



# HVAC DUCT WORK

Seal and insulate  
for energy savings

Your home's duct system, a branching network of tubes in the walls, floors and ceilings, carries the air from your home's furnace and central air conditioner to each room. Ducts are made of sheet metal, fiber glass, or other materials. A well-designed, sealed and insulated duct system will improve your system's ability to consistently cool and heat every room in your home.

Unfortunately, many duct systems are poorly insulated or not insulated properly. Insulating ducts that are in unconditioned spaces (spaces within your home that are not heated or cooled, such as the attic or the crawlspace under the house) is usually very cost-effective. If you are buying a new duct system, consider one that comes with insulation already installed.

Although minor duct repairs are easy to accomplish, ducts in unconditioned spaces should be sealed and insulated by qualified professionals using the appropriate sealing materials. The EPA recommends using a professional contractor for duct improvements.

Your contractor should be particularly careful to seal all return leaks near the furnace. These can be dangerous because they create a vacuum that can pull combustion gases down. Seal these leaks first. This potential problem is another good reason to have your ducts seen by a professional, who should have measuring equipment to test for possible safety problems.

Here are a few tips to help with minor duct repairs:

- Check your ducts for air leaks. Look for sections that should be joined but have separated and then look for obvious holes.
- If you use duct tape to repair and seal your ducts, look for tape with the Underwriters Laboratories (UL) logo to avoid tape that degrades, cracks and loses its bond with age. Better yet, choose mastic, metal tape or an aerosol-based sealant. Duct tape will not last.
- Include a new filter as part of any duct system improvements.

## New duct systems

Since even well-sealed and insulated ducts will leak and lose some heat, many new energy-efficient homes place the duct system within the conditioned space of the home. The simplest way to accomplish this is to hide the ducts in dropped ceilings and in corners of rooms. Ducts can also be located in a sealed and insulated chase extending into the attic or built into raised floors.



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## Sources

John Krigger, Saturn Resource Management. [www.srmi.biz](http://www.srmi.biz). Author of numerous energy efficiency books including "Surviving the Seasons and Residential Energy: Cost Savings and Comfort for Existing Buildings."

U.S. Dept. of Energy, Energy Efficiency and Renewable Energy, [www.eere.energy.gov](http://www.eere.energy.gov)

U.S. Environmental Protection Agency, [www.epa.gov](http://www.epa.gov)