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FS 673

Weatherstripping and Caulking to Save Energy



Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture



Weatherstripping and Caulking to Save Energy

Air leakage can be a major factor in energy waste created by your home's heating and cooling systems. Even when your home is well-insulated, you can reduce your heating and cooling costs by the weatherstripping and caulking of windows and doors. Besides keeping out moisture, wind and hot or cold air, these energy saving methods will block entry of dust and noise, resulting in a cleaner, quieter home. Both weatherstripping and caulking are easy, economical do-it-yourself jobs.

WEATHERSTRIPPING

Weatherstripping materials are purchased either by the foot or in kits complete with seal and suitable fasteners. If you buy in kit form, be sure the kit is intended for your window type and size. To determine how much weatherstripping you need, measure the total distance around the edges of the moving parts of each window or door.



Install weatherstripping around windows and doors.

CAULKING

Caulking compounds are available in disposable cartridges made for use with a caulking gun. Compounds also are sold in gallon and 5-gallon cans. Some compounds come in rope form which you unwind and force into cracks with your fingers or in squeeze tubes which are ready-made for application. Each of the many different kinds of available caulking compounds is designed for specific uses. Take care to select the right one for the job.

Before applying caulking, clean the area of paint build-up, dirt, or deteriorated caulking with solvent and a putty knife. If you are using a caulking gun, hold the gun at a 45° angle and slant the base of the gun in the direction you are moving.

TOOLS

Besides weatherstripping and caulking compound, you will need these simple tools:

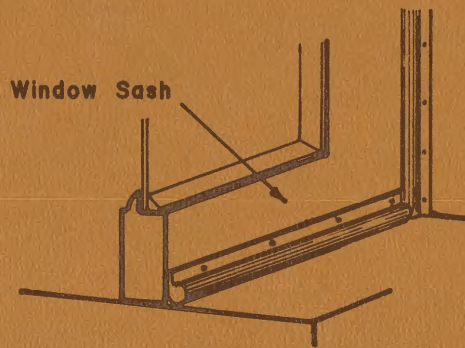
- Hammer and nails
- Scissors or tin snips
- Screwdriver
- Steel measuring tape
- Caulking gun
- Putty knife

The following chart describes the different types of weatherstripping available. Some are surface mounted and are clearly visible, while others are concealed when the door is closed.

TYPE	INSTALLATION AND MATERIALS	ADVANTAGES/DISADVANTAGES
For Around Doors and Windows		
Spring metal strips	These strips are made of aluminum or stainless steel. They are nailed between window sash channels or between the door and jamb, and are easier to install if sold with predrilled holes. These are best suited for double-hung or casement windows.	Cannot be seen when door is closed. Controls drafts. Long life. But: May make door hard to open and close. Easily tampered with.
Rigid strip gaskets	Rigid strip gaskets are made of vinyl attached to a metal strip or a felt-type material glued to a wood strip. Both attach with nails or screws to door and window stops.	Durable. Controls drafts, noise, light, dust, and humidity. But: Visible alongside door.
Pliable gaskets	Flexible gaskets of vinyl, rubber and felt are attached with brads or staples to the door and window stops. Adhesive-backed strips of foam simply stick to the jamb or stop.	Installs in minutes. Doesn't show. Controls drafts, noise, light, dust, and humidity. But: Temporary. Foam soon flattens out and breaks down.



Spring metal strips



Rigid strip gaskets



Pliable gaskets

For Under Doors

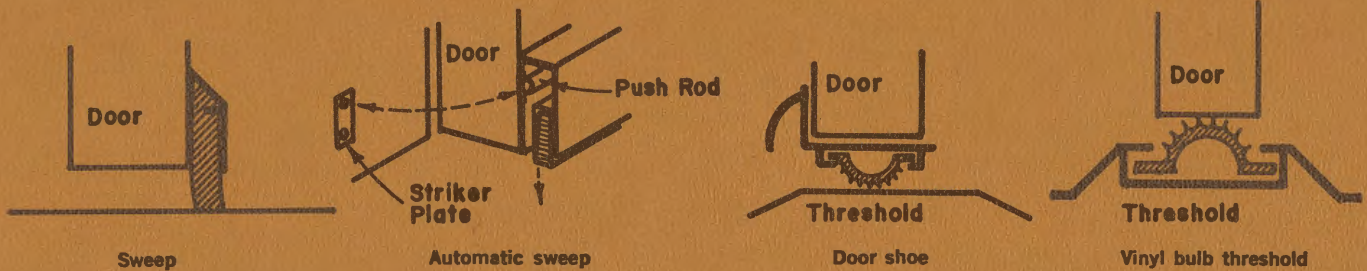
Sweep	Door sweeps are made of aluminum, stainless steel with sponge, or vinyl. They screw into the interior side of an in-swinging door.	Adjustable. Effective. But: Exposed to view. May drag across rugs.
Automatic sweep	Automatic sweeps are made of aluminum, with vinyl, neoprene, or felt drop. They screw onto the outside of an in-swinging door. The door opens and the sweep retracts. The door closes and the striker plate causes the sweep to lower.	Useful where threshold is flat or where there is no threshold. Durable. But: Sweep may not retract quickly enough to pass over the edge of the threshold or the carpet.

Door shoe

Door shoes are made of aluminum with a vinyl insert. They fit over the door bottom and screw into the face.

Effective, durable seal. May be used with threshold that's not worn down in the middle. Usually sold with drip cap that sheds rain. The vinyl insert is replaceable.

But: Bottom of door may require trimming or door threshold may have to be replaced before installation.

**For Threshold****Vinyl bulb threshold**

Vinyl bulb thresholds are made of aluminum and vinyl. They fit under the door. The door bottom should have about 1/8-inch bevel to seal against vinyl bubble. They are available in different heights. Metal caps with built-in angles are also available to fit over the bottom of the door, offering a smooth surface.

Works as combined threshold and weather strip. Useful where there's no threshold or wood one is worn out. Provides good weather seal.

But: With wear, vinyl bubble will flatten out, tear, and lose effectiveness. Replacement bubbles are available.

Basic Types

Caulking compounds are available in five basic types, all of which can be purchased in white, gray, or black.



When caulking with a gun, hold the gun at a 45° angle and slant it in the direction of movement.

1. Oil-base caulking is the most common and will bond to most surfaces. It is not very durable, but it is the lowest in cost.

2. Latex-base, water-thinned caulking is fast-drying and will take paint very well. It will also bond to most surfaces and is more durable, but more expensive, than oil-base caulking.

3. Butyl rubber caulking is long-lasting and is best suited for making metal-to-masonry joints.

4. Polyvinyl acetate caulking is durable and adheres to all surfaces, including paint.

5. Silicone caulking is the most durable of all the compounds and adheres well to all surfaces, with the exception of paint.

CAUTION: Lead-base caulking is not recommended because it is toxic. Many states prohibit its use.

Filler such as oakum, caulking cotton, sponge rubber, and fiberglass is used for extra wide cracks or as a backup for caulking.

Where To Caulk

Apply caulking wherever two different materials or parts of the house meet:

- Between window drip caps (tops of windows) and siding.
- Between door drip caps and siding.
- At joints between window frames and siding.
- At joints between door frames and siding.

- Between window sills and siding.
- At corners formed by siding.
- At sills where wood structure meets the foundation.
- Outside water faucets, or other special breaks in the outside house surface.
- Where pipes and wires penetrate the ceiling below an unheated attic.
- Where chimney or masonry meets siding.
- Around chimney flashing.
- Where storm windows meet the window frames, except for drain holes at window sill.
- Between masonry or concrete parts (steps, porches, etc.) and main part of the house.
- And if you have a heated attic, where the wall meets the eave at the gable ends.

REFERENCES

The Builders Guide to Energy Conservation. National Association of Home Builders of the United States. Washington, D.C., 1974.

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For further information, contact your County Extension Office.

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