

The Gift that Keeps On Giving

Home energy makeover helps reduce energy bills throughout the year

Darin Zurliene, owner of Spray Insulation & Contracting, Inc., uses an infrared camera to detect leaky areas along the perimeter of the house. "This particular reading showed a cold spot at the intersection between the ceiling and the wall, which is a common problem in a lot of homes," he says.



Just a few months after receiving a home energy makeover, Southwestern Electric Cooperative members Sam and Judy Stuemke are already noticing a big difference.

“We’ve definitely seen an improvement in our home’s energy-efficiency,” remarks Sam Stuemke. “We don’t feel nearly as much of a draft, particularly in the bathroom. Plus on really cold days, we’re able to keep the thermostat set three degrees lower than we would have before.”

The Altamont couple won an energy-efficiency package valued at approximately \$2,500 by entering a drawing at Southwestern Electric’s 2009 Annual Meeting. The energy-efficiency tests and upgrades were performed by Bartelso, Ill.-based Spray Insulation & Contracting, Inc.

“The package we gave away is actually worth a whole lot more than its installation value,” points out John Winter, director of residential programs and technical services for Southwestern Electric. “That’s because a more airtight home costs less to heat and cool throughout the year.”

The Stuemkes were kind enough to allow *The Southwestern* to document the home energy makeover so their fellow co-op members can learn how to achieve similar energy savings in their homes with a few do-it-yourself projects.

There are numerous resources available to help you conduct your own home energy makeover, and Southwestern Electric Cooperative can help you get started. For more information, contact our Technical Service Department at (800) 637-8667.

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The home energy makeover began with a blower door test. “We use a negative air pressure setting, which simulates 15-20 MPH winds pulling air out the door. The higher-pressure outside air then flows in through any unsealed openings,” says Zurliene. “Then we measure the exchange in cubic feet of air per minute to determine how airtight the home is.” The initial blower door test measured 1435 cubic feet per minute (CFM) of air exchanges.



The Stuemkes had expressed concerns about a cold spot along the bathroom floor, and (using the infrared camera) Zurliene discovered that the band joist underneath that section of floor was not insulated.



An insufficient amount of insulation in the attic was contributing to the Stuemkes' home energy problems. "They started with about 3½ to 4 inches of insulation, which is about one-fourth of what they should have up there," says Zurliene.



Zurliene shows Stan Stuemke a sample attic hatch with insulation and weather-stripping to block air leaks from entering a home's living space.



To address the cold spot in the bathroom, Zurliene sprayed foam insulation into the 1½-inch gap from below.

Did You Know?

According to the U.S. Department of Energy, weatherization reduces heating bills by an average of 32 percent and overall energy bills by about \$350.



Spray Insulation & Contracting is a certified dealer of Nu-Wool premium cellulose insulation. For more information, visit www.sprayinsulationinc.com or call (618) 765-2375.



Dave Hall, a Spray Insulation & Contracting employee, installs high-density, loose-fill cellulose insulation in the attic. Their product is effective at resisting heat and cold ranging from -21 to 121 degrees Fahrenheit.



The view attic after sufficient insulation had been installed. "The U.S. Department of Energy recommends insulating to an R-49 value, which with our product, translates to a thickness of 15 inches," explains Zurliene. "You can see quite a difference in elevation from what it looked like before."



"Light switch and outlet receptacles are notorious spots for air leaks," says Zurliene. "So we applied foam sealant behind the outlet and switch boxes."



The contractors applied caulk around the edges of exhaust fans to reduce the air flow coming in from the attic.



Air leaks are also common in recessed can lights. These fixtures had additional openings for screws, which Spray Insulation employees closed off with heat-resistant metal tape. "Heat radiating off the light bulb creates what we call a 'chimney effect' where hot air is forced out of the screw holes and replaced by unconditioned air from the attic," explains Zurliene.



The blower door reading after Spray Insulation had completed its work showed an air exchange of 1,130 CFM, a reduction of more than 20 percent in air infiltration.