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Air Sealing and More Energy Efficient Homes

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No matter how solid your house, you undoubtedly have a few nooks and crannies through which air is seeping, adding to your utility bills. Checking your home for air leaks and sealing those leaks with caulking, weather stripping, or more efficient materials will make your home much more energy efficient, lowering your demand for energy resources and your monthly energy bill. Our Hearts guide to sealing air leaks to shrink your carbon footprint has all the basics to get you started.

Quick Facts: the Costs of a Leaky Home

- 20% increase energy usage: Total energy usage goes up by 10% and heating and cooling energy usage by 20% with air leaks.[i]
- \$160 more in heating and cooling costs: Americans spend over \$241 billion each year on energy for their homes, with the average house spending \$2,100 annually (\$800 on heating and cooling).[ii] Air sealing your home could reduce heating and cooling costs by \$160.

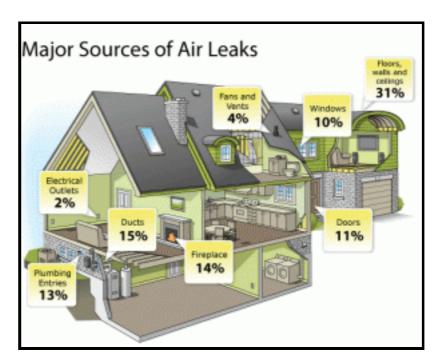
More Quick Facts: Where and How Much Heat Your Home

Loses

- 31% via floors, walls, and ceilings: Over time, cracks can form on your home's exterior, and air can seep through paint or carpet to escape.
- 21% via windows and doors: Air leaks can often be found around window and door frames or through single-paned glass
- 15% via ducts: Holes created for ductwork are often larger than necessary, leaving room for air to escape.
- 14% via fireplace: When the flue of your fireplace is open, warm air can easily escape.
- 13% via plumbing penetrations: Plumbing holes allow air to easily escape if t not properly sealed around the installation.
- 6% via fans, vents, and electrical outlets: These areas together account for the remaining 6% of heat lost.

Take Action! Seal Your Home from Air Leaks and Save Energy

- 1. Ask for a home energy audit: Hire a professional technician to perform a home energy audit to check for air leaks. If you don't want to hire a professional, you can conduct a self-audit by performing a careful walk-through of your home's interior and exterior to check for leaks (see US Department of Energy for guidance).
- 2. **Detect air leaks**: Performing a visual inspection can help you detect many air leaks in your home. Check for gaps, cracks, or deteriorating caulk around electrical outlets, doors and windows, attic hatches, vents and fans, electrical service entrances, and baseboards. If a visual check doesn't yield results, perform a basic building pressurization test by holding a smoke pen or incense stick near common leak sites to see if the smoke wavers (see Department of Energy for instructions).
- 3. Seal your home: This is an inexpensive way to seal your home from air leaks. Caulking is typically used for cracks or small openings around door or window frames. Weather stripping is used to seal moveable components, such as the bottoms of doors or windows. See the US Department of Energy's graphic on common air sealing trouble spots. Just be sure to choose certified low-VOC products with logos such as LEED – Leadership in Energy and Environmental Design, Green Certified by NAHB – National Association of Homebuilders, GREENGUARD Environmental Institute, or EcoLogo.
- 4. Increase insulation levels: Insulation provides airflow resistance and increases the thermal resistance level to lower heating and cooling costs.
- 5. **Upgrade windows and doors**: Improve the efficiency of your windows and doors by selecting new ones or upgrading your existing ones. New energy efficient windows and doors have special coatings and interior layers that help to block airflow.



Dig Deeper: Sealing for Home Energy Efficiency



- Check out ENERGY STAR's Home Improvement website detailing the benefits of increasing your home's energy efficiency.

 Image via Flickr: Chris Landreth
- References
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