

# Performance Test

Save money and your health—seal your home's envelope

by Howard Katzman

**W**hen the Milewskys moved into their Atlanta home late in 2004, they noticed hot and cold spots throughout the house. They both suffered from nasal congestion and sinus infections and were aggravated by high dust levels in the house. To counter the dust problem, they contacted a Home Performance with ENERGY STAR contractor. The contractor conducted a careful assessment, including diagnostic testing, on their home. The inspection and testing found significant leakage in the ductwork and in the house itself.

The Milewskys hired the contractor to perform the retrofit work, which included fixing holes in the ductwork “big enough to put your arm in” and holes in the attic floor. The results were dramatic. The hot and cold spots are gone; their sinuses have improved. Tom Milewsky notes that “there is very little dust in the house.” As an unintended bonus, the Milewskys report that last summer’s electric bills

Photo courtesy of Southface Energy Institute



Using duct mastic helps seal ductwork, which is the most cost-effective improvement for energy savings.

“**The energy and air quality penalties are especially harsh when the ductwork is located in the attic or crawlspace.**”

are approximately 50 percent less than the previous year’s cooler summer.

Mike Williamson’s experience was similar. He suspected the heating and cooling system in his 14-year-old Atlanta home needed replacement. This prompted him to call a Home Performance with ENERGY STAR contractor for an assessment and quote. He was impressed that the contractor was the only one he called out to the house that took the time to really understand his issues and concerns, which were hot and cold spots, excessive dust and electric bills that were 20 to 30 percent higher than his neighbors.

The contractor replaced his cooling equipment, sealed the ductwork and air sealed the house. The duct leakage

## TIPS FOR BEATING High Heating Bills

While hiring a Home Performance with ENERGY STAR contractor is your best bet to hold down utility costs while improving indoor air quality and comfort, here are some cost-effective tips for the do-it-yourselfer.

**Seal holes in your ceiling.** Air leaks at the top of the house are the most important. Begin by installing a gasket and latches on your attic stairs. Many homes have chases, or shafts, connecting the attic with floors below. From the attic side, seal these openings with plywood or rigid foam sheathing, and caulk. Use expanding foam to seal around plumbing vent pipes where they enter the attic. Look for dark streaks in insulation throughout the attic as a telltale sign of a concealed air leak (insulation does not stop air leakage).

**Even out the attic insulation.** Loose insulation typically gets moved around by workmen or critters. Eliminate cold spots by spreading the insulation

## TIPS FOR BEATING High Heating Bills

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as evenly as possible. If you have the money, add insulation to R-30, but only after sealing all the holes in the ceiling.

**Seal holes at the “bottom” of the house.** For unheated basements and crawl spaces, weather-strip the door at the top of the stairs and seal holes and gaps in the floor around plumbing pipes, drains, ducts and vents. In heated basements, seal holes and gaps in the foundation wall and caulk the joints where the foundation meets the wood structure.


**Wrap your water heater** with an insulation blanket available in home improvement stores. Carefully follow directions for gas water heaters. Insulate the first 2-4 feet of both water lines.

**Replace showerheads** with low-flow models. They are vastly improved over earlier models. You'll use less hot water as a result.

**Set back your thermostat.** Lower the thermostat in the heating season when you're sleeping and when you are out of the house. The more you lower it, the greater your savings. (In the summer, raise the thermostat to do the same thing.)

was reduced 86 percent, producing a comfortable home with much less dust. Cooling bills were slightly lower for last summer compared to the previous year (which was cooler), but he expects his winter heating bills to show a greater reduction.

The key to the success of Home Performance with ENERGY STAR is the whole-house approach to diagnosing problems. Home Performance with ENERGY STAR contractors have more “tools” than the typical contractor and can offer solutions appropriate to the problems they find. In a home assessment, contractors will carefully check the home for missing or inadequate insulation, gaps or holes in the building shell, and possible combustion safety problems. They also check the duct system for adequate flow or the extent of leakage. The contractor also assesses moisture and condensation issues at the foundation and throughout the house. Recommendations for improvements are prioritized based on cost-effectiveness. Contractors offer proposals to perform some or all of the work.

Southface Energy Institute manages the Home Performance with ENERGY STAR program for metro Atlanta. This includes conducting trainings, mentoring contractors in the field, and performing quality control by checking assessments and completed projects. For more information and a list of contractors, visit [www.southface.org](http://www.southface.org). 

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