

## Caulking and Weatherstripping

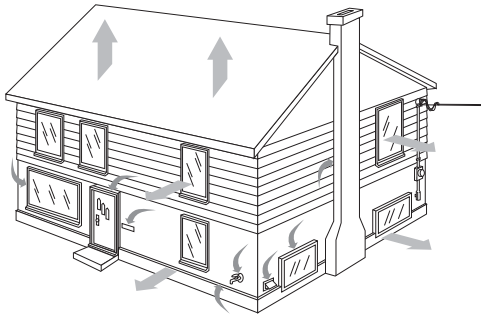
Air leaks alone can account for 10 to 25 percent of a home's heat loss. That's why experts recommend that the first step toward substantial home energy savings is stopping the leaks.

Putting insulation in your home comes later. First, you have to button up your home's overcoat. You can do this by caulking, weatherstripping, and sealing.

The first part of this important job is finding the leaks. You'll have to be a detective because some of the most important leaks are hidden, but your work can pay off in significant energy savings.

It's vital that you seal your home from the *inside*. Sealing prevents moisture from being trapped in wall cavities.

The *outside* should be caulked for rain and run-off, but should be more breathable than the inside to allow water vapor to escape from inside the walls to the outdoors.



### ***Heat leaks out at upper levels of the home and from openings near doors, windows, and other spots.***

Here are some of the most common places inside your home where energy-robbing leaks develop:

- Window, door, and baseboard moldings. (Hint: Look here first. This is where one-third of a home's heat loss usually occurs!) Put your hand next to gaps around windows and doors and feel for moving air, or hold an incense or a piece of tissue near the gaps and watch for fluttering. Doors should open and close with slight resistance but without binding.
- Plumbing penetrations through insulated floors and ceilings.
- Fireplace openings and dampers.

- Attic access hatches.
- Recessed lights and fans in insulated ceilings.
- Missing plaster.
- Electrical outlets and switches, especially on exterior walls. (This is simple to fix: Just remove the faceplate, add a foam gasket, and replace the plate.)
- Dropped ceilings or soffits above bathtubs and cabinets.
- Wiring penetrations through insulated floors, ceilings, and walls.
- Chimney penetrations through insulated floors and ceilings and exterior walls.
- The tops of interior partition walls where they intersect with the attic space.
- Along the sill plate and band joist at the top of foundation walls.
- Floors extending beyond the foundation wall.
- Kneewalls in finished attics, especially at access doors and built-in cabinets and bureaus.

Now that you've found the leaks, it's time to close them. The product you should use to seal them depends on their size and where they are.

We'll start with caulks.

Caulk is best for cracks and gaps less than a quarter-inch wide. Caulk may be applied where two surfaces meet but don't move, such as at window and door trims.

The caulk's label will tell you if the caulk is suitable for the material to be sealed. If the caulked joint will be visible, choose a caulk you can paint or one that is the right color.

Look for a caulk that will remain flexible for 20 to 25 years. Generally, avoid the cheapest caulks because they generally don't hold up well. The most often recommended caulk for sealing your home from the inside is a clear siliconized acrylic. Where greatest flexibility and longest life is needed, such as on the outside, you can choose a pure silicone.

- Tubular—core filled, hollow, or hollow on an attachment strip.
- Strips—spring-loaded metal, on pile attachments, magnetic.

When working with caulk in a tube, you apply the caulk by placing its tube in your caulking gun (the handiest and least expensive item in this whole project) and cutting the end of the caulk tube off to the size of the bead you need. Start with the smallest bead possible. Then apply the caulk to the gap or crack you're working on and fill it completely by squeezing the handle of the gun and pushing the tip of the caulk tube at a 45-degree angle to the crack. After a few squeezes of the trigger and just a few minutes' work, you've become a home energy saver!



Other caulks come in rope or ribbon form. You press them like clay into a crack. Some are removable; others are permanent. These options aren't as long-lasting but do seal well.

Expanding or non-expanding foam sealants are excellent materials for larger cracks and holes not exposed to sun and moisture, though this caulk can be messy and takes some practice to learn how much to use.

Backer rod or crack filler is a flexible, closed-cell material, usually in long coils and from a quarter-inch to an inch in diameter. Use it for large cracks and to provide a backing in deep cracks that you'll seal later with caulk from a gun.

For your largest heat-robbing openings, such as attic hatch covers and plumbing "chases," you can use rigid foam insulation caulked in place or fiberglass. Fiberglass works best if wrapped in plastic or stuffed in plastic bags because air can leak through unsealed fiberglass. Don't use plastic in places where it gets extremely hot. Always wear goggles, gloves and a dust mask (available in hardware stores) when working with fiberglass.

To seal around chimneys and flue pipes, you may need specialized materials such as metal flashing or high-temperature silicone sealants.

Now let's move to weather-stripping.

Weatherstripping consists of ... yes ... strips of metal, foam or vinyl that make a weatherproof barrier between the frame of windows and doors and their parts that move.

As a general rule, you caulk where parts don't move and weatherstrip where two surfaces meet but must be opened and closed.

Weatherstripping can be:

- Tape—cloth or plastic.
- Gaskets—felt, adhesive foam, adhesive rubber, or foam on an attachment strip.
- Tubular—core filled, hollow, or hollow on an attachment strip.
- Strips—spring-loaded metal, on pile attachments, magnetic.