3. Construct the home using the measures selected in Step 2 and the Mandatory Requirements for All Certified Homes, Exhibit 2.

While primarily intended for new construction, existing homes (e.g., undergoing a gut rehabilitation) are also eligible to participate in the ENERGY STAR SFNH program, with guidance available at: www.energystar.gov/GutRehabGuidance.

ENERGY STAR Certification Process

1. The certification process provides flexibility to select a custom combination of measures for each home that is equivalent in performance to the minimum requirements of the ENERGY STAR Reference Design Home, Exhibit 1, as assessed through energy modeling. An EPA-recognized HCO’s Approved Software Rating Tool shall automatically determine the ENERGY STAR ERI Target, which is the highest ERI value that each rated home may achieve to earn the ENERGY STAR. 9

2. Using the same software program, configure the preferred set of efficiency measures for the home to be certified and verify that the resulting ERI meets or exceeds the ENERGY STAR ERI Target, as determined in Step 1. Note that, regardless of the measures selected, the Mandatory Requirements for All Certified Homes in Exhibit 2 are also required and impose certain constraints on the efficiency measures selected (e.g., insulation levels, insulation installation quality, window performance, duct leakage). Furthermore, on-site power generation may not be used to meet the ENERGY STAR ERI Target.

3. Construct the home using the measures selected in Step 2 and the Mandatory Requirements for All Certified Homes, Exhibit 2.

4. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Homes and with the inspection procedures for minimum rated features in ANSI / RESNET / ICC 301, Appendix B, 8,10 For modular homes, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment. Finally, submit the home to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g., quality assurance, recordkeeping, and reporting). The Rater is required to keep electronic or hard copies of the completed and signed National Rater recordkeeping, and reporting. The Rater is required to keep electronic or hard copies of the completed and signed National Rater

Optional provisions for verifying a maximum of eight items. This option shall only be used at the discretion of the Rater. When exercised, the builder’s responsibility will be formally acknowledged by the builder signing the checklist for the item(s) that they verified.

In the event that a Rater finds an item that is inconsistent with the intent of the checklists, the home cannot earn the ENERGY STAR until the item is corrected. If correction of the item is not possible, the home cannot earn the ENERGY STAR. In the event that an item on a National Rater checklist cannot be inspected by the Rater, the home also cannot earn the ENERGY STAR. The only exceptions to this rule are in the Thermal Enclosure System Section of the National Rater Field Checklist, where the builder may assume responsibility for verifying a maximum of eight items. This option shall only be used at the discretion of the Rater. When exercised, the builder’s responsibility will be formally acknowledged by the builder signing the checklist for the item(s) that they verified.

In the event that a Rater is not able to determine whether an item is consistent with the intent (e.g., an alternative method of meeting a checklist requirement has been proposed), then the Rater shall consult their Provider. If the Provider also cannot make this determination, then the Rater or Provider shall report the issue to EPA prior to project completion at: energystarhomes@energystar.gov and will receive an initial response within 5 business days. If EPA believes the current program requirements are sufficiently clear to determine whether the intent has been met, then this guidance will be provided to the partner and enforced beginning with the house in question. In contrast, if EPA believes the program requirements require revisions to make the intent clear, then this guidance will be provided to the partner but only enforced for homes permitted after a specified transition period after the release of the revised program requirements, typically 60 days in length.

This will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the Policy Record and the periodic release of revised program documents to ensure consistent application of the program requirements.
The ENERGY STAR Reference Design Home is the set of efficiency features modeled to determine the ENERGY STAR ERI Target for each home pursuing certification. Therefore, while the features below are not mandatory, if they are not used then other measures will be needed to achieve the ENERGY STAR ERI Target. In addition, note that the Mandatory Requirements for All Certified Homes, Exhibit 2, contain additional requirements such as total duct leakage limits, minimum allowed insulation levels, and minimum allowed fenestration performance. Therefore, EPA recommends that partners review the documents in Exhibit 2 prior to selecting measures.

### Hot Climates (2012 IECC Zones 1,2,3)  
### Mixed and Cold Climates (2012 IECC Zones 4,5,6,7,8)

#### Cooling Equipment (Where Provided)

- Cooling equipment modeled at the applicable efficiency levels below:
  - 15 SEER / 12 EER AC,
  - Heat pump (See Heating Equipment)

- 13 SEER AC,
- Heat pump (See Heating Equipment)

#### Heating Equipment

- Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type:
  - 80 AFUE gas furnace,
  - 80 AFUE oil furnace,
  - 80 AFUE boiler,
  - 8.2 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup
  - 95 AFUE ENERGY STAR gas furnace,
  - 85 AFUE ENERGY STAR oil furnace,
  - 90 AFUE ENERGY STAR gas boiler,
  - 86 AFUE ENERGY STAR oil boiler,
  - Heat pump, with efficiency as follows:
    - CZ 4: 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
    - CZ 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
    - CZ 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,
    - CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup

#### Envelope, Windows, & Doors

- Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC 301.
- Infiltration rates modeled as follows:
  - 4 ACH50 in CZs 1,2
  - 3 ACH50 in CZs 3,4,5,6,7,8

<table>
<thead>
<tr>
<th>Window U-Value</th>
<th>Window SHGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40 in CZs 1,2</td>
<td>0.30 in CZ 3</td>
</tr>
<tr>
<td>0.25 in CZs 1,2</td>
<td>0.25 in CZ 3</td>
</tr>
</tbody>
</table>

- ENERGY STAR windows and doors modeled, as illustrated below:
  - Door U-Value: Opaque: 0.17 ≤½ lite: 0.25 >½ lite: 0.30
  - Door SHGC: Opaque: Any ≤½ lite: 0.25 >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8

#### Water Heater

- DHW equipment modeled with the following efficiency levels as applicable:
  - Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.53 EF
  - Electric: 30 Gal = 0.94 EF 40 Gal = 0.93 EF 50 Gal = 0.92 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF
  - Oil: 30 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF

#### Thermostat & Ductwork

- Programmable thermostat modeled.
- All ducts and air handlers modeled within conditioned space.

#### Lighting & Appliances

- ENERGY STAR refrigerators, dishwashers, and ceiling fans modeled.
- ENERGY STAR light bulbs modeled in 90% of ANSI / RESNET / ICC 301-defined Qualifying Light Fixture Locations.
Two tracks are provided for satisfying the mandatory requirements for all certified homes. Exhibit 2. Track A - HVAC Grading utilizes ANSI / RESNET / ACCA / ICC 310, a standard for grading the installation of HVAC systems. Track B - HVAC Credential utilizes an HVAC contractor credentialed by an EPA-recognized H-QUITO. Either track may be selected, but all requirements within that track must be satisfied for the home to be certified.

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

<table>
<thead>
<tr>
<th>Party Responsible</th>
<th>Mandatory Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirements Applicable to Track A &amp; B</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Rater** | • Completion of SFNH National Rater Design Review Checklist, Version 3 / 3.1 / 3.2  
• Completion of SFNH National Rater Field Checklist, Version 3 / 3.1 / 3.2 |
| **Builder** | • Completion of SFNH National Water Mgmt. System Builder Reqs., Version 3 / 3.1 / 3.2 |
| **Requirements Only Applicable to Track A - HVAC Grading** | |
| **HVAC System Designer** | • Completion of an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310, plus the SFNH / MFNC National HVAC Design Supplement to Std. 310 for Dwellings & Units, All Versions. |
| **HVAC Installing Contractor** | • None. While the HVAC contractor plays a critical role in properly installing and commissioning a system, the Rater is the party responsible for assessing its installation quality in accordance with ANSI / RESNET / ACCA / ICC 310. |
| **Requirements Only Applicable to Track B - HVAC Credential** | |
| **HVAC System Designer** | • Completion of SFNH National HVAC Design Report, Version 3 / 3.1 / 3.2 |
| **HVAC Installing Contractor** | • Completion of SFNH National HVAC Commissioning Checklist, Version 3 / 3.1 / 3.2 |

### Effective Date

To determine the program Version and Revision that a home is required to be certified under, look up the location and permit date of the home in Exhibit 3. Program requirements for other locations can be found at [www.energystar.gov/newhomesrequirements](http://www.energystar.gov/newhomesrequirements).

This Exhibit contains all implementation timelines applicable on or after October 1, 2020. Implementation timelines applicable prior to this date can be obtained by contacting energystarhomes@energystar.gov.

### Exhibit 3: ENERGY STAR Single-Family New Homes Implementation Timeline

<table>
<thead>
<tr>
<th>State / Territory</th>
<th>Homes Permitted 14 On or After This Date Must Meet the Adjacent Version &amp; Revision</th>
<th>Version</th>
<th>Revision 15</th>
</tr>
</thead>
</table>
| CT, DC, DE, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT | 10-01-2020  
01-01-2022  
01-01-2024 | National v3.1  
National v3.1  
National v3.1 | Rev. 10  
Rev. 10  
Rev. 10 |
| PA | 10-01-2020  
04-01-2021  
01-01-2022  
01-01-2024 | National v3  
National v3.1  
National v3.1  
National v3.1 | Rev. 10  
Rev. 10  
Rev. 10  
Rev. 12 |
| NE | 10-01-2020  
07-01-2021  
01-01-2022  
01-01-2024 | National v3  
National v3.1  
National v3.1  
National v3.1 | Rev. 10  
Rev. 10  
Rev. 11  
Rev. 12 |
| GA, NM, UT | 10-01-2020  
07-01-2022  
01-01-2024  
01-01-2024 | National v3  
National v3.1  
National v3.1  
National v3.1 | Rev. 10  
Rev. 11  
Rev. 11  
Rev. 12 |
| ME | 10-01-2020  
01-01-2022  
01-01-2022  
01-01-2022  
01-01-2024  
01-01-2024 | National v3  
National v3.1  
National v3.1  
National v3.1  | Rev. 10  
Rev. 10  
Rev. 11  
Rev. 11  
Rev. 11  
Rev. 12 |
5. While certification will result in compliance with many code requirements, a Rater is not responsible for ensuring that all code requirements have been met prior to certification. For more information about how these program requirements help satisfy code provisions for living, sleeping, eating, cooking, and sanitation.

6. The term ‘Provider’ refers to an Approved Rating Provider, as defined by ANSI / RESNET / ICC 301, that is approved by an HCO.

7. HCOs are independent organizations recognized by EPA to implement an ENERGY STAR certification program for single-family and multifamily homes and apartments using an Energy Rating Index (ERI) compliance path. Learn more and find a current list of HCOs at www.energystar.gov/partner_resources/residential_new/working/other_participants/hco.

8. The term ‘Rater’ refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater or Approved Inspector, as defined by ANSI / RESNET / ICC 301, or an equivalent designation as determined by an HCO; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.

9. The software program shall automatically determine (i.e., without relying on a user-configured ENERGY STAR Reference Design) this target for each rated home by following the National ERI Target Procedure, Version 3.1 (Rev. 12), available at www.energystar.gov/newhomesrequirements.

10. Raters who operate under an HCO with a Sampling Protocol are permitted to verify the Minimum Rated Features of the home and to verify any Checklist Item designated “Rater Verified” using the HCO-approved Sampling Protocol. No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified home. For example, no items on the National HVAC Commissioning Checklist are permitted to be verified using a Sampling Protocol.

11. Note that the efficiency levels of ENERGY STAR certified products aligned with these product specifications when this Version was first released. These efficiency levels form the basis of the ENERGY STAR ERI Target, regardless of any subsequent revisions to the product specifications.
12. 2012 IECC Climate Zone designations, as defined and illustrated in Section R301 of the code, are used to configure the ENERGY STAR Reference Design Home.

13. Track A – HVAC Grading shall use ANSI / RESNET / ACCA / ICC 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO that the home is being certified under.

14. The Rater may define the ‘permit date’ as either the date that the permit was issued or the date of the contract on the home. In cases where permit or contract dates are not available, Providers have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented.

15. Homes certified under Rev. 12 of the program requirements are permitted to use either Rev. 08, 09, 10, 11, or 12 of the National HVAC Design Report.