

**Version Tracking Document for
ENERGY STAR Qualified Homes, Version 3 (Rev. 07)
6/01/2013**

In the time since Revision 06 of the Version 3 ENERGY STAR New Homes guidelines were released, EPA has modified, clarified, and refined various aspects of the program documents, primarily in response to partner questions and comments. This document is a summary of these edits, organized by the program document containing the change. EPA has also posted the revised program documents, labeled Version 3 (Rev. 07), on its Web site at www.energystar.gov/newhomesguidelines.

All revisions are categorized as a Change, Clarification, or Refinement. 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 EPA’s original intent is not being met or due to changes in relevant standards (e.g., ENERGY STAR labeled product requirements, NAECA standards, ICC codes). 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.

National Program Requirements

1. Refinement – All program documents: ‘Qualified’ changed to ‘Certified’

All references to ‘Qualified’ homes and products have been revised to ‘Certified’ homes and products to align with the current terminology of the ENERGY STAR program.

2. Refinement - Qualifying Homes Section: Regional program requirements

To ensure partners do not unknowingly use the National Program Requirements when regional program requirements exist for their state, the last paragraph in the Qualifying Homes Section has been revised as follows:

“Homes may earn the ENERGY STAR using the following ENERGY STAR Prescriptive Path or Performance Path in all locations except CA, FL, GU, HI, MA, PR, and the Pacific Northwest, for which regional program requirements have been developed.

Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built.”

3. Clarification - Prescriptive Path: Use of sampling protocol

To clarify that Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home using the RESNET-approved sampling protocol, the following sentence has been added to the end of Footnote 9:

“Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home using the RESNET-approved sampling protocol.”

4. Refinement - Performance Path: Using software to determine the ENERGY STAR HERS Index Target

To clarify that the process of determining the ENERGY STAR HERS Index Target must be completed using a RESNET-accredited rating software program, and is no longer permitted to be completed manually, the phrase “Use a RESNET-accredited Home Energy Rating software program...” has been added to the beginning of Step 1 of the Performance Path. Additionally, the second paragraph of Step 1 of the Performance Path, which states that Raters are permitted to calculate the ENERGY STAR HERS Index Target manually until software becomes available to do this automatically, has been removed.

5. Refinement - Step 2 of Performance Path: Reference to Thermal Enclosure System Rater Checklist

To improve clarity, the reference to Items 1.2 and 2.1 of the TES in Step 2 of the Performance Path have been removed and the first paragraph of Step 2 has been revised as follows:

“Using the same RESNET-accredited Home Energy Rating software program, configure the preferred set of energy measures for the rated home and verify that the resulting HERS Index meets or exceeds the ENERGY STAR HERS Index Target, as determined in Step 1. Note that, regardless of the measures selected, Mandatory Requirements for All Certified Homes in Exhibit 2 are also required and impose certain constraints on the energy measures selected (e.g., insulation levels, insulation installation quality, window performance, duct leakage).”

6. **Refinement - Exhibit 2: Redundant Section header and accompanying text removed**

To eliminate redundancy, the Section header (i.e., “Mandatory Requirements for All ENERGY STAR Qualified Homes”) and accompanying text (i.e., “As noted in the Performance Path and the Prescriptive Path, all ENERGY STAR Qualified New Homes must meet the requirements of the checklists in Exhibit 2”) have been removed.

7. **Change – Exhibit 2 & Footnote 29: Removal of Indoor airPLUS Checklist as compliance option**

Because all ENERGY STAR certified homes must complete the Water Management System Builder Checklist regardless of the home’s participation in the Indoor airPLUS program, the phrase “(or Indoor airPLUS Verification Checklist)” has been removed from Exhibit 2 as has Footnote 29, which describes how to use an Indoor airPLUS Verification Checklist as an alternative to the Water Management System Builder Checklist.

8. **Clarification - Exhibit 4: Implementation timeline for national versus regional program requirements**

To clarify that the implementation schedule in Exhibit 4 is only applicable to the National Program Requirements and not to regional program requirements, the title of Exhibit 4 has been revised as follows:

“Exhibit 4: National Program Requirements Implementation Schedule”

To further clarify this point, the text accompanying this Exhibit in the Effective Date section has been revised as follows:

“Use Exhibit 4 to determine the version of the guidelines to be used when earning the ENERGY STAR through the National Program Requirements. Note that regional program requirements and associated implementation schedules have been developed for homes in CA, FL, GU, HI, MA, PR, and the Pacific Northwest.”

9. **Refinement - Exhibit 4: Consolidation of Footnotes**

To improve the clarity of the document, Footnote 1 of Exhibit 4 has been moved to the general Footnotes for the rest of the document and renumbered accordingly.

Footnote 2 of Exhibit 4, which is duplicative of the general Footnote 15, has been deleted and the general Footnote has been referenced instead.

Footnote 3 of Exhibit 4, which allowed low-income projects financed through low-income housing agencies to earn the ENERGY STAR under the last iteration of the guidelines until January 1, 2013, is no longer applicable and has been removed.

Footnote 4 of Exhibit 4, which allowed advance labeling of homes under Version 2.5 and prohibited homes from being certified under Version 3 until January 1, 2012, is no longer applicable and has been removed.

Footnote 5 of Exhibit 4, which allowed labeling of homes under Version 3 prior to January 1, 2012 where a utility or state sponsor was mandating or incentivizing early adoption, is no longer applicable and has been removed.

10. **Refinement - Footnote 10: Complete definition of ENERGY STAR Reference Design**

The information in Footnote 10 is already provided in Step 1 of the Performance Path. To avoid redundancy, Footnote 10 has been removed.

11. **Refinement – Footnote 13: Improved word choice**

Footnote 13 stated that Grade II cavity insulation installation was acceptable if “continuous rigid insulation sheathing” was used. The use of the word “sheathing” was unnecessary and has been removed to avoid confusion.

12. **Refinement – Footnote 20: Improved word choice**

The phrase “meets the requirement for a radiant barrier” has been revised to “meets the intent of a radiant barrier”.

13. **Clarification – Footnote 24: Applicability of thermostats with ‘Adaptive Recovery’ technology**

To clarify that any home with an air-source or ground-source heat pump with an electric resistance heating element used to supplement the capacity of the heat pump is required to have a thermostat with ‘Adaptive Recovery’ technology, Footnote 24 has been revised as follows:

"For homes with heat pumps that contain an electric resistance heating element used to supplement the capacity of the heat pump, the thermostat shall have 'Adaptive Recovery' technology to prevent excessive use of the heating element."

Note that a home with an air-source or ground-source heat pump that only includes an electric resistance heating element used during compressor failure (i.e., emergency heat) is not required to have a thermostat with 'Adaptive Recovery' technology.

14. **Refinement** – Footnote 24: Improved word choice

The phrase "only after all components of the system have been installed (e.g., air handler and register grilles)" has been deleted to avoid potential redundancy or misalignment with the guidance on duct testing contained in the HVAC System QI Rater Checklist.

Inspection Checklists

15. **Refinement** – First Page of Each Checklist: Addition of zip code field

A field has been added to the top of the first page of each of the four checklists to record the home's zip code, for Raters to use if they so desire.

16. **Refinement** – Cover Page: Improved word choice

In the first sentence of the final paragraph of the cover page, the phrase "..to verify any item designated 'Rater Verified'.." was relocated and refined to improve clarity.

17. **Change** – Cover Page & Footnote 1: Removal of Indoor airPLUS Checklist as compliance option

Because all ENERGY STAR certified homes must complete the Water Management System Builder Checklist regardless of the home's participation in the Indoor airPLUS program, the phrase "(or Indoor airPLUS Verification Checklist)" has been removed from the cover page of the Inspection Checklists as has Footnote 1, which describes how to use an Indoor airPLUS Verification Checklist as an alternative to the Water Management System Builder Checklist.

Thermal Enclosure System Rater Checklist

18. **Change** – Item 3.1.3: Exemption from exterior air barrier for certain short attic knee walls

An exterior air barrier is not required for attic knee walls less than or equal to 24 inches in height if an interior air barrier is provided and insulation extends in all directions from the top of this interior air barrier into unconditioned space at the following levels: CZ 1-5: \geq R-21; CZ 6-8: \geq R-30. To reflect this change, a new Footnote has been added to Item 3.1.3 as follows:

"Exterior air barriers are not required for attic knee walls that are \leq 24 in. in height if an interior air barrier is provided and insulation extends in all directions from the top of this interior air barrier into unconditioned space at the following levels: CZ 1-5: \geq R-21; CZ 6-8: \geq R-30."

19. **Change** – Item 4.2: Slab edge insulation alternative for existing homes

To allow rigid insulation \geq R-3 installed on top of an existing slab prior to the installation of the flooring to be used as an alternative to insulating 100% of the slab edge, the end of Footnote 4 has been revised as follows:

"Alternatively, the thermal break is permitted to be created using \geq R-3 rigid insulation on top of an existing slab (e.g., in a home undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet)."

20. **Change** – Item 4.4.5: Improved clarity of reduced thermal bridging requirements

The following clarifications have been made to Item 4.4.5 to reduce misinterpretations:

- The exemption of up to 10% of the total exterior wall surface area from the reduced thermal bridging requirements in Footnote 12 is only intended to be applied to Items 4.4.1 through 4.4.4. To clarify this intent, the reference to Footnote 12 has been removed from Item 4.4 and relocated to Items 4.4.1, 4.4.2, 4.4.3, and 4.4.4. As a result, Footnotes 12 and 13 have been renumbered to maintain sequential numbering.
- To improve the frequency with which the required insulation levels are met in Item 4.4.5b, the insulation levels specified in Footnote 18 have been relocated to Item 4.4.5b as follows:

“All headers above windows & doors insulated \geq R-3 for 2x4 framing or equivalent cavity width, and \geq R-5 for all other assemblies (e.g., with 2x6 framing)”

As a result, the first sentence of Footnote 18, which defined the minimum required insulation levels, has been removed.

- To improve the frequency with which the intent of “limited framing” is met in Item 4.4.4c, the relevant guidance from Footnote 19 has been relocated to Item 4.4.4c as follows:

“Framing limited at all windows & doors to one pair of king studs, plus one pair of jack studs per window opening to support the header and sill”

Footnote 19 has been revised to read:

“Additional jack studs shall be used only as needed for structural support and cripple studs only as needed to maintain on-center spacing of studs.”

21. **Change** – **Item 5.2.1: Sealing exemption for below-grade sill plates**

Because the potential for air leakage beneath below-grade sill plates is significantly reduced relative to above-grade sill plates, below-grade sill plates have been exempted from the requirements of Item 5.2.1. To clarify this intent, Item 5.2.1 has been revised as follows:

“All above-grade sill plates adjacent to conditioned space sealed to foundation or sub-floor with caulk, foam, or equivalent material. Foam gasket also placed beneath above-grade sill plate if resting atop concrete or masonry and adjacent to conditioned space”

22. **Change** – **Item 5.2.1: Alternative sealing options for existing sill plates in buildings**

Two changes have been made regarding the sealing of existing sill plates (e.g., in a home undergoing a gut rehabilitation): one related to homes with structural masonry walls or other monolithic wall assemblies, and the other to homes without such walls. To reflect these changes, a Footnote has been added to this Item that reads:

“Existing sill plates (e.g., in a home undergoing a gut rehabilitation) on the interior side of structural masonry or monolithic walls are exempt from this Item. In addition, other existing sill plates resting atop concrete or masonry and adjacent to conditioned space are permitted, in lieu of using a gasket, to be sealed with caulk, foam, or equivalent material at both the interior seam between the sill plate and the subfloor and the seam between the top of the sill plate and the sheathing.”

23. **Clarification** - **Item 5.2.7: Sealing common walls in all multifamily buildings**

To clarify that the intent of this Item is to seal the gap between the common wall and the structural framing between units at all exterior boundaries, regardless of whether the common wall is constructed of drywall, Item 5.2.7 has been revised as follows:

“In multifamily buildings, the gap between the common wall (e.g. the drywall shaft wall) and the structural framing between units fully sealed at all exterior boundaries.”

24. **Clarification** – **Item 5.3.1: Gasketing versus air-sealing doors adjacent to unconditioned space**

To clarify that the intent of this Item is to use a gasket to substantially reduce air leakage around doors that separate conditioned space from unconditioned or ambient space, Item 5.3.1 has been revised as follows:

“Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket.”

25. **Clarification** – **Footnote 7: Air barrier exemptions for rim and band joists**

To clarify that the exemption in Footnote 7 was not intended to make a distinction between a rim joist and a band joist and that both rim and band joists are exempted from the requirement for an interior vertical air barrier in Climate Zones 4-8, Footnote 7 has been revised to read:

“EPA highly recommends, but does not require, inclusion of an interior air barrier at rim / band joists in Climate Zones 4 through 8”

26. **Refinement** – **Footnote 12: Website for guide to passive solar home design**

The location of the Department of Energy’s Guide to Passive Solar Home Design has changed, and therefore the website listed in Footnote 12, which provides partners with further information on passive solar home design, has been revised to:

http://energy.gov/sites/prod/files/guide_to_passive_solar_home_design.pdf

HVAC System Quality Installation Contractor Checklist

27. **Clarification** – Items 2.1 to 2.3 & Footnote 8: Allowable HVAC Design Methodologies & Software

To clarify the intent of “or a substantively equivalent procedure” in Footnote 8, this phrase has been replaced with “or other methodology approved by the Authority Having Jurisdiction”. To reflect these changes the first paragraph of Footnote 8 has been revised to read:

“Heating and cooling loads shall be calculated, equipment shall be selected, and duct systems shall be sized according to the latest editions of ACCA Manuals J, S, & D, respectively, 2009 ASHRAE Handbook of Fundamentals, or other methodology approved by the Authority Having Jurisdiction. The HVAC system design shall be completed for the specific configuration (e.g., plan, elevation, option, and orientation) of the home to be built except as permitted herein.”

28. **Clarification** – Items 4.1 to 4.3, 7.10, & Footnote 1: Applicability to mini / multi-split, geothermal, & hydronic systems

To better accommodate the performance characteristics of ground-source heat pump systems, the following edits have been made:

Item 4.1 has been modified by adding a field for the efficiency of the ground-source heat pump in units of COP:

“AHRI Listed Efficiency: Air-Source _____ HSPF or Ground-Source _____ COP”

Documenting the part-load performance of ground-source heat pumps is no longer required in Items 4.2 & 4.3. This is addressed by a new Footnote to these Items, which states:

“Items 4.2 and 4.3 are not applicable to ground-source heat pumps.”

To reinforce that an OEM test procedure is permitted to be used to check the refrigerant charge of a ground-source heat pump, Item 7.10 has been revised to read:

“An OEM test procedure (e.g., as defined for a ground-source heat pump) has been used in place of sub-cooling or super-heat process and documentation has been attached that defines this procedure.”

To further improve the clarity and consistency with which the program requirements are enforced, Footnote 1 has been edited to indicate that the Checklist only applies to the system types listed in the Footnote when coupled with a forced-air distribution system. To reflect these changes, the second paragraph of Footnote 1 has been revised as follows:

“This Checklist applies to ventilation systems; to split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal) heat pumps up to 65,000 Btu / h with forced-air distribution systems (i.e., ducts); and to furnaces up to 225,000 Btu / h with forced-air distribution systems (i.e., ducts). All other permutations of equipment (e.g., boilers, mini-split / multi-split systems) and distribution systems are exempt. If the ventilation system is the only applicable system installed in the home, then only Section 1 shall be completed.”

29. **Refinement** – Item 8.1: Elec. measurements required for both evaporator & furnace air handler fans

To avoid any potential misinterpretation about the fact that electrical measurements are required for air handler fans of both heating and cooling systems, Item 8.1 has been revised to read:

“Evaporator or furnace air handler fan:”

30. **Change** – Signature block: Addition of line for credentialing organization

To accommodate partners that would like the option to indicate the credentialing organization of the credentialed contractor completing this Checklist, a line has been added to the signature block that reads as follows:

“Credentialing Organization: ACCA / AE / Other

31. **Change** – Footnote 1: Alignment with Indoor airPLUS language

Because EPA’s Indoor airPLUS program requires ENERGY STAR Certification and now clearly indicates what is required above and beyond these requirements to earn the Indoor airPLUS label, the following sentence has been removed from Footnote 1:

“This Checklist with supporting documents may also be used to demonstrate compliance with Indoor airPLUS specifications 4.1, 4.2, 4.5, 4.6, and 7.1.”

32. **Refinement** – Footnote 8: Expiring exemption for ‘worst-case’ load calcs. & room-level airflow design

Because the exemption allowing loads and room-level airflow to be calculated for multiple home configurations using the configuration with the largest load is not applicable to any home with a final inspection on or after 01/01/2013, this exemption has been removed and Footnote 8 has been revised to read as follows:

“Heating and cooling loads shall be calculated, equipment shall be selected, and duct systems shall be sized according to the latest editions of ACCA Manuals J, S, & D, respectively, 2009 ASHRAE Handbook of Fundamentals, or other methodology approved by the Authority Having Jurisdiction. The HVAC system design shall be completed for the specific configuration (e.g., plan, elevation, option, and orientation) of the home to be built except as permitted herein.

For each house plan with multiple configurations (e.g., orientations, elevations, options), the loads shall be calculated for each potential configuration. If the loads across all configurations vary by $\leq 25\%$, then the largest load shall be permitted to be used for equipment selection for all configurations, subject to the over-sizing limits of ACCA Manual S. Otherwise, the contractor shall group the load for each configuration into a set with $\leq 25\%$ variation and equipment selection shall be completed for each set of loads.

For each house plan with multiple configurations, the room-level design airflows shall be calculated for each potential configuration. If the design airflows for each room vary across all configurations by $\leq 25\%$ or 25 CFM, then the average room-level design airflow shall be permitted to be used when designing the duct system. Otherwise, the contractor shall group the room-level design airflow for each configuration into a set with $\leq 25\%$ or 25 CFM variation and the duct design shall be completed for the average airflow of that set.”

33. **Change** – **Footnote 17: Guidelines for ventilation systems that use HVAC air handler**

Because it may not be desirable or easily achievable to run the HVAC air handler at a reduced speed during ventilation, this particular requirement has been removed. As a result, Footnote 17 has been revised to read as follows:

“If the whole-house ventilation system utilizes the HVAC air handler, then the fan speed type shall be ECM / ICM and variable speed, or include a controller (e.g., smart cyclor) that reduces the ventilation run time by accounting for hours when HVAC system is heating or cooling the home.”

HVAC System Quality Installation Rater Checklist

34. **Refinement** – **Item 2.8: Removal of Inches Water Column equivalent to Pascals**

To avoid the use of unnecessary language, “(0.012 in. w.c.)” has been removed from Item 2.8.

35. **Change** – **Section 4: Addition of alternative option to test total duct leakage at ‘rough-in’**

An alternative test option has been added for partners to measure total duct leakage when the HVAC system is at ‘rough-in’, if they so choose, where ‘rough-in’ is defined as when the air handler and all ductwork, building cavities used as ductwork, and duct boots are installed. To comply with this option, a reduced leakage limit of 4 CFM per 100 square feet of conditioned floor area must be met and the Rater must visually verify at final inspection that all duct boots are sealed to the finished surface. To reflect these changes, Item 4.1 has been revised as follows:

“4.1 Total Rater-measured duct leakage meets one of the following two options:

4.1.1 Rough-in: ≤ 4 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed. In addition, all duct boots sealed to finished surface, Rater-verified at final.

4.1.2 Final: ≤ 8 CFM25 per 100 sq. ft. of CFA with the air handler and all ductwork, building cavities used as ductwork, duct boots, & register grilles atop the finished surface (e.g., drywall, flooring) installed.”

Additionally, a new Footnote has been added to Item 4.1.1:

“Cabinets (e.g., kitchen, bath, multimedia) or ductwork that connect duct boots to toe-kick registers are not required to be in place during the ‘rough-in’ test. For homes permitted through 12/31/2013: Homes are permitted to be certified if rough-in leakage is ≤ 6 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed.”

Finally, the statement in Footnote 17 stating that duct testing is to occur “only after all components of the system have been installed including the air handler, the ductwork, the duct boots, and the register grilles atop the finished surface (e.g., drywall, carpeting, flooring)” has been deleted because relevant guidance is now provided directly in Item 4.1.

36. **Change** – **Item 4.1: Revised duct leakage test methodology for registers atop carpet**

To remove the unintended challenge of sealing registers atop carpets during duct leakage testing, registers atop carpets are permitted to be removed and the face of the duct boot temporarily sealed (e.g., with a foam block, by taping the boot to the subfloor) during testing. When this occurs, the Rater must visually verify that the gap between the boot and subfloor has been durably sealed (e.g. using duct mastic or caulk) to prevent leakage during normal operation, because such leakage will not be captured during the test. To reflect this change, a Footnote has been added to Item 4.1 that reads as follows:

“Registers atop carpets are permitted to be removed and the face of the duct boot temporarily sealed during testing. In such cases, the Rater shall visually verify that the boot has been durably sealed to the subfloor (e.g. using duct mastic or caulk) to prevent leakage during normal operation.”

37. **Change – Item 8.1: Alternative kitchen exhaust rate for Passive House (PHIUS+) certified homes**

To avoid discouraging participation of PHIUS+ projects in the DOE Challenge Home or ENERGY STAR certified homes program, an alternative kitchen exhaust rate based on the requirements of the 2009 IRC is permitted to be used for PHIUS+ certified homes. This alternative will remain in effect while DOE works to develop an ASHRAE 62.2-compliant solution optimized for very low-load homes. A new Footnote has been added to Item 8.1 that reads as follows:

“As an alternative to Item 8.1, homes that are PHIUS+ certified are permitted to use a continuous kitchen exhaust rate of 25 CFM per 2009 IRC Table M1507.3.”

38. **Change – Item 8.1: Alternative compliance options for kitchen exhaust fan airflow rate**

To accommodate partners’ challenges complying with this Item, a new Footnote has been added to Item 8.1 that reads as follows:

“For homes permitted through 01/01/2014: Homes are permitted to be certified without enforcement of this Item to provide partners with additional time to integrate this feature into their homes.

For homes permitted on or after 01/01/2014: Homes shall meet this Item. Alternatively, the prescriptive duct sizing requirements in Table 5.3 of ASHRAE 62.2-2010 are permitted to be used for kitchen exhaust fans based upon the rated airflow of the fan at 0.25 IWC. If the rated airflow is unknown, ≥ 6 in. smooth duct shall be used, with a rectangular to round duct transition as needed. Guidance to assist partners with these alternatives is available at www.energystar.gov/newhomesresources.”

As a result of these new alternatives for kitchen exhaust fans, the option for intermittent kitchen exhaust fans that are integrated with microwaves to have a rated air flow rate ≥ 200 CFM has been removed from Footnote 29.

39. **Change – Item 9.1: Exemption from kitchen exhaust fan sone rating**

Because the availability of kitchen exhaust fans with sound ratings is still limited, EPA will recommend, but not require, that kitchen exhaust fans meet Item 9.1 for intermittent fans or Item 9.2 for continuous fans. To reflect this change, the heading of Section 9 has been revised to read:

“Ventilation & Exhaust Fan Ratings (Exemptions for Kitchen, HVAC, and Remote-Mounted Fans).”

The first sentence of Footnote 31 has been revised to read as follows:

“Fans exempted from this requirement include kitchen exhaust fans, HVAC air handler fans, and remote-mounted fans.”

40. **Refinement – Item 10.2: Removal of non-applicable Footnote from this Item**

To avoid referencing a Footnote that is not applicable, the reference to Footnote 33 has been removed from Item 10.2.

41. **Clarification – Item 10.3: Applicability of CO testing to cooking ovens**

To clarify that the intent of Item 10.3 is to ensure that unvented combustion appliances located within the home’s pressure boundary can be operated safely, as verified through a combustion safety test, and that this Item was not intended to include cooking appliances in the kitchen, where local mechanical exhaust is required per Item 8.1 of this Checklist, Item 10.3 has been revised to read:

“If unvented combustion appliances other than cooking ranges or ovens are located inside the home’s pressure boundary, the Rater has operated the appliance for at least 10 minutes and verified that the ambient CO level does not exceed 35 ppm.”

42. **Change – Footnote 1: Alignment with Indoor airPLUS language**

Because EPA’s Indoor airPLUS program requires ENERGY STAR Certification and now clearly indicates what is required above and beyond these requirements to earn the Indoor airPLUS label, the following sentence has been removed from Footnote 1:

“This Checklist with supporting documents may also be used to demonstrate compliance with Indoor airPLUS specifications 4.1, 4.2, 4.5, 4.6, and 7.1.”

43. **Clarification – Footnote 3: Expiring exemption for deviation from ACCA Manual J design temperatures**

Because the exemption allowing up to a 5 degree deviation from ACCA Manual J design temperatures is not applicable to any home with a final inspection date on or after 01/01/2013, this exemption has been removed from Footnote 3. The remaining guidance related to design temperatures has been moved to Footnote 4, which already discusses the design location. The guidance related to house plans with multiple configurations is still applicable and has been retained in Footnote 3. Footnote 3 has been revised as follows:

“For each house plan with multiple configurations (e.g., orientations, elevations, options), the Rater shall confirm that the parameters listed in Items 1.2.2 to 1.2.6 are aligned with either: the rated home or with the plans for the configuration used to calculate the loads, as provided by the contractor.”

44. **Refinement** – **Footnote 14: Expiring exemption for homes that don’t meet pressure balancing req.**

Because the exemption allowing homes to be certified without meeting the bedroom pressure-balancing requirements of Item 2.8 is not applicable to any home with a final inspection date on or after 01/01/2013, this exemption has been removed and Footnote 14 has been deleted.

45. **Refinement** – **Footnote 18: Inconsistency in alternative duct leakage allowance for small homes**

To be consistent, and avoid the exclusion of homes that are equal to 1,200 sq. ft. from this alternative duct leakage allowance, the last sentence of Footnote 18 has been revised as follows:

“Alternatively, testing of duct leakage to the outside can be waived if total duct leakage is ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area, or ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area for homes that have $\leq 1,200$ sq. ft. of conditioned floor area.”

Water Management System Builder Checklist

46. **Clarification** – **Item 1.1 & 1.2, and Footnote 4: Use of swales and drains**

Drains and swales are an acceptable alternative to proper site sloping regardless of whether setbacks limit space to less than 10 ft. To clarify this intent, Footnote 4 has been revised as follows:

“Swales or drains designed to carry water from foundation are permitted to be provided as an alternative to the slope requirements for any home, and shall be provided for a home where setbacks limit space to less than 10 ft....”

47. **Change** – **Item 1.3 and 1.4: Capillary break beneath existing slabs**

Because it is not feasible for partners certifying existing homes (e.g., in a home undergoing a gut rehabilitation) to remove slabs and place a capillary break beneath, existing homes are permitted to install a sealed and continuous capillary break above the slab that is either a Class I or Class II Vapor Retarder. To clarify this alternative, a new Footnote has been added that reads as follows:

“For an existing slab (e.g., in a home undergoing a gut rehabilitation), in lieu of a capillary break beneath the slab, a continuous and sealed Class I or Class II Vapor Retarder (per Footnote 6) is permitted to be installed on top of the entire slab. In such cases, up to 10% of the slab surface is permitted to be exempted from this requirement (e.g., for sill plates). In addition, for existing slabs in occupiable space, the Vapor Retarder shall be, or shall be protected by, a durable floor surface. If Class I Vapor Retarders are installed, they shall not be installed on the interior side of air permeable insulation or materials prone to moisture damage.”

48. **Clarification** – **Item 1.5: Applicability to slabs on grade and vented crawlspace foundations**

Item 1.5 is not required for stem walls supporting slabs on grade, nor is it required for below-grade walls of vented crawlspaces. This is because there is no space in the house adjacent to these below-grade walls. To clarify this intent, Item 1.5 has been revised as follows:

“Exterior surface of below-grade walls of basements & unvented crawlspaces finished as follows...”

49. **Change** – **Item 1.5: Finishing of exterior surface of existing below-grade walls**

To provide alternative pathways for partners certifying existing homes that have expressed concern that the exterior surface of foundation walls are already below grade and that it is not be feasible to excavate around the home, clean the walls, apply the exterior coating, and back-fill the excavated areas, a new Footnote has been added to Item 1.5. For clarity, the two bullets in Item 1.5 have been revised to “a” and “b” and the new Footnote has been added to Item 1.5a and reads as follows:

“The interior surface of existing below-grade walls (e.g., in a home undergoing a gut rehabilitation) listed in Item 1.5a are permitted to be finished as follows:

- Install a continuous and sealed drainage plane, capillary break, Class I Vapor Retarder (per Footnote 6) and air barrier that terminates into a foundation drainage system as specified in Item 1.8; OR
- If a drain tile is not required as specified in Footnote 7, adhere a capillary break and Class I Vapor Retarder (per Footnote 6) directly to the wall with the edges taped / sealed to make it continuous.

Note that no alternative compliance option is provided for existing below-grade wood-framed walls.”

50. **Change – Item 1.8: Required location of drain tile and applicability to existing homes**

To clarify that new homes are required to have a drain tile on the exterior side of footings, the beginning of Item 1.8 has been revised as follows:

“Drain tile installed at the exterior side of footings of basement and crawlspace walls...”

To clarify that a drainage system is permitted to be installed on the interior side of existing footings (e.g., in homes undergoing a gut rehabilitation), the end of Footnote 7 has been revised as follows:

“In an existing home (e.g., in a home undergoing a gut rehabilitation) the installation of a drain tile that is only on the interior side of the footings is permitted. Additionally, a drain tile is not required when a certified hydrologist, soil scientist, or engineer has determined that a crawlspace foundation, or an existing basement foundation (e.g., in a home undergoing a gut rehabilitation), is installed in Group I Soils (i.e. well-drained ground or sand-gravel mixture soils), as defined by 2009 IRC Table R405.1.”

51. **Change – Item 2.1 & Item 2.2: Flashing and drainage plane for existing structural masonry walls**

Because it is not typically feasible or necessary for partners certifying existing homes (e.g., in a home undergoing a gut rehabilitation) to install flashing at the bottom of structural masonry wall assemblies, they are not required to comply with Items 2.1 and 2.2. To clarify this exemption, a new Footnote has been added to Items 2.1 and 2.2 that reads as follows:

“These Items not required for existing structural masonry walls (e.g., in a home undergoing a gut rehabilitation). Note this exemption does not extend to existing wall assemblies with masonry veneers.”

52. **Refinement – Item 2.2 and Footnote 8: Drainage plane: alignment with Indoor airPLUS language**

To ensure that this Checklist aligns with the guidance in Indoor airPLUS, the phrase “and fully sealed at all penetrations” has been added to Item 2.2 as follows:

“Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Item 2.1 and fully sealed at all penetrations. Additional bond-break drainage plane layer provided behind all stucco and non-structural masonry cladding wall assemblies.”

Additionally, the phrase “shingled at horizontal joints and” has been added to Footnote 8 as follows:

“Any of the following systems may be used: a monolithic weather-resistant barrier (i.e., house wrap) shingled at horizontal joints and sealed or taped at all joints; weather resistant sheathings (e.g., faced rigid insulation) fully taped at all “butt” joints; lapped shingle-style building paper or felts; or other water-resistive barrier recognized by ICC-ES or other accredited agency.”

53. **Refinement – Item 2.3: Flashing around window and door openings for structural masonry walls**

To provide greater flexibility to select appropriate details for flashing of windows and doors in structural masonry walls that meet the same intent as the current Checklist Item, the following phrase has been added to the end of Footnote 9: “...or equivalent details for structural masonry walls.”

54. **Refinement – Item 3.1: Step and kick-out flashing: alignment with Indoor airPLUS language**

To ensure that this Checklist aligns with the guidance in Indoor airPLUS, the phrases “shingle-style” and “boot / collar flashing at all roof penetrations” has been added to Item 3.1 as follows:

“Step and kick-out flashing at all roof-wall intersections, extending ≥ 4 ” on wall surface above roof deck and integrated shingle-style with drainage plane above; boot / collar flashing at all roof penetrations.”

55. **Refinement – Item 3.2 & Footnote 11: Gutters & downspouts: alignment w/ Indoor airPLUS language**

To further clarify the intent of this Item and ensure that this Checklist aligns with the guidance in Indoor airPLUS, the word “deposit” has been revised to “discharge” and the phrase “not connected to the foundation drain system” has been added to Item 3.2. A note has also been added to the end of this Item directing partners to the alternatives and exemptions in the Footnote. The revised Item reads as follows:

“For homes that don’t have a slab-on-grade foundation and do have expansive or collapsible soils, gutters & downspouts provided that empty to lateral piping that discharges water on sloping final grade ≥ 5 ft. from

foundation, or to underground catchment system not connected to the foundation drain system that discharges water \geq 10 ft. from foundation. See Footnote for alternatives & exemptions.”

Additionally minor revisions to word choice have been made to Footnote 11 to improve consistency as follows:

“The assessment of whether the soil is expansive or collapsible shall be completed by a certified hydrologist, soil scientist, or engineer. As an alternative, a roof design is permitted to be used that deposits rainwater to a grade-level rock bed with a waterproof liner and a lateral drain pipe that meets discharge requirements per Item 3.2. As another alternative, a rainwater harvesting system is permitted to be used that drains overflow to meet discharge requirements per Item 3.2.”

56. **Clarification – Item 4.4: Existing building materials with visible signs of water damage or mold**

To clarify that the intent of this Item applies to both new and existing homes (e.g., in a home undergoing a gut rehabilitation), Item 4.4 has been revised as follows:

“Building materials with visible signs of water damage or mold *not* installed or allowed to remain.”

57. **Change – Item 4.4 & Footnote 14: Exemption for sap-stain fungi**

In consultation with the Indoor airPLUS program, an exemption has been added to Item 4.4 for sap stain fungi, and guidance on mold removal for other types of mold has been improved. Footnote 14 has been revised as follows:

“If mold is present, effort should be made to remove all visible signs of mold (e.g., by damp wipe with water and detergent). If removal methods are not effective, then the material shall be replaced. However, stains that remain after damp wipe are acceptable. Lumber with "sap stain fungi" is exempt from this Item as long as the lumber is structurally intact.”

58. **Clarification – Item 4.5: Both interior and exterior walls with high moisture content not to be enclosed**

To clarify that the intent of Item 4.5 is to prevent any interior or exterior wall from being enclosed (e.g. with drywall) if it contains framing members or insulation products with high moisture content, Item 4.5 has been revised as follows:

“Framing members and insulation products having high moisture content *not* enclosed (e.g., with drywall)”

59. **Change – Footnote 3: Removal of Indoor airPLUS Checklist as compliance option**

Because all ENERGY STAR certified homes must complete the Water Management System Builder Checklist regardless of the home’s participation in the Indoor airPLUS program, a completed Indoor airPLUS Verification Checklist is no longer permitted to be completed in lieu of this Checklist. As a result Footnote 3, which describes how to use an Indoor airPLUS Verification Checklist as an alternative to the Water Management System Builder Checklist, has been removed.

60. **Clarification – Footnote 5 & Footnote 12: Consolidation of Footnotes**

Because Footnotes 5 and 12 both provide exemptions for dry climates, a new Footnote has been created that provides only this exemption. The remainder of the information in Footnote 5 is contained in its own Footnote and all references to Footnotes 5 and 12 now reference the newly created Footnote for exemptions in dry climates.

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61. **Change - Exhibit 2, Service Water Heating Systems: Addition of oil water heater Energy Factors**

The following rows have been added to the Service Water Heating Systems Section of Exhibit 2 to address the configuration of the ENERGY STAR Reference Design for homes with oil water heating:

“Oil Storage Tank Capacity: 30 Gallon 40 Gallon 50 Gallon 60 Gallon 70 Gallon 80 Gallon

Oil DHW EF:	0.55	0.53	0.51	0.49	0.47	0.45”
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62. **Change - Exhibit 2, Service Water Heating Systems: Tank size**

To address the tank size to be modeled, the System Type definition in the Service Water Heating Systems Section of Exhibit 2 has been revised as follows:

“System Type: Conventional storage water heater with tank size equal to that of Rated Home, unless Rated Home uses instantaneous water heater, in which case select 40 gallon tank for gas systems and 60 gallon tank for electric systems. Select applicable efficiency from below using tank size of Reference Home.”

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63. **Refinement - Qualifying Homes Section: Regional program requirements**

To ensure partners do not unknowingly use the County-Level Reference Design when regional program requirements exist for their state, the last paragraph in the Qualifying Homes Section has been revised as follows:

“Homes may earn the ENERGY STAR using the following ENERGY STAR Prescriptive Path in all locations except CA, FL, GU, HI, MA, PR, and the Pacific Northwest, for which regional program requirements have been developed.

Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built.”

64. **Clarification - Prescriptive Path: Use of sampling protocol**

To clarify that Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home using the RESNET-approved sampling protocol, the following sentence has been added to the end of Footnote 10:

“Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home using the RESNET-approved sampling protocol.”

65. **Refinement - Exhibit 1: Redundant Section header and accompanying text removed**

To eliminate redundancy, the Section header (i.e., “Mandatory Requirements for All ENERGY STAR Qualified Homes”) and accompanying text (i.e., “As noted in the Prescriptive Path, all ENERGY STAR Qualified New Homes must meet the requirements of the checklists in Exhibit 1”) has been removed.

66. **Change – Exhibit 1 & Footnote 11: Removal of Indoor airPLUS Checklist as compliance option**

Because all ENERGY STAR certified homes must complete the Water Management System Builder Checklist regardless of the home’s participation in the Indoor airPLUS program, the phrase “(or Indoor airPLUS Verification Checklist)” has been removed from Exhibit 1 as has Footnote 11, which describes how to use an Indoor airPLUS Verification Checklist as an alternative to the Water Management System Builder Checklist.

67. **Refinement - Exhibit 3: Minimum Water Heater Efficiencies by Fuel Type and Tank Size**

To ensure water heaters are meeting the minimum efficiency requirements by fuel type and tank size, the table containing this information in Footnote 21 has been moved to the Water Heater Section of Exhibit 3.

68. **Clarification - Exhibit 3: Infiltration rate**

To ensure that envelope leakage is being determined by a Rater using a RESNET-approved testing protocol, the following Footnote has been added to the maximum allowable infiltration rate in the Envelope Section of Exhibit 3:

“Envelope leakage shall be determined by a rater using a RESNET-approved testing protocol.”

69. **Refinement – CZ 1 to 3 Footnote 17 and CZ 4 to 8 Footnote 16: Improved word choice**

The Footnote stated that Grade II cavity insulation installation was acceptable if “continuous rigid insulation sheathing” was used. The use of the word “sheathing” was unnecessary and has been removed to avoid confusion.

70. **Clarification - Footnote 22: Applicability of thermostats with ‘Adaptive Recovery’ technology**

To clarify that any home with an air-source or ground-source heat pump with an electric resistance heating element used to supplement the capacity of the heat pump is required to have a thermostat with ‘Adaptive Recovery’ technology, Footnote 22 has been revised as follows:

"For homes with heat pumps that contain an electric resistance heating element used to supplement the capacity of the heat pump, the thermostat shall have ‘Adaptive Recovery’ technology to prevent excessive use of the heating element."

Note that a home with an air-source or ground-source heat pump that only includes an electric resistance heating element used during compressor failure (i.e., emergency heat) is not required to have a thermostat with ‘Adaptive Recovery’ technology.

71. **Refinement – Footnote 23: Improved word choice**

The phrase “only after all components of the system have been installed (e.g., air handler and register grilles)” has been deleted to avoid potential redundancy or misalignment with the guidance on duct testing contained in the HVAC System QI Rater Checklist.