

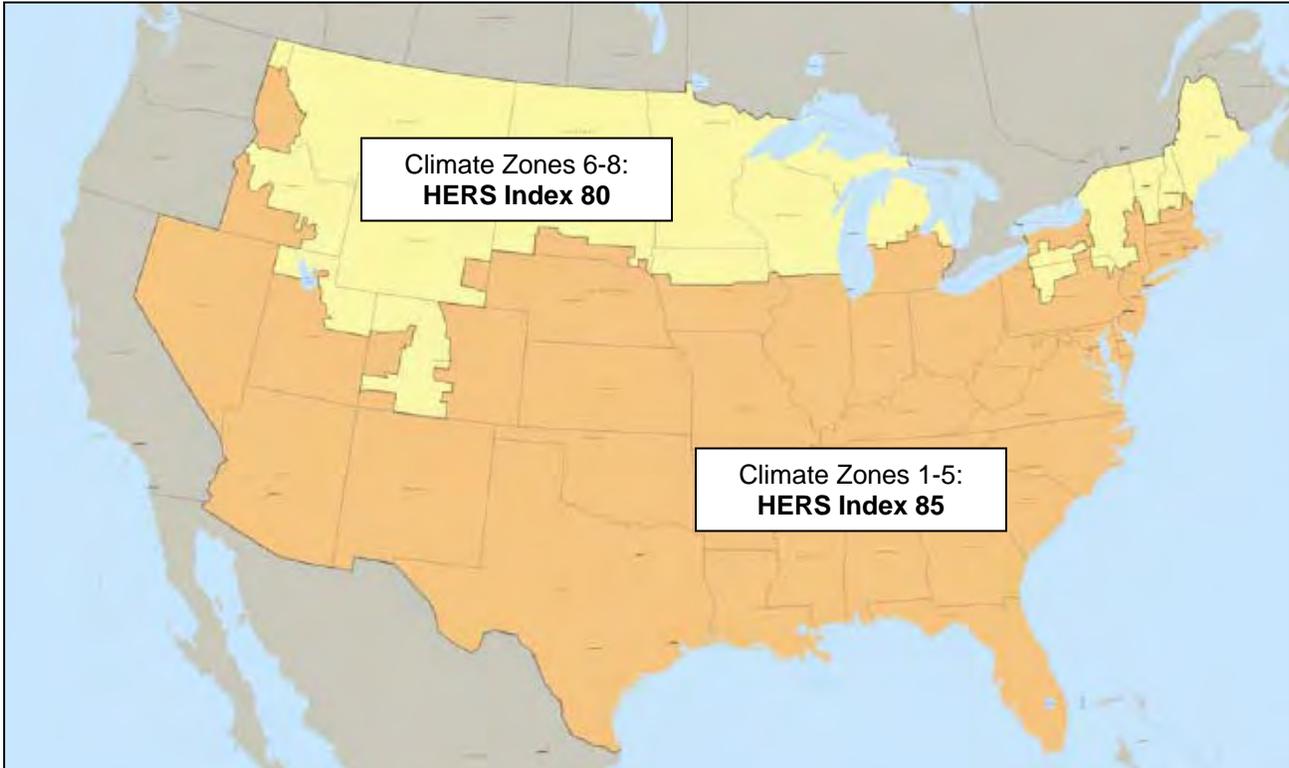


ENERGY STAR Qualified Homes National Performance Path Notes

ENERGY STAR Performance Requirements:

To qualify as ENERGY STAR, a home must meet the minimum requirements specified below and be verified and field-tested in accordance with the RESNET Standards by a RESNET-accredited Provider. Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built.¹

Maximum HERS Index Required to Earn the ENERGY STAR²



Note: Due to the unique nature of some state codes and/or climates, EPA has agreed to allow regionally-developed definitions of ENERGY STAR in California, Hawaii, and the Pacific Northwest to continue to define program requirements. The States of Montana and Idaho may use either the requirements of the national program or the regionally-developed program in the Pacific Northwest.

ENERGY STAR Mandatory Requirements:

Envelope ^{3,4,5}	Completed Thermal Bypass Inspection Checklist															
Ductwork ^{6,7}	Leakage \leq 6 cfm to outdoors / 100 sq. ft.															
ENERGY STAR Products	<p>Include at least one ENERGY STAR qualified product category:</p> <ul style="list-style-type: none"> ▪ Heating or cooling equipment^{8,9}; <u>OR</u> ▪ Windows that meet the following eligibility requirements¹⁰; <u>OR</u> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>ENERGY STAR Window Zone:</th> <th>Southern</th> <th>South / Central</th> <th>North / Central</th> <th>Northern</th> </tr> </thead> <tbody> <tr> <td>Window U-Value:</td> <td>\leq 0.65</td> <td>\leq 0.40</td> <td>\leq 0.40</td> <td>\leq 0.35</td> </tr> <tr> <td>Window SHGC:</td> <td>\leq 0.40</td> <td>\leq 0.40</td> <td>\leq 0.55</td> <td>Any</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ▪ Water heating equipment; <u>OR</u> ▪ Five or more ENERGY STAR qualified light fixtures^{11,12}, appliances¹³, ceiling fans equipped with lighting fixtures, and/or ventilation fans¹⁴ 	ENERGY STAR Window Zone:	Southern	South / Central	North / Central	Northern	Window U-Value:	\leq 0.65	\leq 0.40	\leq 0.40	\leq 0.35	Window SHGC:	\leq 0.40	\leq 0.40	\leq 0.55	Any
	ENERGY STAR Window Zone:	Southern	South / Central	North / Central	Northern											
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Window SHGC:	\leq 0.40	\leq 0.40	\leq 0.55	Any												
ENERGY STAR Scoring Exceptions	<ul style="list-style-type: none"> ▪ On-site power generation may not be used to achieve the HERS Index required to qualify the home. ▪ A maximum of 20% of all screw-in light bulb sockets in the home may use compact fluorescent lamps (CFLs) to achieve the HERS index required to qualify the home. CFLs used for this purpose must be ENERGY STAR qualified. 															



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1. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:
 - a. In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
 - b. In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Furthermore, qualification shall still be allowed if the rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation).
2. The appropriate climate zone for each building site shall be determined by the 2004 International Residential Code (IRC), Table N1101.2. The HERS Index must be calculated in accordance with the RESNET Mortgage Industry National Home Energy Rating Standards.
3. The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label.
4. Envelope leakage must be determined by a RESNET-certified rater using a RESNET-approved testing protocol.
5. To ensure consistent exchange of indoor air, whole-house mechanical ventilation is recommended, but not required.
6. Ducts must be sealed and tested to be ≤ 6 cfm to outdoors / 100 sq. ft. of conditioned floor area, as determined and documented by a RESNET-certified rater using a RESNET-approved testing protocol. If total duct leakage is ≤ 6 cfm to outdoors / 100 sq.ft. of conditioned floor area, then leakage to outdoors does not need to be tested. Duct leakage testing can be waived if all ducts and air handling equipment are located in conditioned space (i.e., within the home's air and thermal barriers) AND the envelope leakage has been tested to be ≤ 3 ACH50 OR ≤ 0.25 CFM 50 per sq. ft. of the building envelope. Note that mechanical ventilation will be required in this situation.
7. EPA recommends, but does not require, locating ducts within conditioned space (i.e., inside the air and thermal barriers), and using a minimum of R-4 insulation for ducts inside conditioned space to prevent condensation.
8. All cooling equipment, regardless of whether it is used to satisfy the ENERGY STAR products requirement, must be sized according to the latest editions of ACCA Manuals J and S, ASHRAE 2001 Handbook of Fundamentals, or an equivalent computation procedure. Maximum oversizing limit for air conditioners and heat pumps is 15% (with the exception of heat pumps in Climate Zones 5 - 8, where the maximum oversizing limit is 25%). This can be accomplished either by the rater performing the calculations or reviewing documentation provided by the professional contractor or engineer who calculated the sizing (e.g., HVAC contractor). The following operating conditions shall be used in the sizing calculations and verified where reviewed by the rater:

Outdoor temperatures shall be the 99.0% design temperatures as published in the ASHRAE Handbook of Fundamentals for the home's location or most representative city for which design temperature data are available. Note that a higher outdoor air design temperature may be used if it represents prevailing local practice by the HVAC industry and reflects extreme climate conditions that can be documented with recorded weather data; indoor temperatures shall be 75⁰ F for cooling; infiltration rate shall be selected as "tight", or the equivalent term.

In specifying equipment, the next available size may be used. In addition, indoor and outdoor coils shall be matched in accordance with ARI standards.
9. In homes with heat pumps that have programmable thermostats, the thermostat must have "Adaptive Recovery" technology to prevent the excessive use of electric back-up heating.
10. Where windows are used to meet the ENERGY STAR qualified product requirement, they shall be ENERGY STAR qualified or meet or exceed the listed eligibility requirements listed in this document, which are aligned with the ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights— version 4.0. To determine the ENERGY STAR window zone assigned to each county of the country, download the applicable county-level BOP on EPA's Web site and refer to the top right corner of the document. Additional information about version 5.0 of the program requirements for windows, which is more stringent and offers additional savings, can be found at www.energystar.gov/windows.
11. For the purposes of meeting the ENERGY STAR requirement, qualified lighting fixtures in the following locations cannot be counted: storage rooms (e.g., closets, pantries, sheds), or garages.
12. To learn more about the benefits of increasing the use of efficient fixtures through the installation of the ENERGY STAR Advanced Lighting Package (ALP), refer to www.energystar.gov/alp.
13. Eligible appliances include ENERGY STAR qualified refrigerators, dish washers, and washing machines.
14. ENERGY STAR qualified ventilation fans include range hood, bathroom, and inline fans.