Version Tracking Document for
ENERGY STAR Qualified Homes, Version 3 (Rev. 05)
1/15/2012

In the time since Revision 04 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. 05), 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. ***Clarification*** **– Partnership, Training, and Credentialing Requirements**

   A section has been added to clarify the partnership, training, and credentialing requirements for builders, Raters, and HVAC contractors working on ENERGY STAR qualified homes. This new section appears after the "ENERGY STAR Performance Path" section and reads as follows:

   "Partnership, Training, and Credentialing Requirements

   Builders, Raters, and HVAC contractors must meet the following requirements prior to qualifying homes under these guidelines:

   - Builders are required to be ENERGY STAR partners and complete the online Version 3 Builder Orientation. Partnership Agreements and Version 3 Builder Orientation can be found at www.energystar.gov/homesPA.
   - HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this process and links to H-QUITOs can be found at www.energystar.gov/newhomesHVAC.
   - Raters and Field Inspectors are required to complete Version 3 Training which can be found at www.resnet.us/energystar."

2. ***Clarification*** **– Exhibit 1: ENERGY STAR Reference Design – Required Efficiency of Gas Furnaces**

   To clarify that the ENERGY STAR for Homes guidelines will not be modified at this time to align with the more stringent efficiency level required in the new ENERGY STAR product specification for furnaces, the phrase "ENERGY STAR qualified" has been removed from the minimum requirement for gas furnaces in Climate Zones 4 through 8.

3. ***Change*** **– Exhibit 1: ENERGY STAR Reference Design – Total Duct Leakage**

   To address partners' difficulties meeting the total duct leakage limit, the total duct leakage limit has been revised as follows: "Total duct leakage shall be ≤ 8 CFM25 per 100 sq. ft. of conditioned area." Because the total duct

leakage threshold is not being changed for homes with less than 1,200 sq. ft. of conditioned floor area, there is no longer a different threshold for those homes.

Footnote 24 has been shortened to only include guidance related to duct leakage testing protocols: "Duct leakage shall be determined and documented by a Rater using a RESNET-approved testing protocol only after all components of the system have been installed (e.g., air handler and register grilles). Leakage limits shall be assessed on a per-system, rather than per-home, basis."

Remaining guidance related to testing duct leakage to the outside has been consolidated in Footnote 25, which now reads as follows:

"For homes that have ≤ 1,200 sq. ft. of conditioned floor area, measured duct leakage to outdoors shall be ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area. Testing of duct leakage to the outside can be waived if all ducts & air handling equipment are located within the home's air and thermal barriers AND envelope leakage has been tested to be less than or equal to half of the Prescriptive Path infiltration limit for the Climate Zone where the home is to be built. 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 less than 1,200 sq. ft. of conditioned floor area."

4. ***Refinement*** **– Exhibit 1: ENERGY STAR Reference Design – Lighting & Appliances**

   To align with the terminology now used to describe ENERGY STAR qualified lighting products, the lighting requirement in the ENERGY STAR Reference Design has been revised as follows: "ENERGY STAR qualified light bulbs or fixtures shall be installed in 80% of RESNET-defined Qualifying Light Fixture Locations."

5. ***Clarification*** **– Footnote 5 - Conflicts with Code or Other External Guidelines**

   If a conflict with code or other external guidelines prevents a home from including an energy efficiency feature required by the Inspection Checklists, that feature cannot be used to help the home meet its ENERGY STAR HERS Index Target under the Performance Path. If modeling the home as it will be built, without the efficiency feature, causes it to fail, then additional upgrades must be used to compensate for the missing feature. To clarify this, Footnote 5 has been revised as follows:

   a. "In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
   b. "In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Qualification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation). Note that, under the Performance Path, a home must still meet its ENERGY STAR HERS Index Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement."

6. ***Clarification*** **– Footnote 10d - Minimum Insulation Requirements When Using a Total UA Calculation**

   To clarify that Inspection Checklist Item 4.1 defines minimum insulation levels that must be achieved specifically at the interior face of the exterior wall and not throughout the attic, Footnote 10d has been revised as follows: "…Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Thermal Enclosure System Rater Checklist shall be met regardless of the UA tradeoffs calculated..."

ENERGY STAR County-Level Reference Design for all Climate Zones

7. ***Clarification*** **– Partnership, Training, and Credentialing Requirements**

   A section has been added to clarify the partnership, training, and credentialing requirements for builders, Raters, and HVAC contractors working on ENERGY STAR qualified homes. This new section appears after the "ENERGY STAR Performance Path" section and reads as follows:

   "Partnership, Training, and Credentialing Requirements

Builders, Raters, and HVAC contractors must meet the following requirements prior to qualifying homes under these guidelines:

- Builders are required to be ENERGY STAR partners and complete the online Version 3 Builder Orientation. Partnership Agreements and Version 3 Builder Orientation can be found at www.energystar.gov/homesPA.
- HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this process and links to H-QUITOs can be found at www.energystar.gov/newhomesHVAC.
- Raters and Field Inspectors are required to complete Version 3 Training which can be found at www.resnet.us/energystar."

8. ***Change*** **– Exhibit 2: ENERGY STAR Reference Design – Total Duct Leakage**

To address partners' difficulties meeting the total duct leakage limit, the total duct leakage limit has been revised as follows: "Total duct leakage ≤ 8 CFM25 per 100 sq. ft. of conditioned area." Because the total duct leakage threshold is not being changed for homes with less than 1,200 sq. ft. of conditioned floor area, there is no different threshold for those homes.

Footnote 22 has been shortened to only include guidance related to duct leakage testing protocols: "Duct leakage shall be determined and documented by a Rater using a RESNET-approved testing protocol only after all components of the system have been installed (e.g., air handler and register grilles). Leakage limits shall be assessed on a per-system, rather than per-home, basis."

Remaining guidance related to testing duct leakage to the outside has been consolidated in Footnote 23, which now reads as follows:

"For homes that have ≤ 1,200 sq. ft. of conditioned floor area, measured duct leakage to outdoors shall be ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area. Testing of duct leakage to the outside can be waived if all ducts & air handling equipment are located within the home's air and thermal barriers AND envelope leakage has been tested to be less than or equal to half of the Prescriptive Path infiltration limit for the Climate Zone where the home is to be built. 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 less than 1,200 sq. ft. of conditioned floor area."

9. ***Refinement*** **– Exhibit 2: ENERGY STAR Reference Design – Lighting & Appliances**

To align with the terminology now used to describe ENERGY STAR qualified lighting products, the lighting requirement in the ENERGY STAR Reference Design has been revised as follows: "ENERGY STAR qualified light bulbs or fixtures shall be installed in 80% of RESNET-defined Qualifying Light Fixture Locations."

10. ***Clarification*** **– Footnote 6 - Conflicts with Code or Other External Guidelines**

If a conflict with code or other external guidelines prevents a home from including an energy efficiency feature required by the Inspection Checklists, that feature cannot be used to help the home meet its ENERGY STAR HERS Index Target under the Performance Path. If modeling the home as it will be built, without the efficiency feature, causes it to fail, then additional upgrades must be used to compensate for the missing feature. To clarify this, Footnote 6 has been revised as follows:

c. "In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
d. "In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Qualification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation). Note that, under the Performance Path, a home must still meet its ENERGY STAR HERS Index Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement."

ENERGY STAR County-Level Reference Design for Climate Zones 1-3

11. ***Clarification*** **– Footnote 17d - Minimum Insulation Requirements When Using a Total UA Calculation**

    To clarify that Inspection Checklist Item 4.1 defines minimum insulation levels that must be achieved specifically at the interior face of the exterior wall and not throughout the attic, Footnote 17d has been revised as follows: "…Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Thermal Enclosure System Rater Checklist shall be met regardless of the UA tradeoffs calculated..."

ENERGY STAR County-Level Reference Design for Climate Zones 4-8

12. ***Clarification*** **– Exhibit 3: ENERGY STAR Reference Design – Required Efficiency of Gas Furnaces**

    To clarify that the ENERGY STAR for Homes guidelines will not be modified at this time to align with the more stringent efficiency level required in the new ENERGY STAR product specification for furnaces, the phrase "ENERGY STAR qualified" has been removed from the minimum requirement for gas furnaces in Climate Zones 4 through 8.

13. ***Clarification*** **– Footnote 16d - Minimum Insulation Requirements When Using a Total UA Calculation**

    To clarify that Inspection Checklist Item 4.1 defines minimum insulation levels that must be achieved specifically at the interior face of the exterior wall and not throughout the attic, Footnote 16d has been revised as follows: "…Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Thermal Enclosure System Rater Checklist shall be met regardless of the UA tradeoffs calculated..."

Inspection Checklists

14. ***Clarification*** **– Conflicts with Code or Other External Guidelines**

    If a conflict with code or other external guidelines prevents a home from including an energy efficiency feature required by the Inspection Checklists, that feature cannot be used to help the home meet its ENERGY STAR HERS Index Target under the Performance Path. If modeling the home as it will be built, without the efficiency feature, causes it to fail, then additional upgrades must be used to compensate for the missing feature. To clarify this, the guidance describing how conflicts with code requirements or other guidance are to be handled has been revised as follows:

    a. "In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
    b. "In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Qualification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation). Note that, under the Performance Path, a home must still meet its ENERGY STAR HERS Index Target (or equivalent target for regional program requirements). Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement."

15. ***Clarification*** **– Guidance for Verifying HVAC Credentialing**

    To provide Raters with better guidance on verifying the credentialed status of HVAC contractors per the checkbox at the bottom of the first page of the Inspection Checklists, a new footnote has been added that reads as follows: "HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/newhomesHVAC."

Thermal Enclosure System Rater Checklist

16. ***Change*** **– Item 2.1**

Homes that achieve meaningful reductions in infiltration relative to the ENERGY STAR Reference Design are now permitted to meet less stringent insulation requirements. Homes that achieve ≤ 50% of the infiltration rate defined for their Climate Zone in Exhibit 1 of the National Program Requirements are permitted to use insulation levels below the 2009 IECC requirements, with some limitations. To reflect this, change Item 2.1 has been revised as follows:

"Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options:

"2.1.1 Meet or exceed 2009 IECC levels **OR;**

"2.1.2 Achieve ≤ 133% of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, **AND** home shall achieve ≤ 50% of the infiltration rate in Exhibit 1 of the National Program Requirements."

17. ***Change*** **– Item 4.1, Footnote 11**

To address partners' challenges redesigning roof trusses to meet the insulation levels required at attic eaves, Item 4.1 has been revised as follows: "For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels: CZ 1 to 5: ≥ R-21; CZ 6 to 8: ≥ R-30."

Additionally Footnote 11 has been revised as follows:

"The minimum designated R-values must be achieved regardless of the trade-offs determined using an equivalent U-factor or UA alternative calculation, with the following exception:

"For homes permitted through 12/31/2012: CZ 1-5: For spaces that provide less than 5.5 in. of clearance, R-15 Grade I insulation is permitted. CZ 6-8: For spaces that provide less than 7.0 in. of clearance, R-21 Grade I insulation is permitted.

"For homes permitted on or after 01/01/2013: Homes shall achieve Item 4.1 without exception.

Note that if the minimum designated values are used and Item 2.1.1 is applicable to the home, then higher insulation values must be used elsewhere to compensate. Also, note that these requirements can be met by using any available strategy, such as a raised-heel truss, alternate framing that provides adequate space, and / or high-density insulation."

18. ***Clarification*** **– Item 5.2.1**

To clarify that foam sealant is permitted to be used in place of caulk to seal sill plates adjacent to conditioned spaces to the foundation or sub-floor, Item 5.2.1 has been revised as follows: "All sill plates adjacent to conditioned space sealed to foundation or sub-floor with caulk, foam, or equivalent material."

19. ***Clarification*** **– Item 5.2.3**

Drywall is no longer required to be sealed to the top plate when the thermal and pressure boundary of the home is located at the roof deck of the attic rather than at the attic / ceiling interface. Additionally, the word "sheetrock" has been replaced with the generic term, "drywall". To clarify this and to permit drywall adhesive to be used to seal drywall to the top plate, Item 5.2.3 has been revised as follows: "Drywall sealed to top plate at all attic / wall interfaces using caulk, foam, drywall adhesive (but not other construction adhesives), or equivalent material. Either apply sealant directly between drywall and top plate or to the seam between the two from the attic above."

20. ***Clarification*** **– Footnote 3d**

To clarify that Item 4.1 defines minimum insulation levels that must be achieved specifically at the interior face of the exterior wall and not throughout the attic, Footnote 3d has been revised as follows: "…Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Checklist shall be met regardless of the UA tradeoffs calculated..."

21. ***Refinement*** **– Footnote 5**

Both the hyperlink and the text for the website that provides a list of currently exempt details for slab edge insulation has been corrected to "www.energystar.gov/slabedge."

22. ***Change*** **– Footnote 8**

The provision in Footnote 8 allowing compressed batts to be used to insulate floors over unconditioned spaces has been extended to additional combinations of batt sizes and cavity depths. Additionally, a conflict between this provision and Item 2.2 has been resolved. To reflect this change, Footnote 8 has been revised as follows: "Examples of supports necessary for permanent contact include staves for batt insulation or netting for blown-in insulation. Alternatively, batts that completely fill floor cavities enclosed on all six sides may be used to meet

Items 2.2 and 3.2, even when compression occurs due to excess insulation, as long as the R-value of the batts has been appropriately assessed based on manufacturer guidance and the only defect preventing the insulation from achieving the required installation grade is the compression caused by the excess insulation."

23. ***Clarification*** **– Footnote 13**

    The methodology for evaluating compliance with Item 4.4 for mass walls has been clarified so that the nominal thermal resistance of each material in the mass wall assembly is permitted to contribute towards meeting the intent of reduced thermal bridging, but thermal mass effects are not. Additionally, the second paragraph of Footnote 13 has been revised to reference the mass wall equivalent U-factors defined in Table 402.1.3 of the 2009 IECC rather than the component insulation requirements defined in Table 402.1.1 of the 2009 IECC. Footnote 13 now reads as follows:

    "Mass walls that are not part of a passive solar design (e.g., CMU block or log home enclosure) shall either utilize the strategies outlined in Item 4.4 or the pathway in the assembly with the least thermal resistance, as determined using a method consistent with the 2009 ASHRAE Handbook of Fundamentals, shall provide ≥ 50% of the applicable assembly resistance, defined as the reciprocal of the mass wall equivalent U-factor in the 2009 IECC – Table 402.1.3. Documentation identifying the pathway with the least thermal resistance and its resistance value shall be collected by the Rater and any Builder Verified or Rater Verified box under Item 4.4 shall be checked."

24. ***Refinement*** **– Footnote 15**

    The phrase "Section 4.4.1" has been revised to read "Item 4.4.1".

25. ***Clarification*** **– Footnote 18**

    To clarify that uninsulated full-depth headers are permitted to be used where specified in a framing plan , even if other header options are viable, Footnote 18 has been revised as follows: "Header insulation shall be ≥ R-3 for wall assemblies with 2x4 framing, or equivalent cavity width, and ≥ R-5 for all other assemblies (e.g., with 2x6 framing). Compliance options include continuous rigid insulation sheathing, SIP headers, other prefabricated insulated headers, single-member or two-member headers with insulation either in between or on one side, or an equivalent assembly, except where a framing plan provided by the builder, architect, designer, or engineer indicates that full-depth solid headers are to be used. The Rater need not evaluate the structural necessity of the details in the framing plan to qualify the home. Also, the framing plan need only encompass the details in question and not necessarily the entire home. R-value requirement refers to manufacturer's nominal insulation value."

HVAC System Quality Installation Contractor Checklist

26. ***Change*** **– Verification Columns, Footnote 5**

    Until credentials are available specifically for heating, cooling, and ventilation system designers, either the builder (or a firm or HERS Rater hired by the builder) or the credentialed HVAC contractor (or a firm or HERS Rater hired by the credentialed contractor) shall be permitted to design such systems and to complete Sections 1 through 5 of the HVAC System Quality Installation Contractor Checklist. As always, the designer must comply with applicable codes and laws that regulate HVAC designers and HVAC designs.

    When a credentialed contractor retains an uncredentialed company or HERS Rater to design systems and complete any items in Section 1 through 5, the credentialed contractor shall be responsible for ensuring that the work complies with the Checklist and that the Checklist has been completed, including preparing the documentation required by Items 1.3, 2.18, and 3.15. In essence, the responsibilities of the contractor have not changed. Rather, this resolution clarifies that credentialed contractors are permitted to retain a design company, even if that company is not itself credentialed.

    When a builder retains an uncredentialed company or utilizes in-house staff or a HERS Rater, the builder shall be responsible for ensuring that the work complies with the Checklist and that the Checklist has been completed, including preparing the documentation required by Items 1.3, 2.18, and 3.15.

    In both cases, equipment may only be installed and Sections 6 through 12 of the Checklist may only be completed by a credentialed HVAC contractor.

    The second verification column on the Checklist has been revised from "Rater Verified" to "Builder Verified" so that the "Builder Verified" and "Cont. Verified" (which was shortened from "Cont. / Tech. Verified") columns reflect the parties responsible for the completion of the Checklist. Footnote 5 has been revised and applied to the "Builder Verified" column to clarify the builder's responsibility:

    "The 'Builder Verified' column shall be used to indicate items verified by the builder (or a firm or HERS Rater hired by the builder). The builder is responsible for these Items and must sign the bottom of this Checklist if any items in

Sections 1 through 5 on this Checklist have been marked 'Builder Verified'. Only credentialed contractors may complete Items in Sections 6-10."

27. ***Refinement*** **– Item 9.2**

    Item 9.2 has been revised to correct the spelling of "Cooling".

28. ***Change*** **– Footnote 1**

    The second through fourth paragraphs of Footnote 1 have been combined and revised to include additional guidance on the applicability of the Checklist to ventilation systems and to remove guidance related to the role of Raters, which has been relocated to Footnotes 5 and 6:

    "This Checklist applies to ventilation systems, split air conditioners, unitary air conditioners, air-source / water-source (i.e., geothermal) heat pumps up to 65,000 Btu / h and furnaces up to 225,000 Btu / h. All other equipment, including boilers, is exempt. If the ventilation system is the only applicable system installed in the home, then only Section 1 shall be completed.

    "One Checklist shall be completed for each system and provided to the Rater. 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."

29. ***Change*** **– Footnote 4**

    Footnote 4 has been revised to allow builders, credentialed contractors, and firms that they hire to perform HVAC design: "The person responsible for the heating, cooling, and ventilation design shall be responsible for completing Sections 1 and 2 of this Checklist."

30. ***Change*** **– Footnote 6**

    Footnote 6 has been revised to clarify the credentialed HVAC contractor's responsibility: "The 'Cont. Verified' column shall be used to indicate items verified by the credentialed HVAC contractor (or a firm or HERS Rater hired by the contractor). The credentialed contractor is responsible for these Items and shall sign the bottom of this Checklist."

31. ***Change*** **– Footnote 25 and Signature Fields**

    The signatures at the bottom of the Checklist have been revised to collect the name, signature, and date of signature of representatives of the credentialed HVAC contractor and the builder. Footnote 25 has been applied to the builder name, signature, and date of signature, and explains that the builder's signature is only required if items on the Checklist have been marked "Builder Verified.":

    "Builder name, signature, and signature date are required if any items in Sections 1 through 5 have been marked 'Builder Verified'."

HVAC System Quality Installation Rater Checklist

32. ***Clarification*** **– Section 2**

    To clarify that Items 2.7 and 2.8 are not applicable to ventilation ducts, Footnote 10 has been added to the heading of Section 2 and to these two Items. Footnote 10 reads as follows: "Items 2.7 and 2.8 do not apply to ventilation ducts."

33. ***Clarification*** **– Item 2.8**

    To clarify the configuration of bedroom doors and which air handlers shall be operating during bedroom pressure balancing, Item 2.8 has been revised as follows: "Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / or undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa (0.012 in. w.c.) with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating."

34. ***Change*** **– Item 4.1, Footnote 17**

    To address partners' difficulties meeting the total duct leakage limit, Item 4.1 has been revised as follows: "Total Rater-measured duct leakage ≤ 8 CFM25 per 100 sq. ft. of conditioned area." Because the total duct leakage

threshold is not being changed for homes with less than 1,200 sq. ft. of conditioned floor area, there is no different threshold for those homes.

Footnote 16 has been shortened to only include guidance related to duct leakage testing protocols: "Duct leakage shall be determined and documented by a Rater using a RESNET-approved testing protocol only after all components of the system have been installed (e.g., air handler and register grilles). Leakage limits shall be assessed on a per-system, rather than per-home, basis."

Remaining guidance related to testing duct leakage to the outside has been consolidated in Footnote 17, which now reads as follows:

"For homes that have ≤ 1,200 sq. ft. of conditioned floor area, measured duct leakage to outdoors shall be ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area. Testing of duct leakage to the outside can be waived if all ducts & air handling equipment are located within the home's air and thermal barriers AND envelope leakage has been tested to be less than or equal to half of the Prescriptive Path infiltration limit for the Climate Zone where the home is to be built. 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 less than 1,200 sq. ft. of conditioned floor area."

35. ***Change*** **– Item 4.3**

Because Item 4.1 already limits total duct leakage throughout the duct system, it is no longer mandatory for duct boots to be sealed to the floor, wall, or ceiling. To reflect this change and to allow partners to use their judgment to determine when to seal and inspect duct boots, Item 4.3 has been removed.

36. ***Clarification*** **– Item 9.1 and 9.2**

Multispeed ventilation and exhaust fans must meet the sone limits of Items 9.1 and 9.2 when producing no less than the minimum airflow rate required by Section 8. To reflect this change, Item 9.1 has been revised as follows: "Intermittent supply and exhaust fans rated at ≤ 3 sones by mfr. when producing no less than the minimum airflow rate required by Section 8 of this Checklist, unless rated flow ≥ 400 CFM." Additionally, Item 9.2 has been revised as follows: "Continuous supply & exhaust fans rated at ≤ 1 sone by mfr. when producing no less than the minimum airflow required by Section 8 of this Checklist."

37. ***Refinement*** **– Footnote 2**

To correct a grammatical error and to align with the language used in Footnote 1 of the Contractor Checklist, Footnote 2 has been revised to read: "The Rater is only responsible for ensuring that the Contractor has completed the Contractor Checklist in its entirety and verifying the discrete objective parameters referenced in Section 1 of this Checklist, not for assessing the accuracy of the load calculations or field verifications included or for verifying the accuracy of every input on the Contractor Checklist."

Water Management System Builder Checklist

38. ***Refinement*** **– Footnote 2**

To align with language elsewhere related to Raters' responsibility, Footnote 2 has been revised to read: "Upon completion, the builder shall return the Checklist to the Rater for review. Alternatively, at the discretion of the builder and Rater, the Rater may verify any item on this Checklist. When this occurs, the Rater shall check the box of the verified items in the Rater Verified column. The Rater is only responsible for ensuring that the builder has completed the Builder Checklist in its entirety and for verifying the items that are checked in the Rater Verified column (if any). The Rater is not responsible for assessing the accuracy of the field verifications for items in this Checklist that are not checked in the Rater Verified column. Instead, it is the builder's exclusive responsibility to ensure the design and installation comply with the Builder Checklist."

39. ***Clarification*** **– Footnote 13**

To clarify that materials that have been evaluated by ICC-ES according to AC 115, Acceptance Criteria for Waterproof Membranes for Flooring and Shower Lining, are permitted to be used to meet the Intent of Item 4.2, Footnote 13 has been revised as follows: "In addition to cement board, materials that have been evaluated by ICC-ES according to AC 115, Acceptance Criteria for Waterproof Membranes for Flooring and Shower Lining, may also be used to meet this requirement. Monolithic tub and shower enclosures (e.g., fiberglass with no seams)

are exempt from this backing material requirement unless required by the manufacturer. Paper-faced backerboard may only be used behind monolithic enclosures or waterproof membranes that have been evaluated by ICC-ES according to AC 115, and then only if it meets ASTM mold-resistant standards ASTM D3273 or ASTM D6329."

Version 2.5 National Program Requirements

40. ***Refinement*** **– Version 3 Training and Credentialing Timeline**

    To more clearly explain the dates by which builders must have completed the Version 3 Online Builder Orientation and HVAC contractors must be credentialed by an EPA-recognized oversight organization, the third paragraph of the Version 2.5 National Program Requirements has been revised to read as follows: "While Raters will be required to complete Version 3 training provided by RESNET-accredited training providers by January 1, 2012 to qualify homes under Version 3, it is recommended, but not required, that Raters participate in this training prior to completing the inspection checklists under Version 2.5. Similarly, while builders will be required to complete training provided by EPA by January 1, 2012 and HVAC contractors will be required to complete training provided through industry associations by January 1, 2012to complete the HVAC System Quality Installation Contractor Checklist, it is recommended, but not required, that these parties also participate in this training prior to completing their respective Inspection Checklists"

41. ***Change*** **– Exhibit 1: Performance Path - Terminology Related to Performance Path Requirements**

    To align the terminology used in this document with that used in other program documents, the Version 2 Performance Path summary will be revised to read, "Fixed HERS Index Target" and the Version 2.5 and Version 3 summary will be revised to read, "Variable HERS Index Target."

42. ***Change*** **– Exhibit 1: Version 3 Total Duct Leakage**

    To address partners' difficulties meeting the total duct leakage limit, the Version 3 Total Duct Leakage section of Exhibit 1 has been revised as follows: "≤ 8 CFM_{25} per 100ft^2 CFA".

43. ***Refinement*** **– Exhibit 1: Version 3 ENERGY STAR Labeled Products – Prescriptive Path**

    To align with the terminology now used to describe ENERGY STAR qualified lighting products, the lighting requirement in the Version 3 ENERGY STAR Labeled Products- Prescriptive Path section of Exhibit 1 has been revised as follows: "ENERGY STAR qualified light bulbs or fixtures shall be installed in 80% of RESNET-defined Qualifying Light Fixture Locations.(Alternate: ENERGY STAR Advanced Lighting Package)".