

Improved Home Insulation Helps a Heat Pump Perform Better

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Summary

Are you considering upgrading your home's heating and cooling system to an ENERGY STAR certified heat pump? That's a great choice! Heat pump HVAC that has earned the ENERGY STAR label is super-efficient. It keeps your home comfortable in summer and winter because it can heat and cool.

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But, to get the most out of your new high-performance heat pump, think beyond the equipment you might install and consider the space you are trying to heat and cool. As it turns out, other factors affect your system's performance and overall efficiency, such as your home's insulation.

By improving the insulation in your home, the new heat pump won't need to work as hard to regulate temperatures- which helps make your home more comfortable while reducing energy usage and increasing your savings. Adding to or enhancing your insulation levels may also allow you to choose a smaller, less expensive heat pump!

The attic is the best place to start improving the insulation levels in your home.

In the winter, warm air in your home rises like a hot air balloon. If there are holes in the attic floor and low insulation levels, that warm air will rise right out of the top of the house. Sealing air leaks and adding insulation in the attic can hold that warm air in and insulate from the cold outdoor air.

In summer, the sun beats down on the roof, overheating the air in the attic. The attic temperature can rise to 140° F, radiating heat into the home. Adding a good amount of insulation in the attic prevents that heat from getting into the house, which increases comfort and reduces cooling costs.

Since attics are often unfinished, insulation is typically easy and inexpensive to add there. In many homes, first sealing air leaks in the attic and insulating the attic floor is the best place to improve the home envelope cost-effectively.

Insulate your ducts for improved performance.

Since airflow is essential to the HVAC system, improving ductwork when installing a new system is common sense. If you install a central heat pump (for forced-air heating/cooling), you may have ducts that run into the attic. In Southern climates, where houses are built over crawl spaces or on slabs, ducts in the attic are common. The problem with ducts in the attic is that they are often poorly installed, under-insulated, or worn out. They can also get stepped on or ripped if you use the attic for storage. Sealing, straightening, reconnecting, and repairing holes in ducts can significantly improve the performance of the heating and cooling system. Adding insulation around the ducts that run through hot attics can also improve performance and energy savings.

Current financial incentives make it worth doing both!

There may never be a better time or reason to do these things together, with incentives to help pay for each part of the project.

Government incentives are currently available for high-performance heat pump installations and sealing and insulating attic floors and the ducts in your attic. Incentives include [Federal income tax credits](#) of up to \$2,000 for a heat pump and \$1,200 for insulation. Many local utilities also offer [rebates](#) for these improvements.

Learn more about upgrading your home!

Upgrading your heating and cooling system and improving your attic insulation are two elements of an ENERGY STAR Home Upgrade - a set of six high-impact improvements designed to work together to deliver significant energy and cost savings. You can learn more about heat pumps, attic sealing, and insulation via the [ENERGY STAR Home UpgradeTool](#).