



# ENERGY STAR Qualified Homes Florida Builder Option Package

**This Builder Option Package may be used in the state of Florida**

The requirements for the ENERGY STAR Builder Option Package (BOP) are specified in the checklist below.

To qualify as ENERGY STAR using this BOP, a home must meet the requirements specified and be verified and field-tested in accordance with the HERS 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.<sup>1</sup>

Home Address: _____		City: _____		State: _____	
Building System	Inspection Guidelines	Rater Verified	Must Correct	NA	
<b>Cooling Equipment</b>	Right-sized <sup>2</sup> ≥ 14.5 SEER/ 12 EER ENERGY STAR qualified A/C; <u>OR</u> Right-sized <sup>2</sup> ≥ 14.5 SEER/ 12 EER/ 8.2 HSPF ENERGY STAR qual. HP <sup>3</sup>				
<b>Heating Equipment</b>	≥ 80 AFUE gas furnace; <u>OR</u> Right-sized <sup>2</sup> ≥ 14.5 SEER/ 12 EER/ 8.2 HSPF ENERGY STAR qual. HP <sup>3</sup> ; <u>OR</u> ≥ 80 AFUE boiler; <u>OR</u> ≥ 80 AFUE oil furnace				
<b>Thermostat</b> <sup>3</sup>	ENERGY STAR qualified thermostat (except in zones with mass radiant heat)				
<b>Ductwork</b>	Leakage <sup>4</sup> : ≤ 3 CFM to outdoors / 100 sq. ft.; <u>AND</u> Insulation <sup>5</sup> : ≥ R-6 insulation on ducts in unconditioned spaces				
<b>Envelope</b>	≤ 7 ACH50	Infiltration <sup>6,7</sup>			
	≥ 30 R-Value	Ceiling Insulation <sup>8</sup> ; <u>AND (if applicable)</u>			
	≥ 30 R-Value	Cathedral Ceiling Insulation <sup>8</sup> ; <u>AND (if app.)</u>			
	≥ 13 R-Value	Wood Frame Wall Insulation <sup>8</sup> ; <u>OR (if app.)</u>			
	≥ 6 R-Value	Interior Mass Wall Insulation <sup>8</sup> ; <u>OR (if app.)</u>			
	≥ 4 R-Value	Exterior Mass Wall Insulation <sup>8</sup> ; <u>AND (if app.)</u>			
	≥ 13 R-Value	Floor Over Unconditioned Space Insulation <sup>8</sup> ; <u>AND (if app.)</u>			
	None Required	Crawlspace Wall Insulation Continuous <sup>8</sup> ; <u>OR (if app.)</u>			
	None Required	Crawlspace Wall Insulation Framed <sup>8</sup> ; <u>AND (if app.)</u>			
	None Required	Basement Wall Insulation Continuous <sup>8</sup> ; <u>OR (if app.)</u>			
None Required	Basement Wall Insulation Framed <sup>8</sup> ; <u>AND (if app.)</u>				
None Required	Slab Insulation <sup>8</sup> ; <u>AND</u>				
Completed Thermal Bypass Inspection Checklist <sup>9</sup>					
<b>Windows</b> <sup>10, 11, 12</sup>	≤ 0.52 U-Value ≤ 0.32 SHGC ≤ 16% Window to Floor Area				
<b>Water Heater</b> <sup>13, 14</sup>	Gas (EF): 40 Gal = 0.61   60 Gal = 0.57   80 Gal = 0.53 Electric (EF): 40 Gal = 0.93   50 Gal = 0.92   80 Gal = 0.89 Oil or Gas <sup>15</sup> : Integrated with space heating boiler				
<b>Lighting and Appliances</b> <sup>16</sup>	<ul style="list-style-type: none"> <li>Advanced Lighting Package (ALP) or 60% ENERGY STAR qualified CFLs</li> <li>If dishwasher, refrigerator, or ceiling fans are installed, they must be ENERGY STAR qualified</li> </ul>				
<b>Radiant Barrier</b>	If more than 10 linear feet of ductwork are located in an unconditioned attic, a radiant barrier shall be installed. <sup>17</sup>				



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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. Cooling equipment shall be sized according to the latest editions of ACCA Manuals J and S, ASHRAE 2001 Handbook of Fundamentals, or an equivalent procedure. Maximum oversizing limit for air conditioners and air-source and ground-source heat pumps is 15% with the following two exceptions: single-speed air-source and ground-source heat pumps in buildings with heating loads that exceed cooling loads have a limit of 25% and multi-stage heat pumps do not have a strict limit, but should be sized to allow adequate humidity control in the cooling mode. 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 75 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.

The stated efficiency requirements are aligned with the increased requirements for ENERGY STAR labeled central air conditioners and air-source heat pumps that went into effect as of January 1, 2009. Equipment manufactured before January 1 is still eligible to earn the ENERGY STAR based on the old performance level. Therefore, there will be a transition period when labeled equipment is commercially available at both the old and new performance levels. Builders must transition to equipment meeting these new ENERGY STAR requirements as stocks of equipment qualified at the old performance levels are exhausted.
3. 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.
4. Ducts must be sealed and tested to be  $\leq 3$  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  $\leq 3$  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  $\leq 3$  ACH50 OR  $\leq 0.25$  CFM 50 per sq. ft. of the building envelope. Note that mechanical ventilation will be required in this situation.
5. 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.
6. Envelope leakage must be determined by a RESNET-certified rater using a RESNET-approved testing protocol.
7. To ensure consistent exchange of indoor air, whole-house mechanical ventilation is recommended, but not required.
8. Insulation levels of a home must meet or exceed the requirements in the 2009 Supplement to the 2007 Florida Building Code, which provides guidance and exceptions that may be used. For mass walls, the requirement for interior wall insulation must be met unless at least 50% of the insulation value is on the exterior or integral to the wall. In all cases, insulation shall be inspected to Grade I installation as defined in the RESNET Standards by a RESNET-certified rater.
9. The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label.



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10. The window performance levels match ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights— version 4.0, with additional requirements for climate zones 2 and 4. 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](http://www.energystar.gov/windows).
11. All decorative glass and skylight window area counts toward the total window area to above-grade conditioned floor area (WFA) ratio.
12. Up to 0.75% WFA may be used for decorative glass that does not meet ENERGY STAR requirements. For example, a home with total above-grade conditioned floor area of 2,000 sq. ft. may have up to 15 sq. ft. (0.75% of 2,000) of decorative glass.
13. More efficient water heating equipment represents a significant opportunity for energy savings and a meaningful way to differentiate ENERGY STAR qualified homes from those with standard equipment.
14. To determine domestic hot water (DHW) EF requirements for additional tank sizes, use the following equations:  
Gas DHW EF  $\geq 0.69 - (0.002 \times \text{Tank Gallon Capacity})$ ; Electric DHW EF  $\geq 0.97 - (0.001 \times \text{Tank Gallon Capacity})$ .
15. In homes with gas or oil hydronic space heating, water heating systems must have an efficiency  $\geq 0.78$  EF. This may be met through the use of an instantaneous water heating system or an indirect storage system with a boiler that has a system efficiency  $\geq 85$  AFUE. Homes with tankless coil hot water heating systems cannot be qualified using this BOP, but can earn the label using the ENERGY STAR Performance Path requirements.
16. Efficient lighting fixtures represent a significant opportunity for persistent energy savings and a meaningful way to differentiate ENERGY STAR qualified homes from those meeting minimum code requirements. 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](http://www.energystar.gov/alp).
17. Any radiant barrier with a minimum reflectance of 0.90 and maximum emittance of 0.10 or an ENERGY STAR qualified roof product meets the requirement for a radiant barrier.