

# ENERGY STAR<sup>®</sup>

## 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### Historical Document

This document is provided for reference because it has been superseded by a more recent Version or Revision.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](mailto:energystarhome@energystar.gov).



# California Program Requirements

## ENERGY STAR Multifamily New Construction, Version 1.2

### Eligibility Requirements

The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:

- Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling <sup>1</sup>; OR
- Mixed-use buildings, where dwelling units and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation <sup>2</sup>; OR
- Townhouses. <sup>3</sup>

Townhouses are also eligible to earn the ENERGY STAR through the ENERGY STAR Certified Homes program, which is a certification program for single family detached homes and two-family dwellings.<sup>1</sup> For more information, visit: [energystar.gov/newhomesrequirements](http://energystar.gov/newhomesrequirements). In addition, multifamily buildings with permit dates prior to January 1, 2021, may be eligible to earn the ENERGY STAR through the Certified Homes or Multifamily High Rise programs. <sup>4</sup> For more information, visit: [energystar.gov/mfhr/eligibility](http://energystar.gov/mfhr/eligibility).

Note that compliance with these requirements is not intended to imply compliance with all local code requirements that may be applicable to the building to be built. <sup>5</sup>

### Partnership, Training, and Credentialing Requirements

Builders, Developers, Raters, and Functional Testing Agents (“FT Agents”) must meet the following requirements prior to certifying multifamily buildings:

- The Builder or Developer for the project is required to sign an ENERGY STAR Partnership Agreement and complete the online “Builder / Developer Orientation”, which can be found at [energystar.gov/mfncPA](http://energystar.gov/mfncPA).
- FT Agents must meet one of the following:
  - The HVAC installing contractor AND credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this process can be found at [energystar.gov/credentialedHVAC](http://energystar.gov/credentialedHVAC); OR
  - Not the HVAC installing contractor, AND
    - Signed up online in EPA’s online database as an FT Agent and watched the online FT Agent orientation, which can be found at [energystar.gov/mftraining](http://energystar.gov/mftraining); AND
    - Meets one of the following: a Certified Commissioning Professional (CCP), a Certified Building Commissioning Professional (CBCP), a Building Commissioning Professional (BCxP, formerly the Commissioning Process Management Professional (CPMP)), a NEBB Certified Technician (BSC CxCT) or Certified Professional (BSC CP or CxPP), or a representative of the Original Equipment Manufacturer (OEM).
- Raters <sup>6</sup> are required to complete training, which can be found at [energystar.gov/mftraining](http://energystar.gov/mftraining).

### ENERGY STAR Certification Process <sup>7</sup>

1. The certification process provides flexibility to select a custom combination of measures for each building that meets one of two performance targets, as assessed through energy modeling. Select one of the two following performance targets:
  - a. For multifamily buildings that are less than 4 stories, where dwelling units are individually modeled, the performance target for each unit is defined as either a Compliance Total with  $\geq 10\%$  savings above the Compliance Total of the Standard Design corresponding to the unit or a Delta Energy Design Rating (Delta EDR) of  $\geq 3$  points, as determined by a CEC-approved software program, in accordance with 2016 or 2019 Building Energy Efficiency Standards. <sup>8</sup> On-site power generation may not be used to meet either of these above-code performance targets and must be demonstrated using the EDR score or Compliance Total that excludes photovoltaics. For projects in California that are permitted under the 2013 Building Energy Efficiency Standards, the performance target is 15%.
  - b. For all other multifamily buildings, where the whole building is modeled, the performance target is defined as a Compliance Total with  $\geq 10\%$  savings above the Compliance Total of the Standard Design corresponding to the building, as determined by a CEC-approved software program, in accordance with 2016 or 2019 Building Energy Efficiency Standards. <sup>8</sup> On-site power generation may not be used to meet the above-code performance target, though it is permitted to be used to satisfy code. For projects in California that are permitted under the 2013 Building Energy Efficiency Standards, the performance target is 15%.
2. Based on the path chosen, select the efficiency measures for the building:
  - a. Dwelling Unit modeling (Step 1a): Configure the preferred set of efficiency measures for the unit to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1a. For common spaces, meet the prescriptive requirements specified in the National Rater Design Review and Field Checklists, which align with the minimum requirements set in Exhibit 1. Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ERI”. Alternatively, when the common spaces are modeled in addition to the dwelling units and meet the performance targets in Step 1, the building qualifies for Step 2b, and the common spaces can instead meet the prescriptive requirements specified in the National Rater Design Review and Field Checklists associated with “ASHRAE”.
  - b. Whole-building modeling (Step 1b): Configure the preferred set of efficiency measures for the building to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1b. For common spaces, meet the prescriptive requirements specified in the National Rater Design Review and Field Checklists for common spaces. Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ASHRAE”. Whole-building modeling includes multifamily buildings that are less than 4 stories, when the common spaces are modeled in addition to the dwelling units and meet the performance targets in Step 1.



# California Program Requirements

## ENERGY STAR Multifamily New Construction, Version 1.2

Note that, regardless of the path chosen or the measures selected, the Mandatory Requirements for All Certified Multifamily Projects 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).

3. Upon completion of design, multifamily buildings may be eligible for the Designed to Earn the ENERGY STAR designation. To earn this optional additional designation, follow the guidance available at [energystar.gov/mfdees](http://energystar.gov/mfdees).
4. Upon completion of design, for whole-building modeling projects, specific documentation must be submitted to an MRO for their review and approval. These documents include the Performance Path Calculator, the Multifamily Workbook, construction documents, and either the modeling file or input and output files. MROs may choose to implement alternative design review requirements. MRO information can be found at [energystar.gov/mro](http://energystar.gov/mro)
5. Construct the building using the measures selected in Step 2 and the Mandatory Requirements for All Certified Multifamily Projects, Exhibit 2.
6. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Multifamily Projects and with Data Input requirements and On-Site Inspection Procedures for California HERS Ratings.<sup>6</sup> The Rater must review all items on the National Rater checklists. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).

In the event that a Rater finds an item that is inconsistent with the intent of the checklists, the project cannot earn the ENERGY STAR until the item is corrected. If correction of the item is not possible, the project cannot earn the ENERGY STAR and individual units in the multifamily project also cannot be certified. In the event that an item on a National Rater checklist cannot be inspected by the Rater, the project 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 and the sections on the National Rater Field Checklist where a Licensed Professional may assume responsibility for verifying the specified items. A Licensed Professional must be a Professional Engineer or Registered Architect in good standing and possess a current license. This option shall only be used at the discretion of the Rater. When exercised, the builder's and/or Licensed Professionals' responsibility will be formally acknowledged by the builder and/or Licensed Professional 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 or MRO. If the Provider or MRO also cannot make this determination, then the Rater, Provider, or MRO shall report the issue to EPA prior to project completion at: [mfnc@energystar.gov](mailto:mfnc@energystar.gov) and will typically 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 building 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 buildings permitted after a specified transition period after the release of the revised program requirements, typically 60 days in length.

This process will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the periodic release of revised program documents to ensure consistent application of the program requirements.

7. Upon completion of construction, the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. Additionally, the following steps are required:
  - a. Dwelling Unit modeling: register each unit in the building / project with the same CEC-approved HERS Provider.
  - b. Whole-building modeling: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval. These documents include the Performance Path Calculator, the Multifamily Workbook, construction documents, photo documentation, and either the modeling file or input and output files.



# California Program Requirements

## ENERGY STAR Multifamily New Construction, Version 1.2

### Exhibit 1: ENERGY STAR Multifamily Reference Design <sup>9</sup>

When common spaces are not modeled, some of the following features may be required, as specified in the National Rater Design Review and Field Checklists.

#### Common Space Applicability Notes:

When using the Reference Design for common space measures as specified in the National Rater Design Review and Rater Field Checklist, the following notes apply.

- 1) Heating and Cooling efficiencies for additional equipment are available in the Exhibit X of the National Rater Field Checklist.
- 2) 90% of all exterior and common space fixtures must be ENERGY STAR certified or meet the alternatives defined in the National Rater Field Checklist. This requirement applies to exterior lighting fixtures that are attached to the building, but does not apply to landscape or parking lot lighting fixtures.
- 3) Where an appliance type is not eligible for ENERGY STAR certification, (e.g., commercial dryers) the appliance is exempt from this requirement.

#### ENERGY STAR Multifamily Reference Design, California Version 1.2

Hot Climates (2009 IECC Zones 1,2,3) <sup>10</sup>	Mixed and Cold Climates (2009 IECC Zones 4,5,6,7,8) <sup>10</sup>																																				
<b>Cooling Equipment (Where Provided)</b>																																					
<ul style="list-style-type: none"> <li>Cooling equipment modeled at the applicable efficiency levels below <sup>11</sup>:</li> </ul>																																					
<ul style="list-style-type: none"> <li>15 SEER / 12 EER AC,</li> <li>Heat pump (See Heating Equipment)</li> </ul>	<ul style="list-style-type: none"> <li>CZ 4-8: 13 SEER AC,</li> <li>Heat pump (See Heating Equipment)</li> </ul>																																				
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<ul style="list-style-type: none"> <li>Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type <sup>11</sup>:</li> </ul>																																					
<ul style="list-style-type: none"> <li>80 AFUE gas furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE boiler,</li> <li>8.2 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> </ul>	<ul style="list-style-type: none"> <li>95 AFUE ENERGY STAR gas furnace,</li> <li>85 AFUE ENERGY STAR oil furnace,</li> <li>90 AFUE ENERGY STAR gas boiler,</li> <li>86 AFUE oil boiler,</li> <li>Heat pump, with efficiency as follows:               <ul style="list-style-type: none"> <li>CZ 4: 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,</li> <li>CZ 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,</li> <li>CZ 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup,</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> </ul> </li> </ul>																																				
<b>Envelope &amp; Windows</b>																																					
<ul style="list-style-type: none"> <li>Insulation must meet Quality Insulation Installation (QII) per California's Building Energy Efficiency Standards levels and meet or exceed 2012 IECC commercial levels. The required values should come from the "All Other" column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the 'Metal framed' row).<sup>1</sup></li> <li>Class AW windows must meet or exceed 2015 IgCC levels (Commercial window U-Factor requirements)</li> </ul>																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Climate Zone:</th> <th>CZ 1</th> <th>CZ 2</th> <th>CZ 3</th> <th>CZ 4</th> <th>CZ 4 C &amp; 5</th> <th>CZ 6</th> <th>CZ 7</th> <th>CZ 8</th> </tr> </thead> <tbody> <tr> <td><b>Fixed Window U-Factor:</b></td> <td>0.48</td> <td>0.48</td> <td>0.44</td> <td>0.36</td> <td>0.36</td> <td>0.34</td> <td>0.28</td> <td>0.28</td> </tr> <tr> <td><b>Operable Window U-Factor:</b></td> <td>0.62</td> <td>0.62</td> <td>0.57</td> <td>0.43</td> <td>0.43</td> <td>0.41</td> <td>0.35</td> <td>0.35</td> </tr> <tr> <td><b>SHGC</b></td> <td>0.25</td> <td>0.25</td> <td>0.25</td> <td>0.40</td> <td>0.40</td> <td>0.40</td> <td>any</td> <td>any</td> </tr> </tbody> </table>		Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	<b>Fixed Window U-Factor:</b>	0.48	0.48	0.44	0.36	0.36	0.34	0.28	0.28	<b>Operable Window U-Factor:</b>	0.62	0.62	0.57	0.43	0.43	0.41	0.35	0.35	<b>SHGC</b>	0.25	0.25	0.25	0.40	0.40	0.40	any	any
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<ul style="list-style-type: none"> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> </ul>																																					
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<b>Lighting, Appliances, &amp; Fixtures</b>																																					
<ul style="list-style-type: none"> <li>ENERGY STAR refrigerators, dishwashers, clothes washers, clothes dryers, and ceiling fans. <sup>11</sup></li> <li>ENERGY STAR light bulbs or fixtures in 90% of fixture locations. <sup>11</sup></li> <li>WaterSense showerheads. <sup>11</sup></li> </ul>																																					



# California Program Requirements

## ENERGY STAR Multifamily New Construction, Version 1.2

### Exhibit 2: Mandatory Requirements for All Certified Multifamily Projects

Party Responsible	Mandatory Requirements
<b>Rater</b>	<ul style="list-style-type: none"> <li>• Completion of National Rater Design Review Checklist</li> <li>• Completion of National Rater Field Checklist</li> </ul>
<b>HVAC System Designer</b>	<ul style="list-style-type: none"> <li>• Completion of National HVAC Design Report</li> </ul>
<b>Functional Testing Agent</b>	<ul style="list-style-type: none"> <li>• Completion of National HVAC Functional Testing Checklist</li> </ul>
<b>Builder or Developer</b>	<ul style="list-style-type: none"> <li>• Completion of National Water Management System Requirements</li> </ul>

#### Effective Date

To determine the program Version that a multifamily building is required to be certified under, look up the plan approval date and permit issue date of the building in Exhibit 3. Program requirements for other locations can be found at [energystar.gov/mfcnrequirements](http://energystar.gov/mfcnrequirements).

This Exhibit contains all implementation timelines applicable on or after September 1, 2016. Implementation timelines applicable prior to this date can be obtained by contacting [mfcn@energystar.gov](mailto:mfcn@energystar.gov). Multifamily buildings permitted prior to January 1, 2021 are permitted to participate in any of the following programs, as long as the project meets the Eligibility Requirements defined within that program: the ENERGY STAR Certified Homes program, the ENERGY STAR Multifamily High Rise program, or this ENERGY STAR Multifamily New Construction Program.

### Exhibit 3: ENERGY STAR Multifamily New Construction Implementation Timeline for California

State / Territory	Buildings With Plan Approval date and Permit Issue Date <sup>4</sup> On or After This Date Must Meet the Adjacent Version	Multifamily New Construction Program Version
CA	01-01-2021	California Version 1.2



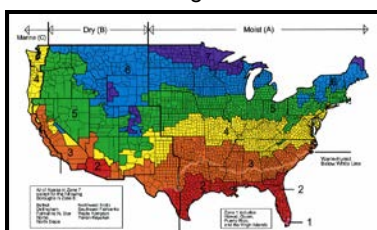
# California Program Requirements

## ENERGY STAR Multifamily New Construction, Version 1.2

### Footnotes:

1. The term 'building' refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the 'building'. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term 'sleeping unit' refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term 'two-family' dwelling refers to a detached building with 2 dwelling units.
2. The term 'common space' refers to any spaces on the property that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, or parking garages used exclusively by residents, building staff, and their guests. This also includes offices used by building management, administration or maintenance and all special use areas located on the property to serve and support the residents such as day-care facilities, gyms, dining halls, etc.
3. The term 'townhouse' refers to a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.
4. The Rater may define the 'permit date' as either the date that the permit was issued or the application date of the permit. In cases where permit or application dates are not available, Providers or Multifamily Oversight Organizations have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented. The 'plan approval date' is the date that a jurisdiction approves a building plan and its efficiency features for use on a specific lot or tract.
5. 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. Where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
  - b. Where overlapping requirements conflict with a requirement of the ENERGY STAR program (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these program requirements shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement (e.g., switching from exterior to interior slab edge insulation). Note that a project must still meet its Performance Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.
6. The term 'Rater' refers to the person completing the third-party inspections required for certification. This person shall: a) be a Certified Rater, Approved Inspector, or an equivalent designation as determined by a Verification Oversight Organization or Multifamily Review Organization; and, b) have attended and successfully completed an EPA-recognized training class. See [energystar.gov/mftraining](http://energystar.gov/mftraining).

Raters who operate under an MRO or a Sampling Provider are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated "Rater Verified" using the CEC-approved sampling protocol for projects in CA. Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the *RESNET Guidelines for Multifamily Energy Ratings*, available at [resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/](http://resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/). No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified building. For example, no items on the National HVAC Functional Testing Checklist are permitted to be verified using a sampling protocol.
7. These requirements apply to all dwelling units, sleeping units, most common spaces <sup>2</sup> on the property, and parking lots. These requirements do not apply to commercial or retail spaces. These requirements do not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units.
8. Information on the Delta EDR can be found at: [cahp-pge.com/how-to-generate-your-delta-energy-design-rating/](http://cahp-pge.com/how-to-generate-your-delta-energy-design-rating/). CEC-approved computer programs can be found at: [energy.ca.gov/title24/2016standards/2016\\_computer\\_prog\\_list.html](http://energy.ca.gov/title24/2016standards/2016_computer_prog_list.html).
9. Note that the efficiency levels of ENERGY STAR certified products aligned with these product specifications when this Version was first released. These efficiency features form the basis of the ENERGY STAR Multifamily Reference Design, regardless of any subsequent revisions to ENERGY STAR certified product specifications. EPA recommends, but does not require, that current ENERGY STAR products be included in ENERGY STAR buildings. For current ENERGY STAR products, visit [energystar.gov/products](http://energystar.gov/products).
10. The Climate Zone boundaries are illustrated by the 2009 IECC Figure R301.1.



11. When using the Reference Design for common space measures as specified in the National Rater Design Review and Rater Field Checklist, first review the Common Space Applicability Notes that are included in Exhibit 1.