

# Take Control & Save<sup>®</sup>

A Cooperative Effort for Energy Efficiency

[www.TakeControlAndSave.coop](http://www.TakeControlAndSave.coop)

## Seal and insulate your ductwork to save

### Out of sight, but not out of mind

If your house has a forced-air heating and cooling system, you may be losing money and can't even see it! Probably one of the least thought of but most important systems in your home, your duct system, is a branching network of tubes in the walls, floors and ceilings, and carries the air from your furnace and central air conditioner to each room. Since the only things you typically see of this system are the vent covers in your floor or ceiling, you may never think about its efficiency. However, if these ducts are poorly sealed or insulated they are likely contributing to higher energy bills. In a typical house, about 20 percent of the air that moves through the duct system is lost due to leaks, holes and poorly sealed ducts.<sup>1</sup>

Sealing ducts is even more important if the ducts are in an unconditioned space such as an attic or vented crawlspace. Heated or cooled air can be forced out of the ducts and lost, and unconditioned air can be drawn into return ducts through unsealed joints.



*Since vent covers are typically the only things you see of your duct system, you can't see if the system is leaking air.*



*Sealing leaky ductwork can provide many benefits in your home.*

### Benefits of duct sealing

A well-designed, properly sealed duct system can save energy and money, and make your home more comfortable, healthy and safe.

#### **Save energy and money**

Ducts that leak heated air into unheated spaces can add hundreds of dollars a year to your heating and cooling bills.<sup>2</sup> Sealing and insulating ducts increases efficiency, lowers your energy bills and can often pay for itself in energy savings.

#### **Comfort**

Sealing and insulating ducts can help with common comfort problems, such as rooms that are too hot in the summer or too cold in the winter.

#### **Indoor air quality**

Sealing ducts can help improve indoor air quality by reducing the risk of pollutants entering ducts and circulating through your home.

#### **Safety**

During normal operation, gas appliances release combustion gases (like carbon monoxide) through their ventilation systems. Leaky ductwork in your heating and cooling system may cause "back drafting," where these gases are drawn back into the living space, rather than expelled to the outdoors. Sealing leaks can minimize this risk.

<sup>1</sup>Energy Star; [www.energystar.gov](http://www.energystar.gov)

<sup>2</sup>U.S. Department of Energy, [www.energy.gov](http://www.energy.gov)

## Do-it-yourself improvements

If your ducts are easily accessible, you may be able to make some improvements on your own. Check if ducts have become disconnected and reconnect them. You can check the duct connections for leaks by turning on your heating and cooling system fan. Seal the duct joints if you feel air leaking around them. Avoid cloth-backed, rubber adhesive duct tape as it tends to fail quickly. Instead use mastic, butyl, foil or other heat-approved tape that carries the Underwriters Laboratories (UL) logo. Use foam or mastic to seal vent gaps where ducts penetrate the floors, walls or ceiling. Ducts located in an attic or crawl space should be insulated. Seal the ducts first, then add an insulation jacket or insulation material.

To stay safe, install a carbon monoxide (CO) alarm to alert you of harmful CO levels if you have a fuel-burning furnace, stove or other appliance, or an attached garage.

## Hiring a contractor to seal your ducts

If your ducts aren't easily accessible, hire a contractor to help seal, insulate and repair them. Most heating and cooling contractors also repair ductwork. Look for a licensed contractor who will:

- Inspect the whole duct system, including the attic and crawlspace.
- Evaluate the system's supply and return air balance.
- Repair damaged and disconnected ducts, and straighten flexible ducts that are tangled or crushed.
- Seal all leaks and connections with code-approved duct sealants.
- Seal all registers and grills tightly to the ducts.
- Insulate ducts in unconditioned areas with duct insulation that carries an R-value of 6 or higher. *Be aware this will affect the temperature in these unconditioned spaces since air will not escape from the ducts.*
- Ensure there is no back drafting of gas or oil burning appliances and conduct a combustion safety test after ducts are sealed.
- Include a new filter and re-evaluate the duct system air flow when the project is finished to be sure all leaks are sealed.

## Take Control & Save!

Ensure your ducts are properly sealed to stay warmer in the winter and cooler in the summer, use less fuel and reduce your utility bills.

To learn more about how to save energy and money in your home, contact the energy advisor at your local electric cooperative or visit the [www.TakeControlAndSave.coop](http://www.TakeControlAndSave.coop) site.

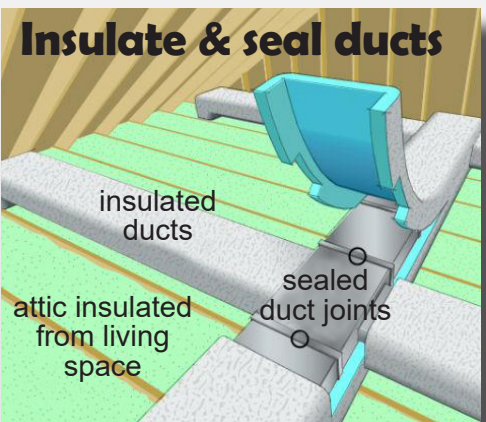
## Signs of poor ducts

Since ducts are often concealed in walls, ceilings, attics and basements, actually seeing if they have holes and leaks can be difficult. Some signs which indicate your home has poorly performing ducts include:

- You have high summer and winter utility bills
- You have rooms that are difficult to heat and cool
- You have stuffy rooms that never seem to feel comfortable
- Your ducts are located in an attic, crawlspace or the garage
- You find tangled or kinked flexible ducts in your system

### Quick tip:

***Insulate your ducts AND your basement if both are not. Your basement can end up colder if you only insulate your ducts.***



*The unsealed ducts in your attic and crawlspaces lose air, and uninsulated ducts lose heat -- wasting energy and money.*