

From the Agent

I introduced criteria of a Florida Water StarSM home in the last edition of WET. In this month's edition, we will look at an ENERGY STAR qualified home. To earn the ENERGY STAR rating, a home must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency (EPA). Homes achieve this level of performance through a complete package of building science measures including: (a) a complete thermal enclosure system, (b) a complete heating and cooling system, and (c) energy-efficient lighting and appliances. To ensure that a home meet ENERGY STAR guidelines, third-party verification by a certified Home Energy Rater is required. This rater works closely with the builder throughout the construction process to help determine the needed energy-saving equipment and construction techniques and conduct required on-site diagnostic testing and inspection. The existing home may not qualify for the title of ENERGY STAR, but the guidelines still apply for an energy efficient home. I hope you find the information helpful. Thanks for reading the WET. As always, you can also find more updated information on water and energy on the WET Facebook page (www.facebook.com/marionwet).

ENERGY STAR was introduced by the U.S. Environmental Protection Agency in 1992 as a market-based partnership to reduce greenhouse gas emissions through energy efficiency.



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A Complete Thermal Enclosure System

A complete thermal enclosure means that comprehensive air sealing, properly installed insulation, and high-performance windows work together to enhance comfort, improve durability, reduce maintenance costs, and lower monthly utility bills.

- ◆ **Air Sealing.** A typical home contains a half-mile of cracks and gaps behind walls and around windows and doors, along with dozens of holes for pipes, vents, ducts, lighting, and wiring. One great example of this is around windows, where ENERGY STAR certified homes feature caulk or foam to seal the space between the window frame and the adjacent wall framing. This is a detail that is commonly missing in many other homes and can have a real impact on your comfort and utility bills.
- ◆ **Reduced thermal bridging.** Walls in homes are typically built with wood studs, which support the weight of the floors and roof above, help the home stand up to wind, and generally act as the structural “bones” of the home. ENERGY STAR certified home uses one of five strategies, such as adding a continuous layer of rigid foam or minimizing excess wood studs, to minimize thermal bridging in walls.
- ◆ **Properly installed insulation.** It's not just the amount of insulation; it's the quality of installation that makes all the difference. Proper installation includes careful placement to eliminate gaps, voids, and compression; complete air barriers that prevent air from bypassing the insulation; and building techniques that minimize heat flow through framing. This ensures consistent temperatures throughout the house, reduced energy use, and increased comfort. Insulation includes fiberglass bats, dense-packed cellulose, sprayed foam, and rigid foam sheets.

By using less energy for heating, cooling, and water heating, ENERGY STAR certified homes deliver approximately 20% savings on annual utility bills. Over the 7 to 8 years that a typical family lives in a home, you can save thousands of dollars in maintenance cost. carpets and furnishings.



Figure 1. Misaligned (Left) and Fully Aligned (Right) Insulation

A Complete Thermal Enclosure System

High-efficiency systems are engineered and installed to deliver more comfort, better moisture control, improved indoor air quality, and quieter operation.

- ◆ **Efficient Heating and Cooling Equipment.** ENERGY STAR certified homes typically include high-efficiency HVAC equipment that uses less energy and operates at reduced noise levels, helping you save on utility bills and maintenance costs.
- ◆ **Proper Design and Quality Installation Practices.** Trained HVAC professionals design and install the heating and cooling systems in ENERGY STAR certified homes in accordance with best practices established by the leading industry association and equipment manufacturers. Proper sizing of equipment and ductwork is essential to achieving optimum performance and comfort. Homes with oversized systems may not be as comfortable due to frequent on/off cycling, which can cause large temperature swings and lead to poor humidity control. Incorrect sizing can also put stress on system components and shorten the equipment's life.
- ◆ **Whole-House Mechanical Ventilation.** The living space in ENERGY STAR certified homes has a constant source of filtered air to reduce indoor air pollutants in your home. Premium air filters (rated MERV-6 or higher) are used so you can breathe easier knowing that outside air and indoor return air are filtered to help reduce dust, allergens, and other airborne pollutants. These filters are located to allow for easy routine maintenance.

Sealing air ducts is an important step in the installation process. In a typical house, about 20 percent of the air moving through the duct system is lost due to leaks, holes, and poor connections.



Figure 2. Improper (Left) and Proper (Right) Insulated Ducts

Energy-Efficient Lighting and Appliances

The lighting and appliances come with two prices: the purchase price and the operation and maintenance cost. ENERGY STAR certified lighting, appliances, and fans can help to reduce monthly utility bills, while providing high-quality performance.

- ◆ **Advanced Lighting.** ENERGY STAR certified fixtures and bulbs come in many shapes and sizes. This gives home buyers a wide range of lighting choices that allow them to create the atmosphere they want for their homes. ENERGY STAR lighting offers significant cost savings and longer lifetimes than standard products.
- ◆ **ENERGY STAR Certified Appliances.** Household appliances account for nearly 20 percent of energy use in an average house. A comprehensive package of ENERGY STAR certified appliances can reduce energy costs, while offering improved performance, quality, and durability. ENERGY STAR certified homes often include ENERGY STAR certified dishwashers, refrigerators, washing machines, ceiling fans, and ventilation fans.

For more information about efficient lighting and appliances, please click [here](#) or visit ENERGY STAR website.

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