Current Zero Energy Ready Home (ZERH) Multifamily Version 2 Policy Record

(National & California program versions)

Last Updated: October 16, 2024

How to Use this Document

DOE regularly receives partner questions and comments regarding various aspects of the program documents. This document is a record of significant issues that have been received since the release of the last revision to the program documents. These issues are either pending resolution by DOE or have been resolved, sometimes resulting in modifications that will be incorporated into the next revision of the program documents. The primary purpose of this document is to allow all partners to have equal access to the latest policy issues and resolutions.

DOE intends to formally incorporate policy modifications into the next revision of the program documents. Those edits will then be enforced for homes permitted after a specified transition period, typically at least 60 days from the release of the revised program requirements. Partners may, at their discretion, use the determinations in this document immediately, in advance of the formal implementation dates. If they do so, they should be sure to document the permit dates of the affected homes and to include a copy of the policy record in the files retained by the Verifier or Rater. Should the need arise, this will allow partners to demonstrate that they acted with the best information available. Items are listed below in chronological order, by log date. Once policy record items have been incorporated into the latest document Revision, they will be marked "Incorporated" in the Program Document(s) Affected field and the Topic, Issue, and Resolution fields will be shaded in light gray.

Definitions

Each issue listed here is classified as a Change, Clarification, Refinement, Comment, or an Issue Under Review. These are defined as follows:

- Change: The addition, deletion, or modification of a program requirement. A change will typically result from a partner question or feedback indicating that DOE's original intent is not being met or from changes in relevant standards. A change is the most significant type of edit for partners because it is likely to change the way that partners comply with the program.
- Clarification: The clarification of a program requirement, typically resulting from a partner question indicating confusion or ambiguity. Clarifications are not intended to significantly change the scope of the program guidelines, but rather to clarify the original intent of the requirement. A clarification is secondary in importance to a change; it should not significantly alter the way that most partners comply with the program.
- Refinement: A minor revision, such as an improved choice of words, a grammatical correction, or a correction to a typographical error. A refinement is the least important type of edit; it should have no impact on the way that partners comply with the program.
- Comment: A comment provided by DOE in response to a question, which results in no change to the program documents. This may occur, for example, if the question can be answered by referring to already established policy. Aside from the partner asking the question, such comments will typically have no impact on the way that partners comply with the program.
- Issue Under Review: An issue that has been submitted and that DOE is still evaluating. Once DOE has evaluated the issue, it will offer a resolution and reclassify the issue using one of the four categories above.

Current Zero Energy Ready Home (ZERH) Multifamily Version 2 Policy Record

ID	MFV2.016	**Log Date**	10/16/2024	**Classification**	Change
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2)			
Topic	Townhome certification eligibility				
Issue	In order to simplify ZERH program implementation and maintain consistency with the ENERGY STAR Residential New Construction program, townhomes permitted on or after 1/1/2026 will not be eligible for certification under the DOE ZERH Multifamily Version 2 program. Townhouses are eligible to participate in the DOE ZERH Single Family program.				
Resolution	**Section 1 (Building Eligibility Requirements) of the National Program Requirements (Version 2) will be updated as follows:** Eligible building types: • Any multifamily building…detached dwelling. • Any mixed-use buildings…from this calculation. • Townhouses <u>with permit dates on or before 12/31/2025</u> ~~if following~~ <u>Townhouses must follow requirements</u> listed in the endnote. (1) (1) [no changes to endnote]				
ID	MFV2.015	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2), National Rater Checklist (Version 2), California Program Requirements (Version 2), California Rater Checklist (Version 2)			
Topic	Addition of advisory language encouraging partners to use the HVI CPD to source equipment meeting the mandatory H/ERV requirement in cold climates.				
Issue	Following discussions with a program stakeholder, DOE has determined that an advisory note referencing the HVI Certified Products Directory (CPD) as an option for sourcing the specifications needed to demonstrate compliance with mandatory requirement 7.2 (in both the National and California Single Family Version 2 specifications) could be helpful for program partners. This advisory language will serve to increase industry awareness of the CPD resource and streamline compliance for builders using listed products.				
Resolution	**A new endnote will be added to the Indoor Air Quality mandatory requirement in the National (Version 2) and California (Version 2) Program Requirements and the National (Version 2) and California (Version 2) Rater Checklists as follows:** 7.2 Either in-unit or centralized energy efficient balanced ventilation (HRV or ERV) is provided for dwelling units in Climate Zones 6-8. (1, <u>2</u>) (1) [no change]				

	(2) Advisory: DOE encourages, but does not require, that partners use equipment listed in the Home Ventilating Institute (HVI) Certified Products Directory (CPD) to comply with this requirement. The listing may be used to demonstrate compliance with this program requirement.				
ID	MFV2.014	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Rater Checklist (Version 2)			
Topic	Prescriptive path HVAC efficiency verification				
Issue	Projects following the Prescriptive path are required to meet the ZERH Multifamily Version 2 efficiency target by meeting or exceeding each specified efficiency measure in the Target Dwelling Design (Exhibit 2). While Raters are required to enter all efficiency specifications in the Multifamily Workbook with ZERH Addenda, there are not currently stand-alone line items for verifying each of these measures for Prescriptive path projects in the Rater Checklist. Since a building's HVAC system efficiency is critical to achieving the efficiency expected of a ZERH-certified building, in order to improve verification and increase transparency regarding this critical efficiency requirement under the Prescriptive path, DOE will add minimum HVAC efficiency specifications to the National Rater Checklist for Prescriptive path projects.				
Resolution	**A new line item will be added to the National Rater Checklist (Version 2) as follows:** 12.3. For Prescriptive path projects: HVAC system meets or exceed efficiency levels based on climate zone and system type as defined by Exhibit 2 of the ZERH Multifamily Version 2 National Program Requirements.				
ID	MFV2.013	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2); California Program Requirements (Version 2); California Rater Checklist (Version 2)			
Topic	All building types eligible for certification under the ENERGY STAR Multifamily New Construction program, Version 1.2, are eligible for certification under the ZERH Multifamily Version 2 program				
Issue	The intent of all building definition language in the ZERH program documents is to align with the ENERGY STAR program. However, partners ask for clarification regarding this aspect of the program. In order to maximize clarity regarding building type eligibility for the ZERH Multifamily Version 2 program, DOE will state this directly in the ZERH program documents.				
Resolution	**Endnote 1 in the National Program Requirements (Version 2), National Rater Checklist (Version 2), California Program Requirements (Version 2), and California Rater Checklist (Version 2) will be updated as follows:** (1) … is not considered a common entrance or exit. DOE adopts these parameters from the ENERGY STAR program, thus, building type eligibility for certification under ZERH Multifamily Version 2 is the same as building type eligibility for certification under ENERGY STAR Multifamily New Construction Version 1.2 (California: 1.4).				
ID	MFV2.012	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2); California Program Requirements (Version 2); California Rater Checklist (Version 2)			

Topic	Sampling is only allowed for apartments within the same building
Issue	In the HCO for ZERH certification system, a sampling protocol, if used, must "require that apartments participating in sampling be within the same building, be the same construction type, and include the same envelope systems." In order to improve clarity for partners on this sampling provision, DOE will add language to the ZERH Multifamily program documents.
Resolution	**The following sentence will be added to endnote 7 in the National Program Requirements (Version 2):** Sampling of these ZERH program requirements may be allowed if the Multifamily Review Organization (MRO) for ZERH or Home Certification Organization (HCO) for ZERH overseeing the project's certification has a sampling protocol approved by DOE as part of the MRO/HCO for ZERH approval process. Apartments participating in sampling must be within the same building, be the same construction type, and include the same envelope systems. **The following sentence will be added to endnote 2 in the National Rater Checklist (Version 2):** As stated in the National Program Requirements, Raters who operate under an MRO or HCO for ZERH with a Sampling Protocol are permitted to verify any Checklist Item designated "Rater Verified" using an MRO or HCO for ZERH-approved sampling protocol. No parties other than Raters are permitted to use sampling to complete this Checklist. Apartments participating in sampling must be within the same building, be the same construction type, and include the same envelope systems. **The following sentence will be added to endnote 9 in the California Program Requirements (Version 2):** The term 'Rater' refers to the person(s) completing the third-party verification required for certification. Raters who operate under an MRO or HCO for ZERH with a Sampling Protocol are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated "Rater Verified" using an MRO or HCO-approved sampling protocol. No parties other than Raters are permitted to use sampling to complete the Checklist. All other items shall be verified for each certified building. For example, no builder verified items are permitted to be verified using a sampling protocol. Apartments participating in sampling must be within the same building, be the same construction type, and include the same envelope systems. **The following sentence will be added to endnote 2 in the California Rater Checklist (Version 2):** As stated in the Program Requirements, Raters who operate under an MRO or HCO for ZERH with a Sampling Protocol are permitted to verify any Checklist Item designated "Rater Verified" using an MRO or HCO for ZERH-approved sampling protocol. No parties other than Raters are permitted to use sampling to complete this Checklist. All other items shall be verified for each certified building. For example, no builder verified items are permitted to be verified using a sampling protocol. Apartments participating in sampling must be within the same building, be the same construction type, and include the same envelope systems.

ID	MFV2.011	**Log Date**	10/16/2024	**Classification**	Change
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2)			

<table>
<tr><td>Topic</td><td colspan="5">Use of DOE's ASHRAE Standard 90.1 Performance Based Compliance Form Companion Tool</td></tr>
<tr><td>Issue</td><td colspan="5">Since the initial publication of ZERH Multifamily Version 2, DOE has developed an Excel tool called the "ASHRAE Standard 90.1 Performance Based Compliance Form Companion Tool." This tool is meant to help projects document compliance with above-code programs, including ZERH Multifamily Version 2's ASHRAE 90.1-based compliance path. DOE and EPA have coordinated to customize a version of this tool for partners working with the ENERGY STAR Multifamily New Construction and ZERH Multifamily Version 2 programs, available on the ZERH program website. The tool uses a data upload from DOE's ASHRAE Standard 90.1 Performance Based Compliance Form (which is already required for the ZERH Multifamily Version 2 program) to show compliance with the ZERH performance target. It also contains information on specific modeling rules to be used for the 90.1 compliance path for the ZERH Multifamily Version 2 program. This tool is now ***required*** as part of the documentation package to demonstrate compliance with the ZERH Multifamily Version 2 program.</td></tr>
<tr><td>Resolution</td><td colspan="5">The section of the table in Exhibit 4 of the National Program Requirements Version 2 which lists required document submittals for ASHRAE Path Only projects will be updated as follows:
<table>
<tr><th>Party Responsible</th><th>Documents</th></tr>
<tr><td colspan="2">Requirements Applicable to the ASHRAE Path Only</td></tr>
<tr><td rowspan="3">ASHRAE Modeler</td><td>ASHRAE Standard 90.1 Performance Based Compliance Form</td></tr>
<tr><td><u>ESMFNC/ZERH Companion Tool to the ASHRAE Standard 90.1 Performance Based Compliance Form</u></td></tr>
<tr><td>Modeling file or modeling input and output files</td></tr>
</table></td></tr>
<tr><td>ID</td><td>MFV2.010</td><td>Log Date</td><td>10/16/2024</td><td>Classification</td><td>Change</td></tr>
<tr><td colspan="2">Program Document(s) Affected</td><td colspan="4">INCORPORATED: EV-Ready Checklist (Version 2)</td></tr>
<tr><td>Topic</td><td colspan="5">Re-alignment of EV-Ready Checklist with 2024 IECC, Appendix RE</td></tr>
<tr><td>Issue</td><td colspan="5">To improve clarity, the ZERH Multifamily EV-Ready requirements will be updated to align more closely with the Residential rather than the Commercial chapter of the 2024 IECC. Because the Residential chapter's Appendix RE was designed specifically with residential occupancies in mind, the requirements are structured to more readily apply to multifamily scenarios and provide slightly reduced circuit capacity requirements due to longer dwell times in residential parking lots and garages, as opposed to commercial spaces where there are typically shorter duration parking dwell times.</td></tr>
<tr><td>Resolution</td><td colspan="5">The EV-Ready Checklist (Version 2) will be restructured and include adjusted requirements as follows:
(For clarity and conciseness, only changes affecting compliance with the checklist's requirements are noted in strikethrough and underline.)

Updates to Item 2:
2b. The raceway or assembly and panelboard (or other electrical distribution equipment) are sized and rated to supply a system capacity not less than:
• ~~7.2~~ <u>6.2</u> kVA per space, if serving a single space or serving multiple spaces without an energy management system.
• ~~3.3~~ <u>2.1</u> kVA per space, if serving multiple spaces with an energy management system.
Updates to Item 3:</td></tr>
</table>

	3b. Circuit and panelboard (or other electrical distribution equipment) are sized and rated to supply a system capacity not less than: • ~~7.2~~ 6.2 kVA per space, if serving a single space or serving multiple spaces without an energy management system. • ~~3.3~~ 2.1 kVA per space, if serving multiple spaces with an energy management system. **Updates to Item 4:** 4b. Circuit and panelboard (or other electrical distribution equipment) serving EVSE are sized and rated to supply a system capacity not less than: • ~~7.2~~ 6.2 kVA per space, if serving a single space or serving multiple spaces without an energy management system. • ~~3.3~~ 2.1 kVA per space, if serving multiple spaces with an energy management system. 4c. Nameplate charging capacity of installed EVSE is not less than: • ~~6.2 kW~~ 6.2 kVA (30A and 208/240V) per space, if serving a single space or serving multiple spaces without an energy management system. • 2.1 kVA per space (10A at 208/240V), if serving multiple spaces with an energy management system.

ID	MFV2.009	**Log Date**	10/16/2024	**Classification**	Change
Program Document(s) Affected		INCORPORATED: EV-Ready Checklist (Version 2)			
Topic	Addition of Low-Power Level 2 option in EV-Ready Checklist				
Issue	In order to improve design flexibility associated with the installation of ZERH Multifamily Version 2's current EV readiness requirements, DOE will include an alternative option for Low-Power Level 2 to meet the requirements of the EV-Ready checklist. Based on partner feedback, an option to increase the number of EVSE spaces but reduce the required capacity for these spaces provides design flexibility and can provide more parking spaces with EVSE. DOE has determined that a reduced charging capacity is reasonable given the typical parking dwell times in multifamily buildings, especially if the overall number of EVSE spaces is increased.				
Resolution	**Item 1 in the EV-Ready Checklist (Version 2) will be updated as follows** (note that this entry already incorporates changes established by MFV2.008)**:** Allocated parking for dwelling units in multifamily or mixed-use buildings are provided with an EV Capable, EV Ready, or EVSE space for 20% of units or automobile parking spaces, whichever is less. See endnotes for parking that is shared by multiple buildings (1) and alternative percentage requirements for Low-Power Level 2 (L2) charging (2). The following minimum types of spaces… [no further changes]. (1) [no changes] (2) Projects that do not include an energy management system may opt to reduce the capacity of EVSE spaces (and associated circuit and panel board/distribution equipment) to a nameplate rating less than 6.2 kW (but no less than 3.3 kW, or 16A at 208/240V), if the percentage of EVSE spaces is increased from 10% to 20% of units or automobile parking spaces, whichever is less. If this alternative is used, the project is not required to provide any additional EV Ready or EV Capable spaces.				
ID	MFV2.008	**Log Date**	10/16/2024	**Classification**	Clarification

Program Document(s) Affected	INCORPORATED: EV-Ready Checklist (Version 2)				
Topic	Calculating the required number of EV Capable, EV Ready, and EVSE spaces				
Issue	ZERH Multifamily Version 2 requires that 20% of parking spaces be EVSE, EV Ready, or EV Capable, where 10% must be EVSE and the remaining 10% may be any combination of these three space types. Due to a partner's confusion regarding how to calculate these values and round appropriately (the requirements state that spaces must be rounded up to the nearest whole number), DOE will add clarifying language regarding this calculation and include an endnote with an example calculation.				
Resolution	**Item 1 in the EV-Ready Checklist (Version 2) will be updated as follows:** Allocated parking for dwelling units in multifamily or mixed-use buildings ~~shall be~~ are provided with an EV Capable ~~space~~, EV Ready ~~space~~, or EVSE space for 20% of units or automobile parking spaces, whichever is less. ~~For parking that is shared by multiple buildings,~~ See endnotes for parking that is shared by multiple buildings (1). ~~To meet this 20% threshold,~~ The following minimum types of spaces are provided (2): • 10% of the ~~total (based on units or automobile parking spaces)~~ spaces provided must be EVSE spaces. • ~~The remaining~~ 10% ~~of the total~~ of the spaces provided may be any combination of EVSE, EV Capable, or EV Ready spaces. ~~The number of required compliant spaces shall be rounded up to the nearest whole number.~~ ~~Townhouses certifying under the ZERH Multifamily V2 program must meet alternative EV Ready requirements.~~ Advisory: DOE intends to raise ~~the percentages of EVSE, EV Ready, and EV Capable spaces~~ these percentages in a future program update. (1) [no changes] (2)To determine the number of EVSE, EV-Ready, and EV-Capable spaces required for a project: 1. Calculate the number of spaces equal to 20% of spaces provided for resident parking or 20% of dwelling units, whichever is less. Round up to the next whole number. 2. At least half of these spaces must be EVSE. The remaining spaces may be any combination of EVSE, EV Ready, and/or EV Capable. *For example, a building with 70 dwelling units and 62 spaces provided for resident parking would require at least 7 EVSE spaces and 6 EVSE, EV Ready, or EV Capable spaces.* 1. *20% of 62 = 12.4, rounded up to the next whole number = 13* 2. *At least half of 13 must be EVSE (7). The remaining 6 may be any combination of EVSE, EV Ready, and EV Capable.*				
ID	MFV2.007	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected	INCORPORATED: National Program Requirements (Version 2)				
Topic	Equivalent envelope R values for Prescriptive path projects				

Issue	Projects following ZERH Multifamily Version 2's Prescriptive path are required to meet or exceed the envelope efficiency levels found in Exhibit 2 of the National Program Requirements (Target Dwelling Design). Projects may use a total UA, a component U-factor, or component R-value. The endnotes specify how to determine the appropriate values and calculations to use for the UA and U-factor component methods, but there is no guidance for projects that prefer to meet or exceed the Target Dwelling's envelope insulation levels using component R-values. Because the Target Dwelling's envelope backstop comes from the 2021 IECC, the intent is for the R-values in the 2021 IECC to represent the required R-values for the Target Home even though only the U factors are present in Exhibit 2. To add clarity for partners who wish to use component R-values under the prescriptive path, this option will be clarified in the endnote that explains how Prescriptive path projects comply with the envelope insulation requirements.				
Resolution	**Endnote 21 in the National Program Requirements (Version 2) will be updated as follows:** … All opaque envelope components which are part of dwelling units must meet or exceed values listed in the DOE ZERH Multifamily National Program Requirements Version 2, Exhibit 2: Envelope, Windows, and Doors for Dwelling Units. <u>Equivalent R values to the U values provided in Exhibit 2 may be taken from the 2021 IECC, Table R402.1.3. When using R values to demonstrate compliance for steel-frame assemblies, the steel-frame equivalent R-value from Table 402.2.6 must be used.</u> All windows which are part of dwelling units must meet or exceed U-values listed in the ZERH Mandatory window provisions (see next endnote). [no further changes to endnote]				
ID	MFV2.006	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2); California Program Requirements (Version 2); California Rater Checklist (Version 2)			
Topic	WaterSense certification of bathroom sink faucets and aerators				
Issue	The Multifamily program requirements currently state that dwelling units must have WaterSense labeled bath faucets. However, the intent of this requirement is to include WaterSense labeled bathroom *sink* faucets, rather than bathtub filler faucets. To improve the clarity of this line item and align with the ZERH Single Family Version 2 program requirements, all ZERH Multifamily program documents will be updated to specify that bathroom sink faucets must be WaterSense labeled, rather than simply stating that bath faucets must be WaterSense labeled. Additionally, because aerators are only one type of flow control technology, and others exist that would serve the same function (to make a non-WaterSense labeled fixture compliant with this requirement by adding a WaterSense labeled flow control accessory), the term aerator will be adjusted. While it is common to use the term "aerator" to describe this whole category of accessories, it is more accurate to use the term "accessories."				
Resolution	**The line item relating the requirement for WaterSense certified fixtures in the National Program Requirements Version 2, National Rater Checklist Version 2, California Program Requirements Version 2, and California Rater Checklist Version 2 will be updated as follows:** WaterSense labeled fixtures for dwelling unit showerheads~~, bath faucets,~~ <u>and bathroom sink faucets and/or faucet accessories</u> ~~and aerators~~. [no changes to endnotes]				
ID	MFV2.005	**Log Date**	10/16/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2), ERI Target Procedure (Version 2)			

<table>
<tr><td>Topic</td><td>Addition of a total duct leakage requirement (not just leakage to outside) in the target home</td></tr>
<tr><td>Issue</td><td>ZERH requires the target home to be configured with Grade I blower fan airflow deviation and Grade I blower fan watt draw efficiency. However, because of the HVAC Grading procedure in Standard 310, Grade I cannot be achieved for these two metrics unless Grade I is also achieved for total duct leakage. Currently, the ZERH target for duct leakage to the outside is zero, but the program does not include an explicit target home specification for total duct leakage. Because of this, in situations where the design has high total duct leakage, the target home could receive Grade II or III ratings for blower fan airflow deviation and blower fan watt draw efficiency, impacting the ZERH ERI Target Score. To eliminate this issue, the Target Dwelling Unit should be configured with Grade I total duct leakage.</td></tr>
<tr><td>Resolution</td><td>Exhibit 2 of the National Program Requirements Version 2 will be updated as follows:

<table>
<tr><th colspan="4">HVAC Grading for Residential Heating and Cooling Equipment (where provided) in Dwelling Units</th></tr>
<tr><th><u>Total Duct Leakage</u></th><th>Airflow Deviation</th><th>Watt Draw Efficiency</th><th>Refrigerant Grade (as applicable)</th></tr>
<tr><td><u>Grade I (1)</u></td><td>Grade I, -7.5%</td><td>Grade I, 0.45 W/cfm</td><td>Grade III</td></tr>
</table>

<u>(1) The Target Home’s duct leakage shall be configured as the maximum allowable total duct leakage to achieve Grade I, per Standard 310, section 5.4.1, Table 2a (shown below):</u>

<table>
<tr><th><u>Time of Test</u></th><th><u>Number of Returns</u></th><th><u>Leakage Limit (CFM at 25 Pa)</u></th></tr>
<tr><td><u>Rough-In</u></td><td><u>< 3</u></td><td><u>The greater of ≤ 4 per 100 ft^2 of CFA or ≤ 40</u></td></tr>
<tr><td><u>Rough-In</u></td><td><u>≥ 3</u></td><td><u>The greater of ≤ 6 per 100 ft^2 of CFA or ≤ 60</u></td></tr>
<tr><td><u>Final</u></td><td><u>< 3</u></td><td><u>The greater of ≤ 8 per 100 ft^2 of CFA or ≤ 80</u></td></tr>
<tr><td><u>Final</u></td><td><u>≥ 3</u></td><td><u>The greater of ≤ 12 per 100 ft^2 of CFA or ≤ 120</u></td></tr>
</table>

Exhibit 1 of the ERI Target Procedure Version 2 will be updated as follows:

<table>
<tr><td>Building Component: Heating Systems</td></tr>
<tr><td>Installation Quality: For forced-air HVAC systems, <u>Grade I total duct leakage (1),</u> Grade I (-7.5%) blower fan airflow deviation, Grade I (0.45 Watts/CFM) blower fan watt draw efficiency, and for air-source heat pumps, Grade III refrigerant undercharge.</td></tr>
<tr><td>Building Component: Cooling Systems</td></tr>
<tr><td>Installation Quality: For forced-air HVAC systems, <u>Grade I total duct leakage (1),</u> Grade I (-7.5%) blower fan airflow deviation; Grade I (0.45 Watts/CFM) Watt draw efficiency, and for A/Cs and air-source heat pumps, Grade III refrigerant undercharge.</td></tr>
</table>

<u>(1) The Target Home’s duct leakage shall be configured as the maximum allowable total duct leakage to achieve Grade I, per Standard 310, section 5.4.1, Table 2a (shown below):</u>

<table>
<tr><th><u>Time of Test</u></th><th><u>Number of Returns</u></th><th><u>Leakage Limit (CFM at 25 Pa)</u></th></tr>
</table>
</td></tr>
</table>

Rough-In	< 3	The greater of ≤ 4 per 100 ft^2 of CFA or ≤ 40
Rough-In	≥ 3	The greater of ≤ 6 per 100 ft^2 of CFA or ≤ 60
Final	< 3	The greater of ≤ 8 per 100 ft^2 of CFA or ≤ 80
Final	≥ 3	The greater of ≤ 12 per 100 ft^2 of CFA or ≤ 120

ID	MFV2.004	**Log Date**	3/20/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2)			
Topic	Adding "National" to the title for the Energy Star prerequisite				
Issue	Both the ENERGY STAR and Zero Energy Ready Home programs have location-specific program requirements for the state of CA, as well as program requirements which are nationally applicable. Exhibit 1 of the ZERH Multifamily Version 2 National Program Requirements and Item 2.1 of the ZERH Multifamily Version 2 National Rater Checklist both include the ENERGY STAR prerequisite requirement but do not include the term "National" in the program title. In order to clarify this requirement and prevent any confusion, the term "national" will be added to the ENERGY STAR title in both documents, as it appears in the ENERGY STAR Multifamily New Construction National Program, Version 1.2 materials.				
Resolution	**Exhibit 1, Item 2 in the Multifamily Version 2 National Program Requirements will be updated as follows:** 2. Building is certified under ENERGY STAR Multifamily New Construction National Program Version 1.2. [no edits to endnotes] **Item 2.1 of the Multifamily Version 2 National Rater Checklist will be updated as follows:** 2.1 Unit is certified under ENERGY STAR Multifamily New Construction National Program Version 1.2. [no edits to endnotes]				

ID	MFV2.003	**Log Date**	3/20/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: EV-Ready Checklist (Version 2)			
Topic	Definition of energy management system for electric vehicle charging				
Issue	Requirement 5a.2 in the Multifamily EV-Ready Checklist Version 2 refers to parking spaces for electric vehicles that are controlled by an energy management system. However, the term "energy management system" is not currently clearly defined and led to partner inquiries if certain charging equipment met this requirement.				
Resolution	**The Multifamily EV-Ready Checklist Version 2 item 5a.2 will be revised as follows:** For spaces controlled by an energy management system (1): The maximum equipment load on the electrical distribution equipment supplying the branch circuit(s) serving spaces controlled by an energy management system shall be the maximum load permitted by the energy management system, but not less than 3.3 kVA per space. (Mark N/A if energy management system is not in place.)				

	(1) An energy management system is defined as a system of one or more monitors, controllers, communications systems, or other devices used to control electric vehicle charging loads by increasing or reducing electric power supplied to the vehicle charging location.

ID	MFV2.002	**Log Date**	3/20/2024	**Classification**	Clarification
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2); California Program Requirements (Version 2); California Rater Checklist (Version 2)			
Topic	Domestic hot water system storage limit requirements				
Issue	The current water heating efficiency requirements allow a stored volume limit of 1.8 gallons between the water heater (or recirculation loop) and the furthest fixture. However, the "furthest fixture" is not clearly defined and has led to partner inquiries regarding this requirement's applicability to fixtures that are not located in bathrooms. The program's intent is to require all hot water fixtures (including, but not limited to, bathroom, kitchen, and utility fixtures) to comply with these requirements. One exception are fixtures located in bathrooms that do not contain a shower or tub, which have a lower hot water demand profile. Language clarifying this requirement and the exception for bathrooms without a tub or shower will be included as noted below.				
Resolution	**The mandatory water heating efficiency requirement (items 5.2 and 5.3) in the National Program Requirements Version 2 and National Rater Checklist Version 2 will be revised as follows:** 5.2 Hot water delivery systems meet stored volume criteria. (1) 5.3 In-dwelling unit recirculation systems use on-demand controls. (2) (1) Hot water delivery systems meet the following efficiency requirements: To minimize water wasted while waiting for hot water and water heating energy, the hot water distribution system shall store no more than 1.8 gallons (6.8 liters) of water in any piping/manifold between the hot water source (e.g., central or in-unit hot water tank, central or in-unit recirculation loop) and any in-dwelling hot water fixture. This provision applies to in-dwelling unit plumbing systems and central hot water distribution systems. In-dwelling unit system options include manifold-fed systems; structured plumbing systems; core plumbing layouts, and recirculation systems. This provision does not apply to fixtures in dwelling unit bathrooms without a shower or bathtub. [no further changes to endnote] (2) In-dwelling unit hot water recirculation systems meet the following requirements:				

a. Must be based on an occupant-controlled switch or an occupancy sensor. ~~, installed in each bathroom~~ A sensor or switch must be installed for each fixture or set of fixtures within a room (e.g., a bathroom with multiple fixtures) in the dwelling unit ~~which is~~ located beyond a 1.8 gallon stored-volume range from the water heater or central recirculation loop.

[no further changes to endnote]

The mandatory water heating efficiency requirement (items 5.1 and 5.3) in the California Program Requirements (Version 2), and California Rater Checklist (Version 2) will be revised as follows:

5.1 Hot water distribution system (HWDS) qualifies as HERS-Verified Compact HWDS as specified in BEES Reference Appendix (RA) RA3.6.5 (1) for units with in-unit water heaters ***or*** hot water delivery systems (in-unit or central) meet stored volume criteria. (2)
5.3 In-dwelling unit recirculation systems use on-demand controls. (3)

(1) [no changes]

(2) Hot water delivery systems meet the following efficiency requirements:
To minimize water wasted while waiting for hot water and water heating energy, the hot water distribution system shall store no more than 1.8 gallons (4.5 liters) of water in any piping/manifold between the hot water source and any hot water fixture. This provision applies to in-dwelling unit plumbing systems and central hot water distribution systems. System options include manifold-fed systems; structured plumbing systems; core plumbing layouts, and recirculation systems. This provision does not apply to fixtures in dwelling unit bathrooms without a shower or bathtub.

[no further changes to endnote]

(3) In-dwelling unit hot water recirculation systems meet the following control requirements (these provisions do not apply to recirculating central hot water distribution systems):

a. Must be based on an occupant-controlled switch or an occupancy sensor. ~~, installed in each bathroom~~ A sensor or switch must be installed for each fixture or set of fixtures (e.g., bathrooms with multiple fixtures) in the dwelling unit ~~which is~~ located beyond a 1.8 gallon stored-volume range from the water heater or central recirculation loop.

[no further changes to endnote]

ID	MFV2.001	**Log Date**	3/20/2024	**Classification**	Change
Program Document(s) Affected		INCORPORATED: National Program Requirements (Version 2); National Rater Checklist (Version 2); California Program Requirements (Version 2); California Rater Checklist (Version 2)			
Topic	Exception to HPWH readiness requirement for condensate drain				

Issue	If the installed water heater is a tankless system or an electric system, the 3’x3’x7’ space for HPWH readiness is not required. Therefore, one can expect that the unit will not install a heat pump water heater in the future without significant renovations. This means that a condensate drain is also not required.
Resolution	**The endnote associated with the mandatory heat pump water heating ready requirement (item 10.2) in the National Program Requirements Version 2, National Rater Checklist Version 2, California Program Requirements Version 2, and California Rater Checklist Version 2 will be revised as follows:** Drain is no more than two inches higher than the base of the installed water heater and allows draining without pump assistance. Drain is not required to be reserved exclusively for use with a future heat pump water heater. Drain does not need to be provided if the installed water heater is a tankless water heater system or an electric system with a tank volume less than 50 gallons.