



# National Program Requirements

## ENERGY STAR Certified Manufactured Homes, Version 2

### Eligibility Requirements

Only manufactured homes <sup>1</sup> are eligible to be certified through the ENERGY STAR Certified Manufactured Homes program.

Site-built and modular single-family homes and multifamily buildings may not earn the ENERGY STAR through the Manufactured Homes program but may be eligible for certification through other ENERGY STAR New Construction programs. For more information, visit: [www.energystar.gov/newhomesrequirements](http://www.energystar.gov/newhomesrequirements).

### Effective Date

Manufactured homes produced on or after June 1, 2020 must be certified to the ENERGY STAR Certified Manufactured Homes Version 2 program requirements.

### Partnership and Plant Certification Requirements

Manufactured housing plants must meet the following requirements prior to certifying homes as ENERGY STAR:

- Sign an ENERGY STAR Partnership Agreement, available at [www.energystar.gov/homesPA](http://www.energystar.gov/homesPA).
- Complete a plant certification process through an EPA-recognized Quality Assurance Provider (QAP). <sup>2</sup> A list of recognized QAPs can be found at [www.energystar.gov/manufacturedhomes](http://www.energystar.gov/manufacturedhomes).

If a plant is de-certified by its QAP for any reason, it may no longer produce ENERGY STAR certified manufactured homes and must immediately cease all use of the ENERGY STAR name and logo.

### ENERGY STAR Certification Process <sup>3</sup>

1. As noted above, plants must be certified by an EPA-recognized QAP to be eligible to produce ENERGY STAR certified manufactured homes. The QAP ensures that the plant's home design packages intended for ENERGY STAR certification meet the requirements of one of the ENERGY STAR Reference Design Homes specified in Exhibit 1, and the Mandatory Requirements for All Certified Manufactured Homes in Exhibit 2.
2. Plants then incorporate the ENERGY STAR program requirements into the Design Approval Primary Inspection Agency's (DAPIA)-approved packages, the plant Quality Control Manual, and the Manufacturer's Installation Manual.
3. Once certified, plants may produce and install ENERGY STAR certified manufactured homes in accordance with the designs and installation procedures developed during the plant certification process. The plant's third-party Production Inspection Primary Inspection Agency (IPIA) shall inspect the homes for consistency with the DAPIA-approved packages and the plant's quality control (QC) personnel shall verify that the ENERGY STAR features are installed in accordance with the plant's Quality Control Manual.
4. Some ENERGY STAR certified manufactured homes are subject to verification requirements for features that are installed after the home leaves the plant. For multi-section homes, tightly sealed crossover duct installation in accordance with Exhibit 2 must be verified at the site. Additionally, for homes designed to meet the Electric Heat Pump Package or High-Efficiency Furnace Package, installation of the heat pump or air conditioning equipment must be verified. Refer to each QAP for details on approved verification protocols. <sup>4</sup>
5. Plants must report all homes that are certified as ENERGY STAR to their QAP and ensure that an ENERGY STAR label is affixed either adjacent to the HUD Data Plate or inside the electric panel cover of the home. Refer to each QAP for additional details on labeling requirements.
6. The QAP will coordinate with the plant on an ongoing basis to conduct periodic field evaluations of ENERGY STAR certified manufactured homes. Field evaluations shall be conducted on no less than two percent (2%) of a plant's ENERGY STAR certified manufactured homes sold and installed on a homeowner's site, or a minimum of one home each calendar year, whichever is greater.



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## Exhibit 1: ENERGY STAR Reference Design Homes

Electric Heat Pump Package
<b>Heating &amp; Cooling Equipment</b>
<ul style="list-style-type: none"> <li>• <math>\geq 8.2</math> HSPF / 14 SEER air-source heat pump with electric or dual-fuel backup.</li> </ul>
<b>Envelope &amp; Windows</b>
<ul style="list-style-type: none"> <li>• Insulation and window U-factor levels shall comply with one of the following options:               <ul style="list-style-type: none"> <li>• Meet or exceed the following performance levels:                   <ul style="list-style-type: none"> <li>○ <math>\geq R-11</math> wall insulation;</li> <li>○ <math>\geq R-22</math> floor insulation;</li> <li>○ <math>\geq R-33</math> ceiling insulation;</li> <li>○ <math>\leq 0.35</math> U-factor for windows, skylights, and doors <math>\geq 50\%</math> glazed <sup>5</sup></li> </ul> </li> <li>• OR achieve an overall coefficient of heat transmission <sup>6</sup> (U<sub>o</sub>) that does not exceed:                   <ul style="list-style-type: none"> <li>○ 0.082 for single-section homes, and 0.076 for multi-section homes</li> </ul> </li> </ul> </li> <li>• The solar heat gain coefficient of windows, skylights, and doors <math>\geq 50\%</math> glazed shall not exceed 0.34 SHGC. <sup>7</sup></li> </ul>
<b>Thermostat &amp; Ductwork</b>
<ul style="list-style-type: none"> <li>• Programmable thermostat shall be installed.</li> <li>• Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation.</li> <li>• Crossover ducts and other ducts in unconditioned space shall be insulated to R-8.</li> </ul>
High-Efficiency Furnace Package
<b>Heating Equipment</b>
<ul style="list-style-type: none"> <li>• <math>\geq 90</math> AFUE gas / propane furnace in HUD <sup>8</sup> CZ 1.</li> <li>• <math>\geq 95</math> AFUE gas / propane furnace in HUD <sup>8</sup> CZ 2 and 3.</li> </ul>
<b>Cooling Equipment</b>
<ul style="list-style-type: none"> <li>• <math>\geq 14</math> SEER AC.</li> </ul>
<b>Envelope &amp; Windows</b>
<ul style="list-style-type: none"> <li>• Insulation and window U-factor levels shall comply with one of the following options:               <ul style="list-style-type: none"> <li>• Meet or exceed the following performance levels:                   <ul style="list-style-type: none"> <li>○ <math>\geq R-11</math> wall insulation in HUD <sup>8</sup> CZ 1 and 2, and <math>\geq R-13</math> wall insulation in HUD <sup>8</sup> CZ 3;</li> <li>○ <math>\geq R-22</math> floor insulation in HUD <sup>8</sup> CZ 1 and 2, and <math>\geq R-30</math> floor insulation in HUD <sup>8</sup> CZ 3;</li> <li>○ <math>\geq R-33</math> ceiling insulation;</li> <li>○ <math>\leq 0.35</math> U-factor for windows, skylights, and doors <math>\geq 50\%</math> glazed <sup>5</sup></li> </ul> </li> <li>• OR achieve an overall coefficient of heat transmission <sup>6</sup> (U<sub>o</sub>) that does not exceed:                   <ul style="list-style-type: none"> <li>○ 0.082 for single-section homes, and 0.076 for multi-section homes in HUD <sup>8</sup> CZ 1 and 2;</li> <li>○ 0.077 for single-section homes, and 0.070 for multi-section homes in HUD <sup>8</sup> CZ 3</li> </ul> </li> </ul> </li> <li>• The solar heat gain coefficient of windows, skylights, and doors <math>\geq 50\%</math> glazed shall not exceed 0.34 SHGC. <sup>7</sup></li> </ul>
<b>Thermostat &amp; Ductwork</b>
<ul style="list-style-type: none"> <li>• Programmable thermostat shall be installed.</li> <li>• Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation.</li> <li>• Crossover ducts and other ducts in unconditioned space shall be insulated to R-8.</li> </ul>
Envelope-Only Package
<b>Envelope &amp; Windows</b>
<ul style="list-style-type: none"> <li>• Insulation and window U-factor levels shall comply with one of the following options:               <ul style="list-style-type: none"> <li>• Meet or exceed the following performance levels:                   <ul style="list-style-type: none"> <li>○ <math>\geq R-19</math> wall insulation in HUD <sup>8</sup> CZ 1 and 2, and <math>\geq R-21</math> wall insulation in HUD <sup>8</sup> CZ 3;</li> <li>○ <math>\geq R-22</math> floor insulation in HUD <sup>8</sup> CZ 1 and 2, and <math>\geq R-33</math> floor insulation in HUD <sup>8</sup> CZ 3;</li> <li>○ <math>\geq R-38</math> ceiling insulation in HUD <sup>8</sup> CZ 1 and 2, and <math>\geq R-40</math> ceiling insulation in HUD <sup>8</sup> CZ 3;</li> <li>○ <math>\leq 0.34</math> U-factor for windows, skylights, and doors <math>\geq 50\%</math> glazed <sup>5</sup></li> </ul> </li> <li>• OR achieve an overall coefficient of heat transmission <sup>6</sup> (U<sub>o</sub>) that does not exceed:                   <ul style="list-style-type: none"> <li>○ 0.068 for single-section homes, and 0.066 for multi-section homes in HUD <sup>8</sup> CZ 1 and 2;</li> <li>○ 0.062 for single-section homes, and 0.059 for multi-section homes in HUD <sup>8</sup> CZ 3</li> </ul> </li> </ul> </li> <li>• The solar heat gain coefficient of windows, skylights, and doors <math>\geq 50\%</math> glazed shall not exceed 0.34 SHGC. <sup>7</sup></li> </ul>
<b>Thermostat &amp; Ductwork</b>
<ul style="list-style-type: none"> <li>• Programmable thermostat shall be installed.</li> <li>• Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation.</li> <li>• Crossover ducts and other ducts in unconditioned space shall be insulated to R-8.</li> </ul>



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## Exhibit 2: Mandatory Requirements for All Certified Manufactured Homes

Mandatory Requirements
<ul style="list-style-type: none"><li>• <b>Marriage line seal:</b> For multi-section homes only, the marriage line areas must be filled with a continuous, non-porous insulating gasket creating a permanent air barrier in the ceiling, walls and floor. Acceptable gaskets can be one- or two-part systems, including proprietary gaskets, foams, insulation wrapped in poly and insulation covered by butyl or other long-life tape on one side. There should be no visible gaps or tears. The marriage line seal shall be installed at the plant and be protected against damage during shipping.</li><li>• <b>Duct Installation:</b> For multi-section homes only, the crossover ducts must be installed such that all seams and joints are tightly sealed against leakage and the ducts do not rest on the ground.</li></ul>

### Footnotes:

1. A manufactured home is defined as a home built in a factory that is subject to the federal Manufactured Home Construction and Safety Standards (commonly referred to as the HUD Code) contained in 24 CFR 3280.
2. A 'Quality Assurance Provider' (QAP) is an organization that supervises the third-party inspections required for plant certification, home labeling, and ongoing plant certification maintenance. The QAP may fulfill these responsibilities itself, or it may use qualified, independent, third-party consultants.
3. Certification of a manufactured home to meet ENERGY STAR program requirements is not intended to imply compliance with applicable codes. In cases where requirements of the federal or local codes or manufacturers' installation instructions overlap or conflict with ENERGY STAR program requirements:
  - a. ENERGY STAR requirements shall be met if they exceed the stringency of code requirements or installation instructions;
  - b. ENERGY STAR requirements shall not be met if they conflict with code requirements or installation instructions. In such cases, the homes may not be certified unless the EPA-recognized Quality Assurance Provider has determined that no equivalent option is available that could meet the intent of the conflicting requirement.
4. With approval from EPA, each QAP defines its own protocol for verifying the crossover duct requirements and installation of heat-pump or air-conditioning equipment that occurs after the home leaves the plant. At a minimum, approved verification protocols shall include on-site verification of the crossover duct requirements by a designated agent and collection of the equipment make and model, along with on-site verification or supporting documentation.
5. An area-weighted average of windows, skylights and doors  $\geq 50\%$  glazed shall be permitted to satisfy the U-factor requirements.
6. The overall coefficient of heat transmission ( $U_o$ ) shall be determined by methods outlined in 24 CFR 3280.508 and 3280.509 and is expressed in units of Btu / (hr.) (sq. ft.) (F).
7. An area-weighted average of windows, skylights and doors  $\geq 50\%$  glazed shall be permitted to satisfy the SHGC requirements.
8. Climate Zone boundaries as established by the U.S. Department of Housing and Urban Development Code contained in 24 CFR 3280. Climate Zone 1 consists of Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas. Climate Zone 2 consists of Arizona, Arkansas, California, Kansas, Kentucky, Missouri, New Mexico, North Carolina, Oklahoma, and Tennessee. Climate Zone 3 consists of all other states.