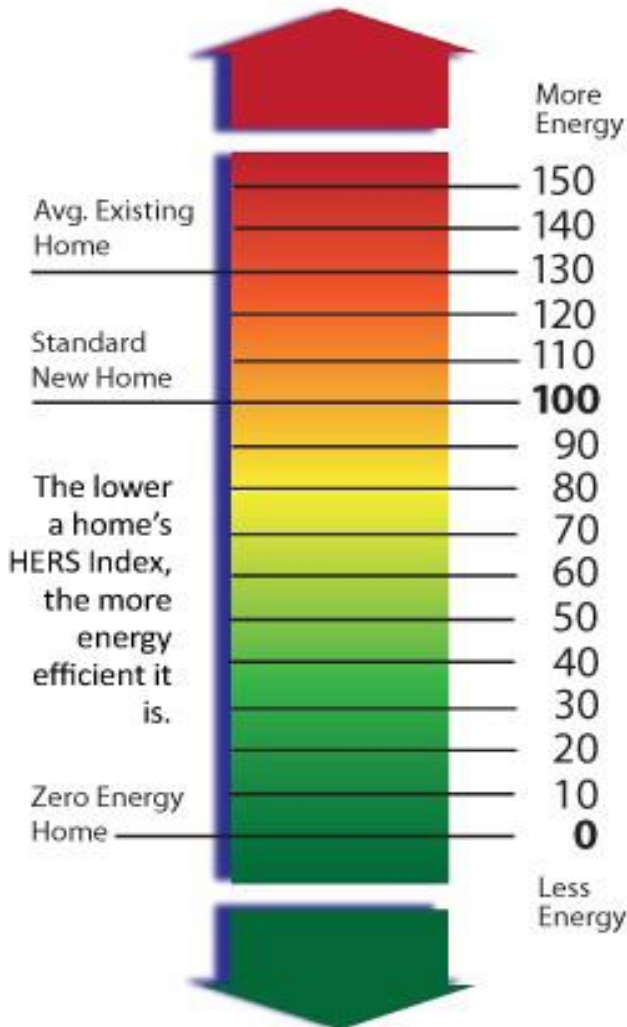


Home Energy Rating System (HERS) Requirements for New Construction

RESNET HERS Index



The 2009 IECC scope includes residential single-family housing and multifamily housing three stories or less above grade.

Compliance with the code for new residential construction, additions, and substantial remodels will be required as of September 3, 2012.

All new residential construction shall have a home energy rating completed by an independent RESNET certified home energy rater, or equivalent, prior to the issuance of a Certificate of Occupancy.

Additions, alterations, and renovations to existing residential structures shall comply with the standards of the 2009 IECC, but will not be required to provide a Home Energy Rating or post a decal.



The Residential Energy Services Network (RESNET) is a not-for-profit, membership corporation and a recognized national standards-making body for building energy efficiency rating and certification systems in the United States.

HOME ENERGY RATING SYSTEM (HERS)

The HERS, or Home Energy Rating System, developed by RESNET, is the nationally recognized system for inspecting and calculating a home's energy performance and determining what improvements can make the home more efficient. It does not make the energy-related requirements of the code more stringent; rather, it measures the performance of what is constructed to ensure it meets the adopted 2009 IECC.

Because more efficient buildings reduce stress on our electricity grid and natural gas supplies while saving money and resources for our citizens, the City of Fayetteville adopted the 2009 International Energy Conservation Code (IECC) for residential structures on July 17, 2012.

The HERS Index is a numerical scale, with 100 as the relative value of a home built to the 2006 IECC Energy Code. A HERS Index of 65, for example, means that the home uses about 35% less energy than a code-built, or reference home with an index of 100. An inefficient home may have a HERS Index well above 100.

The HERS rater will require

- Scale drawings of the floor plan, including window and door locations, ceiling heights, and mechanical equipment locations.
- Exterior wall sections
- Slab insulation details
- Foundation wall sections
- Insulation type and R-values for walls, ceilings and floors
- Heating and air equipment
 - Type, capacity, & efficiency
 - Ductwork location and R-value
- Window and door schedule
 - U-factors
 - SHGC values
- Water heater
 - Type, capacity, & efficiency
- Other energy feature information, such as solar hot water heaters, photovoltaic panels, passive solar design, etc.

Projected Rating

It is strongly recommended that a rater perform energy modeling and obtain a projected rating BEFORE framing begins. The HERS rater performs a pre-construction plan review and energy modeling to determine whether the project as proposed will meet performance requirements of the 2009 IECC. The rater analyzes energy feature options and helps the builder select the most cost-effective mix of options to achieve 2009 IECC compliance plus whatever additional level of energy performance may be desired.

Pre-Drywall Inspections

- **Thermal Bypass Inspection:** Identifies areas that may cause building air infiltration failure at final test-out
- **Insulation Inspection:** Verifies and grades wall and floor insulation

- **Window/Door Inspection:** Verifies installation and specifications
- **HVAC Duct Testing At Rough-in:** Avoids duct leakage failure at final inspection

Final Inspection and Testing

- **Duct Leakage Test:** A special fan unit is attached to a return air plenum, the supply registers are taped off, and the duct system is then pressurized to a standard level. This test gives the Total Duct Leakage. Duct leakage to outside is potentially a very large loss of energy when supply ducts leak. Leaking return ducts are a source of indoor air pollution, pulling unconditioned, contaminated air into the home. Duct leakage tests can also be performed at rough-in, prior to a framing inspection, which will allow for easy access to correct any deficiencies. However, if modifications are made to the HVAC system, damage occurs, or visual inspection indicates lack of proper sealing at the final inspection, a second test may be required at the final inspection.
- **Blower Door Test:** This test measures the leakiness of the building envelope. The house is depressurized to a standard amount using a powerful calibrated fan in an exterior door opening. A digital pressure gauge measures the volume of air being moved at that pressure. A target level of air tightness for a home is no more than 0.35 Natural Air Changes per Hour (NACH).





- **Mechanical Equipment Verification**
- **Ceiling Insulation Inspection**
- **Major Appliance Inspection**

Generate Confirmed Rating

Test results and as-built data are entered into the modeling software and the final HERS index score is generated along with confirmation that requirements of the 2009 IECC have been met.

Documents and Certificates

The HERS rater will issue a Certificate of Compliance to the City and the Owner/Builder in order for certain inspections, such as framing and a final, to be scheduled.

Performance Testing & Labeling

Residential developments that utilize the exact same floor plan multiple times shall have a Home Energy Rating completed on a minimum of 20% of the residential units. Sampling protocol must conform to RESNET standards.

This brochure presents an overview of the Home Energy Rating System. For more details, visit www.resnet.us

The City of Fayetteville will offer information covering the new requirements related to the 2009 IECC in August 2012.

If you have any questions, please contact Vel Moses at 479-575-8233 or vmoses@ci.fayetteville.ar.us