

ENERGY STAR[®]

Residential New Construction Programs

Historical Document

This document is provided for reference because it has been superseded by a more recent Version or Revision. Please find current program documents on the [Program Requirements](#) webpage.

Use of older Versions and Revisions, such as this document, are typically limited to homes and buildings with a permit date (or, for manufactured homes, a production date) prior to a specified date. Consult the [Implementation Timeline](#) table to assess whether a home or apartment is still eligible to be certified using this document.

For questions or more information, contact us at energystarhome@energystar.gov.



ENERGY STAR Manufactured New Homes National Program Requirements, Version 2 (Rev. 01)

Eligibility Requirements

Only manufactured homes ¹ are eligible to be certified through the ENERGY STAR Manufactured New 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.

Implementation Timeline

Manufactured homes produced between January 1, 2023 and December 31, 2023 are permitted to be certified using either Version 2 or Version 3 of the program requirements. Manufactured homes produced on or after January 1, 2024 must be certified using Version 3 of the program requirements. Implementation timelines applicable prior to this date can be obtained by contacting energystarhomes@energystar.gov.

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.
- Complete a plant certification process through an EPA-recognized Quality Assurance Provider (QAP). ² A list of recognized QAPs can be found at 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 ³

1. As noted above, plants must be certified by an EPA-recognized QAP to be eligible to produce homes that earn the ENERGY STAR. The QAP ensures that the plant's home design packages intended for 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 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 (PIPA) 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, installation of the heat pump equipment must be verified. Refer to each QAP for details on approved verification protocols. ⁴
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 and documentation audits. Field evaluations shall be conducted on no less than two percent (2%) of a plant's multi-section ENERGY STAR certified manufactured homes sold and installed on a homeowner's site, or a minimum of one multi-section home each calendar year, whichever is greater. QAPs shall audit documentation of the heat pump equipment installation for no less than ten percent (10%) of certified homes that use the Electric Heat Pump Package.



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Exhibit 1: ENERGY STAR Reference Design Homes

| HUD Thermal Zone ⁵ | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|------------|------------|-----------------|------|------|------|------------------|------|------|------|--------------------|------|------|------|-------------------------------|------|------|------|-------------------------------|-------|-------|-------|------------------------------|-------|-------|-------|------|------|------|------|
| Electric Heat Pump Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heating & Cooling Equipment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air-source Heat Pump HSPF / SEER ⁶ | ≥ 8.2 / 14 | ≥ 8.2 / 14 | ≥ 8.2 / 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Envelope & Glazing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Insulation and glazing U-factor levels shall comply with one of the following options: <ul style="list-style-type: none"> Meet or exceed the following performance levels: <table border="1"> <tr> <td>Wall Insulation</td> <td>R-11</td> <td>R-11</td> <td>R-11</td> </tr> <tr> <td>Floor Insulation</td> <td>R-22</td> <td>R-22</td> <td>R-22</td> </tr> <tr> <td>Ceiling Insulation</td> <td>R-33</td> <td>R-33</td> <td>R-33</td> </tr> <tr> <td>Glazing U-factor ⁷</td> <td>0.35</td> <td>0.35</td> <td>0.35</td> </tr> </table> OR achieve an overall coefficient of heat transmission ⁸ (U_o) that does not exceed: <table border="1"> <tr> <td>Single-section U_o</td> <td>0.080</td> <td>0.080</td> <td>0.079</td> </tr> <tr> <td>Multi-section U_o</td> <td>0.074</td> <td>0.074</td> <td>0.074</td> </tr> </table> The solar heat gain coefficient of glazing shall not exceed: ⁹ <table border="1"> <tr> <td>SHGC</td> <td>0.34</td> <td>0.34</td> <td>0.34</td> </tr> </table> | | | | Wall Insulation | R-11 | R-11 | R-11 | Floor Insulation | R-22 | R-22 | R-22 | Ceiling Insulation | R-33 | R-33 | R-33 | Glazing U-factor ⁷ | 0.35 | 0.35 | 0.35 | Single-section U _o | 0.080 | 0.080 | 0.079 | Multi-section U _o | 0.074 | 0.074 | 0.074 | SHGC | 0.34 | 0.34 | 0.34 |
| Wall Insulation | R-11 | R-11 | R-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Floor Insulation | R-22 | R-22 | R-22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ceiling Insulation | R-33 | R-33 | R-33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Glazing U-factor ⁷ | 0.35 | 0.35 | 0.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single-section U _o | 0.080 | 0.080 | 0.079 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multi-section U _o | 0.074 | 0.074 | 0.074 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHGC | 0.34 | 0.34 | 0.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermostat & Ductwork | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Programmable thermostat shall be installed. Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation. Crossover ducts and other ducts in unconditioned space shall be insulated to R-8. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High-Efficiency Furnace Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heating Equipment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gas / Propane Furnace AFUE | ≥ 90 | ≥ 95 | ≥ 95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Envelope & Glazing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Insulation and glazing U-factor levels shall comply with one of the following options: <ul style="list-style-type: none"> Meet or exceed the following performance levels: <table border="1"> <tr> <td>Wall Insulation</td> <td>R-11</td> <td>R-11</td> <td>R-13</td> </tr> <tr> <td>Floor Insulation</td> <td>R-22</td> <td>R-22</td> <td>R-30</td> </tr> <tr> <td>Ceiling Insulation</td> <td>R-33</td> <td>R-33</td> <td>R-38</td> </tr> <tr> <td>Glazing U-factor ⁷</td> <td>0.35</td> <td>0.35</td> <td>0.35</td> </tr> </table> OR achieve an overall coefficient of heat transmission ⁸ (U_o) that does not exceed: <table border="1"> <tr> <td>Single-section U_o</td> <td>0.080</td> <td>0.080</td> <td>0.071</td> </tr> <tr> <td>Multi-section U_o</td> <td>0.074</td> <td>0.074</td> <td>0.065</td> </tr> </table> The solar heat gain coefficient of glazing shall not exceed: ⁹ <table border="1"> <tr> <td>SHGC</td> <td>0.34</td> <td>0.34</td> <td>0.34</td> </tr> </table> | | | | Wall Insulation | R-11 | R-11 | R-13 | Floor Insulation | R-22 | R-22 | R-30 | Ceiling Insulation | R-33 | R-33 | R-38 | Glazing U-factor ⁷ | 0.35 | 0.35 | 0.35 | Single-section U _o | 0.080 | 0.080 | 0.071 | Multi-section U _o | 0.074 | 0.074 | 0.065 | SHGC | 0.34 | 0.34 | 0.34 |
| Wall Insulation | R-11 | R-11 | R-13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Floor Insulation | R-22 | R-22 | R-30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ceiling Insulation | R-33 | R-33 | R-38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Glazing U-factor ⁷ | 0.35 | 0.35 | 0.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single-section U _o | 0.080 | 0.080 | 0.071 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multi-section U _o | 0.074 | 0.074 | 0.065 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHGC | 0.34 | 0.34 | 0.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermostat & Ductwork | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Programmable thermostat shall be installed. Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation. Crossover ducts and other ducts in unconditioned space shall be insulated to R-8. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Envelope-Only Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Envelope & Glazing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Insulation and glazing U-factor levels shall comply with one of the following options: <ul style="list-style-type: none"> Meet or exceed the following performance levels: <table border="1"> <tr> <td>Wall Insulation</td> <td>R-13</td> <td>R-19</td> <td>R-21</td> </tr> <tr> <td>Floor Insulation</td> <td>R-22</td> <td>R-22</td> <td>R-33</td> </tr> <tr> <td>Ceiling Insulation</td> <td>R-38</td> <td>R-38</td> <td>R-40</td> </tr> <tr> <td>Glazing U-factor ⁷</td> <td>0.34</td> <td>0.34</td> <td>0.34</td> </tr> </table> OR achieve an overall coefficient of heat transmission ⁸ (U_o) that does not exceed: <table border="1"> <tr> <td>Single-section U_o</td> <td>0.076</td> <td>0.067</td> <td>0.059</td> </tr> <tr> <td>Multi-section U_o</td> <td>0.071</td> <td>0.064</td> <td>0.056</td> </tr> </table> The solar heat gain coefficient of glazing shall not exceed: ⁹ <table border="1"> <tr> <td>SHGC</td> <td>0.34</td> <td>0.34</td> <td>0.34</td> </tr> </table> | | | | Wall Insulation | R-13 | R-19 | R-21 | Floor Insulation | R-22 | R-22 | R-33 | Ceiling Insulation | R-38 | R-38 | R-40 | Glazing U-factor ⁷ | 0.34 | 0.34 | 0.34 | Single-section U _o | 0.076 | 0.067 | 0.059 | Multi-section U _o | 0.071 | 0.064 | 0.056 | SHGC | 0.34 | 0.34 | 0.34 |
| Wall Insulation | R-13 | R-19 | R-21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Floor Insulation | R-22 | R-22 | R-33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ceiling Insulation | R-38 | R-38 | R-40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Glazing U-factor ⁷ | 0.34 | 0.34 | 0.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single-section U _o | 0.076 | 0.067 | 0.059 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multi-section U _o | 0.071 | 0.064 | 0.056 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHGC | 0.34 | 0.34 | 0.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermostat & Ductwork | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Programmable thermostat shall be installed. Ducts in floor cavities shall be enclosed by floor insulation. Ducts in attics shall be fully buried in attic insulation. Crossover ducts and other ducts in unconditioned space shall be insulated to R-8. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



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Exhibit 2: Mandatory Requirements for All Certified Manufactured Homes

Mandatory Requirements

- **Marriage line seal:** 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.
- **Duct Installation:** 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.

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. Thermal Zone boundaries as established by the U.S. Department of Housing and Urban Development Code contained in 24 CFR 3280. Thermal Zone 1 consists of Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas. Thermal Zone 2 consists of Arizona, Arkansas, California, Kansas, Kentucky, Missouri, New Mexico, North Carolina, Oklahoma, and Tennessee. Thermal Zone 3 consists of all other states.
6. Applies to an air-source heat pump with electric or dual-fuel backup.
7. Applies to windows, skylights and doors $\geq 50\%$ glazed. An area-weighted average of windows, skylights and doors $\geq 50\%$ glazed shall be permitted to satisfy the U-factor requirements.
8. 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).
9. Applies to windows, skylights and doors $\geq 50\%$ glazed. An area-weighted average of windows, skylights and doors $\geq 50\%$ glazed shall be permitted to satisfy the SHGC requirements.