

U.S. Department of Energy - Energy Efficiency and Renewable Energy
A Consumer's Guide to Energy Efficiency and Renewable Energy
Weatherstripping

You can use weatherstripping in your home to seal air leaks around movable joints, such as windows or doors.

To determine how much weatherstripping you will need, add the perimeters of all windows and doors to be weatherstripped, then add 5%–10% to accommodate any waste. Also consider that weatherstripping comes in varying depths and widths.

Before applying weatherstripping in an existing home, you need to do the following (if you haven't already):

- Detect air leaks
- Assess your ventilation needs for indoor air quality.

Selection

You need to choose a type of weatherstripping that will withstand the friction, weather, temperature changes, and wear and tear associated with its location. For example, when applied to a door bottom or threshold, weatherstripping could drag on carpet or erode as a result of foot traffic. Weatherstripping in a window sash must accommodate the sliding of panes—up and down, sideways, or out. The weatherstripping you choose should seal well when the door or window is closed while allowing it to open freely.

Choose a product for each specific location. Felt and open-cell foams tend to be inexpensive, susceptible to weather, visible, and inefficient at blocking airflow. However, the ease of applying these materials may make them valuable in low-traffic areas. Vinyl, which is slightly more expensive, holds up well and resists moisture. Metals (bronze, copper, stainless steel, and aluminum) last for years and are affordable. Metal weatherstripping can also provide a nice touch to older homes where vinyl might seem out of place.

You can use more than one type of weatherstripping to seal an irregularly shaped space. Also take durability into account when comparing costs. See Table 1 below for information about the common types of weatherstripping.

Table 1: Common Weatherstripping

Weatherstripping	Best Uses	Cost	Advantages	Disadvantages
<i>Tension seal:</i> Self-stick plastic (vinyl) folded along length in a V-shape or a springy bronze strip (also copper, aluminum, and stainless steel) shaped to bridge a gap. The shape of the material creates a seal by pressing against the sides of a crack to block drafts.	Inside the track of a double-hung or sliding window, top and sides of door.	Moderate; varies with material used.	Durable. Invisible when in place. Very effective. Vinyl is fairly easy to install. Look of bronze works well for older homes.	Surfaces must be flat and smooth for vinyl. Can be difficult to install, as corners must be snug. Bronze must be nailed in place (every three inches or so) so as not to bend or wrinkle. Can increase resistance in opening/closing doors or windows. Self-adhesive vinyl available. Some manufacturers include extra strip for door striker plate.

<p><i>Felt:</i> Plain or reinforced with a flexible metal strip; sold in rolls. Must be stapled, glued, or tacked into place. Seals best if staples are parallel to length of the strip.</p>	<p>Around a door or window (reinforced felt); fitted into a door jamb so the door presses against it.</p>	<p>Low</p>	<p>Easy to install, inexpensive.</p>	<p>Low durability; least effective preventing airflow. Do not use where exposed to moisture or where there is friction or abrasion. All-wool felt is more durable and more expensive. Very visible.</p>
<p><i>Reinforced foam:</i> Closed-cell foam attached to wood or metal strips.</p>	<p>Door or window stops; bottom or top of window sash; bottom of door.</p>	<p>Moderately low</p>	<p>Closed-cell foam an effective sealer; scored well in wind tests. Rigid.</p>	<p>Can be difficult to install; must be sawed, nailed, and painted. Very visible. Manufacturing process produces greenhouse gas emissions.</p>
<p><i>Tape:</i> Nonporous, closed-cell foam, open-cell foam, or EDPM (Ethylene Propylene Diene Monomer) rubber.</p>	<p>Top and bottom of window sash; door frames; attic hatches and inoperable windows. Good for blocking corners and irregular cracks.</p>	<p>Low.</p>	<p>Extremely easy to install. Works well when compressed. Inexpensive. Can be reinforced with staples.</p>	<p>Durability varies with material used, but not especially high for all; use where little wear is expected; visible.</p>
<p><i>Rolled or reinforced vinyl:</i> Pliable or rigid strip gasket (attached to wood or metal strips.)</p>	<p>Door or window stops; top or bottom of window sash; bottom of a door (rigid strip only).</p>	<p>Low to moderate.</p>	<p>Easy installation. Low to moderate cost. Self-adhesive on pliable vinyl may not adhere to metal; some types of rigid strip gaskets provide slot holes to adjust height, increasing durability. Comes in varying colors to help with visibility.</p>	<p>Visible.</p>
<p><i>Door sweep:</i> Aluminum or stainless steel with brush of plastic, vinyl, sponge, or felt.</p>	<p>Bottom of interior side of in-swinging door; bottom of exterior side of exterior-swinging door.</p>	<p>Moderate to high.</p>	<p>Relatively easy to install; many types are adjustable for uneven threshold. Automatically retracting seeps also available, which reduce</p>	<p>Visible. Can drag on carpet. Automatic sweeps are more expensive and can require a small pause once door is unlatched before retracting.</p>

			drag on carpet and increase durability.	
<i>Magnetic:</i> Works similarly to refrigerator gaskets.	Top and sides of doors, double-hung and sliding window channels.	High	Very effective air sealer.	
<i>Tubular rubber and vinyl:</i> Vinyl or sponge rubber tubes with a flange along length to staple or tack into place. Door or window presses against them to form a seal.	Around a door.	Moderate to high.	Effective air barrier.	Self-stick versions challenging to install.
<i>Reinforced silicone:</i> Tubular gasket attached to a metal strip that resembles reinforced tubular vinyl	On a doorjamb or a window stop.	Moderate to high.	Seals well.	Installation can be tricky. Hacksaw required to cut metal; butting corners pose a challenge.
<i>Door shoe:</i> Aluminum face attachment with vinyl C-shaped insert to protect under the door.	To seal space beneath door.	Moderate to high.	On the exterior, product sheds rain. Durable. Can be used with uneven opening. Some door shoes have replaceable vinyl inserts.	Fairly expensive; installation moderately difficult. Door bottom planning possibly required.
<i>Bulb threshold:</i> Vinyl and aluminum	Door thresholds	Moderate to high.	Combination threshold and weatherstrip; available in different heights.	Wears from foot traffic; relatively expensive.
<i>"Frost-brake" threshold:</i> Aluminum or other metal on exterior, wood on interior, with door-bottom seam and vinyl threshold replacement.	To seal beneath a door.	Moderate to high.	The use of different materials means less cold transfer. Effective.	Moderately difficult to install, involves threshold replacement.
<i>Fin seal:</i> Pile weatherstrip with plastic Mylar fin centered in pile.	For aluminum sliding windows and sliding glass doors.	Moderate to high.	Very durable.	Can be difficult to install.
<i>Interlocking metal channels:</i> Enables sash to engage one another	Around door perimeters.	High.	Exceptional weather seal.	Very difficult to install as alignment is critical. To be installed by a

Application

Weatherstripping supplies and techniques range from simple to the technical. Consult the instructions on the weatherstripping package. Here are a few basic guidelines:

- Weatherstripping should be applied to clean, dry surfaces in temperatures above 20°F (-7° C).
- Measure the area to be weatherstripped twice before you cut anything.
- Apply weatherstripping snugly against both surfaces. The material should compress when the window or door is shut.

When weatherstripping doors:

- Choose the appropriate door sweeps and thresholds for the bottom of the doors.
- Weatherstrip the entire door jamb.
- Apply one continuous strip along each side.
- Make sure the weatherstripping meets tightly at the corners.
- Use a thickness that causes the weatherstripping to tightly press between the door and the door jamb when the door closes, without making it difficult to shut.

For air sealing windows, apply weatherstripping between the sash and the frame. The weatherstripping shouldn't interfere with the operation of the window.