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U.S. Environmental
Protection Agency

Seal and Insulate with ENERGY STAR®





WHY SEAL AND INSULATE

Sealing and insulating the "envelope" or "shell" of your home—its outer walls, ceiling, windows, doors, and floors—is often the most cost effective way to improve energy efficiency and comfort. A knowledgeable homeowner or skilled contractor can save up to 20% on heating and cooling costs (or up to 10% on total annual energy bills) by sealing and insulating.



To Seal and Insulate with ENERGY STAR:

- **Seal air leaks** throughout the home to stop drafts,
- **Add insulation** to block heat loss in winter and heat gain in summer, and
- **Choose ENERGY STAR** qualified windows when replacing.

Effective air sealing, combined with the right amount of insulation, can make your home more comfortable and cut heating and cooling costs by up to 20%.

BENEFITS

- **Lower utility bills**, because your home uses less energy;
- **Improved comfort**, especially the summer and winter months;
- **A quieter home**, with less noise from outside;
- **Fewer holes** for pollen, dust, and insects to enter your home and affect indoor air quality; and
- **Improved home durability**, from reduced movement of moist air through the home envelope.



WHAT IS ENERGY STAR®?

ENERGY STAR is the government-backed program that helps us all to save money and protect our environment with energy-efficient products and practices. Whether you are looking to replace old appliances, remodel your home, or buy a new house, ENERGY STAR can help.

More than 50 kinds of products, including lighting, appliances, televisions, computers, heating and cooling equipment, and even new homes, can earn the government's ENERGY STAR label. ENERGY STAR also offers best practice solutions, like sealing and insulating your home, that can improve comfort and reduce energy costs.

HELP PROTECT THE ENVIRONMENT

Did you know that the average home produces twice the greenhouse gases as the average car? In fact, 15 percent of all greenhouse gases are generated from the energy used in houses nationwide.

Energy used in our homes often comes from the burning of fossil fuels at power plants, which contributes to smog, acid rain, and global warming. Simply put, the less energy we use in our homes, the less air pollution we generate.



For more information on Seal and Insulate with ENERGY STAR, visit www.energystar.gov or call 1-888-STAR-YES (1-888-782-7937)

IMPROVING YOUR HOME ENVELOPE

The exterior of your home—the outer walls, ceiling, windows and floor—is called the "envelope" or "shell." Improving the envelope by sealing and insulating can make your home more comfortable, especially under extremely hot or cold conditions, and help lower your energy bills.

If you add up all the hidden air leaks in your home, they can equal a hole the size of an open window—and can lead to higher energy bills.

HIDDEN AIR LEAKS

Many air leaks and drafts are easy to find because they are easy to feel — like those around windows and doors. But holes hidden in attics, basements, and crawlspaces are usually bigger problems. These air leaks can make your home uncomfortable, waste energy, and cost you money on your utility bills.

Different types of products can be used to address different types of air leaks:

- Caulk, spray foam, and weather stripping can be used to seal smaller leaks;
- Plywood, drywall, and rigid foam insulation can be used to plug larger holes; and
- Sheet metal and high-temperature caulk should be used to close gaps around chimneys and furnace flues.

After air sealing, be sure to have a professional check your home's ventilation and test combustion appliances to be sure they are properly venting.

INSULATION

Insulation helps keep your home warm in the winter and cool in the summer. There are several common types of insulation—fiberglass (in both batt and blown forms), cellulose, rigid foam board, and spray foam. Reflective insulation (or radiant barrier) is another insulating product which can help save energy in hot, sunny climates. When correctly installed with air sealing, each type of insulation can deliver comfort and lower energy bills, especially during the hottest and coldest times of the year.

COMMON AIR LEAKS



Insulation performance is measured by R-value—its ability to resist heat flow. Higher R-values mean more insulating power. Different R-values are recommended for walls, attics, basements and crawlspaces, depending on your area of the country.

Because insulation works best when air is not moving through or around it, it is important to seal air leaks before installing insulation to ensure that you get the best performance.

For optimal performance, be sure to seal air leaks first before adding insulation.

ENERGY STAR QUALIFIED WINDOWS

Windows are an important part of your home's envelope. If you are replacing windows as part of a home improvement project, choose ENERGY STAR qualified models, which can save you energy and money, increase the comfort of your home, and protect your valuable possessions from sun damage. Also look for ENERGY STAR qualified door and skylights when remodeling.

HOW TO GET STARTED

If your attic is accessible and you like home improvement projects, check out the ENERGY STAR Do-It-Yourself Guide, available at energystar.gov. The Guide offers step-by-step instructions for sealing common air leaks and adding insulation to the attic.

For more a comprehensive approach, you can also hire a contractor who can use special diagnostic tools to pinpoint and seal the hidden air leaks in your home. Talk to local insulating companies or home energy professionals to find out if they offer these services.

A well-sealed and insulated home envelope (shown here in orange) improves energy efficiency and comfort, while lowering utility bills and helping to protect the environment





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