

ESCAPE ROUTES: Where Heat Is Fleeing Your House

Is your house feeling a little drafty now that the winter weather has arrived? The U.S. Department of Energy estimates that you can reduce your heating and cooling needs up to 30 percent just by properly insulating and weatherizing your

home. You haven't missed your chance to weatherproof, says Ed Copenhaver, manager of Frager's Hardware on Capitol Hill. Here are some simple preventive measures you can take inside your home to make it more comfortable and energy-efficient.

☉ Trouble Spots

The average house — even when well-insulated — contains cracks and gaps between building materials that can add up to a hole about 14 inches square.

Attic holes: Holes to accommodate pipes, ducts and vents can release a tremendous amount of heat and should be sealed with a general-purpose caulk or foam spray.

Air leakage from ducts
15%

Access hatches: A ceiling opening from the living area into an unheated attic can be a place for heat loss. The edges should be weatherstripped, and the backside of the attic door insulated.

Percentage of air leakage from ceilings, walls and floors in a typical home
31%

Fireplace dampers: Missing or poorly fitting dampers allow air to move freely up and down the chimney. To test the damper's seal, close the flue, light a small piece of paper and watch the smoke. If the smoke goes up the flue, there's an air leak.

Air leakage from a fireplace
14%

Air conditioners: Window units should be removed during winter. If they can't be removed, the area around the unit should be sealed with removable rope caulk. An window insulation blanket can reduce air infiltration.

Electric outlets: Cold air can seep through the sockets. Installing foam gaskets on all switches and outlets will help minimize this effect.

Air leakage from electrical outlets
2%

Basement: Holes to accommodate laundry ducts and vents or plumbing pipes can be big sources of heat loss and need to be reduced with expanding foam.

Air leakage from fans and vents
4%

Recessed lights, wiring and plumbing in insulated ceilings can result in heat loss. High-temperature, flexible caulk can be used to fill gaps.

Air leakage from plumbing penetrations
13%

Windows and doors: Air leaks through gaps around windows and doors typically are a major source of heat loss. Weatherstripping and using indoor caulk can make a noticeable difference in drafts.

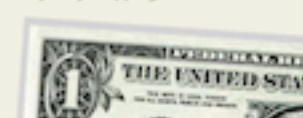
Air leakage from windows
10%

From doors
11%

A 1/8-inch gap under a 36-inch-wide exterior door may seem insignificant, but it will let as much cold air into your home as a 2.4-inch-diameter hole punched in the wall.

DOLLAR TEST

With your weatherstripping in place, test for air gaps with a dollar bill. Just close a door or window with the dollar positioned across the weatherstrip. If the dollar falls out, the gap is too large; if you can't pull it out, the weatherstrip is fine and is doing its job by stopping air infiltration.



How Does Your Home Measure Up?

The Alliance to Save Energy offers an interactive Home Energy Checkup that provides instant feedback (www.ase.org), and the U.S. Department of Energy (www.eere.energy.gov/consumer) offers interactive Web tools. Many local electric and gas utilities offer energy audits or can refer you to private sources for those services.

Weatherstripping Options

Weatherstripping — a narrow piece of metal, vinyl, rubber, felt or foam — prevents air infiltration around windows and doors by sealing gaps between the frames and moving parts when they are closed. Weatherstripping comes by the foot or in kits at any hardware or home improvement store.

Before You Begin

- Determine the amount you need: Measure the sides of all the windows and doors to be weatherstripped. Add about 5% to 10% for waste.
- Be sure to clean and prepare the surface.

SPRING TENSION SEAL
Folded strips of brass, aluminum, steel or bronze, nailed in place.

Uses: High-traffic doors, inside the track of a double-hung or sliding window, top and sides of door.



Advantages: Reliable and permanent. Invisible in place.

Disadvantages: Surfaces must be flat and smooth. Can be difficult to install. Must be nailed in place (every three inches or so) to prevent bending or wrinkling.

FELT

Plain or reinforced with a flexible metal strip. Must be stapled, glued or tacked into place.

Uses: Frame above upper window, sill below lower window, across lock rail. Can be applied to doorstop molding across top and down latch side.



Advantages: Easy to install. Inexpensive.

Disadvantages: Low durability. Least effective at preventing airflow. Do not use where exposed to moisture or where there is friction or abrasion. All-wool felt more durable and more expensive. Very visible.

FOAM TAPE

Rubber foam that comes in various sizes, with an adhesive backing on one side.

Uses: Top and bottom of window sash, door frames, attic hatches, non-operable windows. Good for blocking corners and irregular cracks.



Advantages: Extremely easy to install. Works well when compressed. Inexpensive. Self-adhesive may not adhere well in cold weather. Can be reinforced with staples.

Disadvantages: Durability varies with material used, but not especially high for most types. Use where little wear is expected.

QUICK AND EASY

ROPE CAULK is 1/4" to 1/2" thick and can be pushed into gaps with fingers or a putty knife.

SEAL 'N PEEL: Removable clear weatherstrip caulk provides a watertight and weatherproof seal on windows. Seals out drafts and moisture. Peels away easily when removal is desired. Won't damage painted surfaces.

EXPANDING FOAMS: Ideal for sealing gaps more than 1/4" wide. Comes in aerosol cans and cures quickly. For use around plumbing fixtures, electrical outlets, baseboards, sill plates, exhaust vents and other areas. Not removable.

REINFORCED VINYL

Pliable or rigid strip gasket attached to wood, plastic or metal strips.

Uses: Door or window stops, top or bottom of window sash, across lock rail.



Advantages: Easy installation. Low to moderate cost. Some types of rigid strip gaskets provide slot holes to adjust height, increasing durability. Comes in varying colors to help with visibility.

Disadvantages: Visible. Self-adhesive on pliable vinyl may not adhere well to metal or during cold weather.

DOOR SWEEP

Aluminum or stainless steel with a brush of plastic, vinyl, sponge or felt.

Uses: Bottom of interior side of in-swinging door, bottom of exterior side of out-swinging door.



Advantages: Relatively easy to install. Many types adjustable for uneven threshold.

Disadvantages: Visible. Can drag on carpet.