



Building the Energy Star Home

A primer for homebuilders

Homes that earn the ENERGY STAR label must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. ENERGY STAR qualified homes are at least 15 percent more energy efficient than homes built to the 2004 International Residential Code (IRC), and include additional energy-saving features that typically make them 20–30% more efficient than standard homes built here in Colorado.

At its core the program's performance path requires five things:

1. A Home Energy Rating (HERS) Index Score of ≤ 85 points (80 points in colder climates) must be confirmed by an energy rater. The HERS Index score quantifies the energy efficiency of the house on a 0-500 point scale. Like a golf score, lower is better, so a lower score translates to a more efficient house. Each point on the scale is equivalent to 1% of energy use in a house, and a score of 100 is benchmarked as equal to the 2004 IECC. A score of 85 points is a 15% improvement over code.
2. A Manual J heat-load calculation must be performed on the house to properly size the home's heating and cooling equipment. The intent here is to avoid the costly practice of over-sizing equipment that has often occurred in the past.
3. The house must include at least one Energy Star qualified piece of equipment. In many cases, a sealed-combustion $\geq 90\%$ AFUE furnace or Energy Star qualified windows are selected because these components are also needed to reach the HERS target. Lighting fixtures, appliances, and ceiling fans satisfy the requirement, as well.
4. Duct leakage to the outside of the home's thermal envelope cannot exceed 6 CFM per 100 square feet of conditioned floor area. Although all duct leakage is detrimental to the performance of a house, ducts located in unconditioned crawlspaces, attics, and in floor systems that are not filled with blown insulation are held to a high standard by Energy Star, and should be either avoided, minimized or meticulously sealed.
5. Compliance with the Thermal Bypass Checklist. The goal of the Thermal Bypass Checklist is to ensure (during a rough insulation inspection) that the thermal barrier and the air barriers of the house are in alignment with each other. This is often the most challenging aspect of complying with the Energy Star program, but the learning curve can be short and the real-world performance impacts are significant.

EnergyLogic offers training and consulting for every aspect of the Energy Star compliance process, and works with builders and trade partners in jurisdictions across Colorado. Please contact us if we can be of service to you.