



**Fixing air leaks in your home is one of the easiest and cheapest ways to increase comfort and save energy.**

## Green Building

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The energy lost through air leaks in the average home is equivalent to leaving a window wide open all winter long. Relying on air leaks to provide ventilation is not a smart strategy because it cannot be controlled and may allow mold or dirty air to enter a home and cause health problems. The best strategy is to reduce air leakage as much as possible and provide controlled ventilation. Fortunately, sealing air leaks in your home is one of the easiest and most cost-effective ways to increase comfort and energy efficiency and improve your home's durability.



## How to find Air Leaks

Air leaks around windows and doors are the most noticeable, however, the most significant air leaks are usually hidden in the attic and basement. A few simple tests can help you detect most air leaks in your home. Finding and fixing leaks in the attic or basement can be more difficult, especially if they are under your insulation, but you can fix those yourself. You can also hire a professional to find the less obvious leaks.

### *Do it Yourself*

An easy way to locate outside air leaks in your home is with a stick of incense. You can also use a smoke pencil that is designed for this very purpose. On a cool, breezy day, turn off your furnace and shut all windows and doors. Turn on all exhaust fans that blow air outside, such as bathroom fans or stove vents. Light an incense stick, blow it out, and pass it around areas that are likely to have leaks: windows, doors, light fixtures, heating ducts, areas where plumbing and wiring go through walls (under the sink, electrical outlets, switches, etc.), mail chutes, attic doors, vents and fans, and fireplace and woodstove dampers. Wherever the smoke is sucked out of or blown into the room, there's a leak. If you don't want to turn off your furnace, you can just turn on all your exhaust fans to depressurize your home.

You can also ask someone to watch from outside as you shine a flashlight at night over potential gaps. The light will shine through large cracks (not the best way to find small leaks). Another low-tech way to find leaks is to shut a window or door on a piece of paper. If you can pull the paper out without tearing it, you're losing energy.

### *Hire a Pro*

If you don't want to do it yourself or you want to be more thorough, you can hire a qualified technician to conduct an energy audit and perform diagnostic tests to find leaks, such as a blower-door test. A complete energy audit will also help determine areas in your home that need more insulation.

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## Fixing Air Leaks

Once you have identified where the air leaks are, you can seal them up. Following are some tips on fixing common leaks:

**Windows & Doors:** Use exterior silicone caulk to fill small cracks (1/4 inch or less). Use foam sealant around larger gaps (1/4 inch to 3 inches). Weatherstripping and door sweeps will fix door leaks quickly and easily. Replacing existing door bottoms and thresholds with ones that have pliable sealing gaskets is a great way to eliminate air leaking out from underneath doors.

**Outlets and Switches:** You can easily install foam gaskets behind outlet and switch plates on walls. You can find these gaskets at your local hardware store.

**Holes in Cabinets:** Seal air leaks and holes where plumbing pipes run through walls or cabinetry. Look inside wall-mounted cabinets for plumbing pipe holes or air gaps at the back. Fill these completely with spray foam, leaving no gaps. Be sure to wear protective gloves and use a damp rag for cleanup.

**Fireplace:** When the fireplace is not in use, keep the flue damper tightly closed. Over time, fireplace flues can warp or break, allowing air to flow out the chimney. You can insert an inflatable chimney balloon under your fireplace flue when you're not using your fireplace. These balloons are made from several layers of durable plastic and can be removed easily and reused. If you forget to remove the balloon before making a fire, the balloon is designed to deflate within seconds of coming into contact with heat.

**Kitchen exhaust:** Fan covers can keep air from leaking in when the exhaust fan is not in use. The covers typically attach via magnets for easy replacement.

**Attic and basement:** Fixing air leaks in the attic and basement is important but can be more challenging. EnergyStar created this guide to help you seal these leaks yourself:

[http://www.energystar.gov/ia/partners/publications/pubdocs/DIY\\_Guide\\_May\\_2008.pdf](http://www.energystar.gov/ia/partners/publications/pubdocs/DIY_Guide_May_2008.pdf)



## Tax Credits

Some of these improvements may be eligible for tax credits under the 2009 American Recovery and Reinvestment Act (ARRA). For weatherization, materials only are eligible for 30 percent of the cost up to a cap of \$1,500 per home, through 2010. You will need to submit receipts for materials and manufacturer's certifications (available from suppliers) with your tax documents.

For more information, visit: [http://energytaxincentives.org/consumers/insulation\\_etc.php](http://energytaxincentives.org/consumers/insulation_etc.php)

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## For More Information:

- If you're an EWEB customer, ask if they have done an energy audit of your home: 541-685-7000.
- Video: [www.bchydro.com/guides\\_tips/green-your-home/heating\\_guide/draft\\_proof\\_your\\_home.html](http://www.bchydro.com/guides_tips/green-your-home/heating_guide/draft_proof_your_home.html)
- Video: [www.howcast.com/videos/95356-How-To-Fix-Air-Leaks-in-Your-Home](http://www.howcast.com/videos/95356-How-To-Fix-Air-Leaks-in-Your-Home)
- EnergyStar guide: [www.energystar.gov/ia/partners/publications/pubdocs/DIY\\_Guide\\_May\\_2008.pdf](http://www.energystar.gov/ia/partners/publications/pubdocs/DIY_Guide_May_2008.pdf)
- Energy Trust of Oregon Program: <http://energytrust.org/residential/incentives/Weatherization/AirSealing>

City of Eugene **Waste Prevention & Green Building Program**

*Promoting sustainable practices in waste prevention and the built environment*