors because it works and because it is easy to install. Kerf-in weatherstripping comes in many shapes, sizes and colors, but they all work the same way: The seal, made of silicone or foam, has a flat fin that holds the seal in a kerf between the stop and jamb, locking it in place.

I use two types of kerf-in weatherstripping: silicone bead and foam. Silicone bead is a good choice for retrofitting an existing jamb because it compresses almost completely when the door is shut, requiring no additional room (you don't have to increase the depth of the stop).

The problem with silicone bead is not the installation so much as its unreliability at stopping wind and water year after year. I recommend it only for doors that are somewhat protected from the weather. I also encounter another problem with white silicone bead: Because it's translucent, people sometimes glimpse daylight between the door and jamb. One way around this problem is to use a darker color.

Like most weatherstripping products, silicone bead comes in a variety of sizes. I've often used three different sizes on warped doors. Each size fits perfectly inside the next larger diameter, so you can produce a nearly seamless bead. Silicone bead is also perfect for arched doors. With a laminate-trimmer kerfing tool, you can follow almost any radius or ellipse, and so will the silicone ("Kerfing jambs for silicone and vinyl," above).

The other kerf-in product I use—Q-LON—is an S-shaped foam seal. Like silicone bead, kerf-in foam is held inside a thin kerf at the corner where the doorstop meets the rabbet. Unlike silicone, products like Q-LON take up a lot of room between the door and the stop, making them a bad choice for retrofitting old doors without performing major surgery on the jambs.

I prefer foam over silicone bead because it works well, it's easy to install on new doors and it rarely interferes with the door's operation. The biggest problem with foam products, however, is that they are clearly visible between the stop and the door, a look some people find distracting. □

Gary M. Katz is a finish carpenter in Los Angeles, California. He is also the author of The Door Hanger's Handbook (The Taunton Press, 1998). Photos by Dean Della Ventura, except where noted.



3

Cut the groove toward the corners. Plunge the router into the corner of the rabbet, and move it slowly toward the top and bottom corners of the jambs. A vacuum hose sucks up stray sawdust.

Just press to fit. Silicone bead and other kerf-in weatherstripping is easy to install. Just cut the corners at a 45° angle, and press the flat fin into the kerf.



A LAMINATE TRIMMER FOR RETROFITTING WEATHERSTRIPPING

Designed for installing kerf-in weatherstripping on existing doors, this kerfing tool has a 45° angled base that slides in the door rabbet and cuts an angled groove for silicone-bead weatherstripping.



4