

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

When creating an energy-efficient, airtight home through air sealing techniques, it's very important to consider ventilation. Unless properly ventilated, an airtight home can seal in indoor air pollutants. Ventilation also helps control moisture—another important consideration for a healthy, energy-efficient home.

Purpose of Ventilation

Your home needs ventilation—the exchange of indoor air with outdoor air—to reduce indoor pollutants, moisture, and odors. Contaminants such as formaldehyde, volatile organic compounds, and radon can accumulate in poorly ventilated homes, causing health problems. Excess moisture in a home can generate high humidity levels. High humidity levels can lead to mold growth and structural damage to your home.

To ensure adequate ventilation, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) says that a home's living area should be ventilated at a rate of 0.35 air changes per hour or 15 cubic feet per person per minute, whichever is greater.

Ventilation Strategies

There are three basic ventilation strategies:

- **Natural ventilation**
Uncontrolled air movement into a home through cracks, small holes, and vents, such as windows and doors. Not recommended for tightly sealed homes.
- **Whole-house ventilation**
Controlled air movement using one or more fans and duct systems.
- **Spot ventilation**
Controlled air movement using localized exhaust fans to quickly remove pollutants and moisture at their source. Typically used in conjunction with one of the other strategies.