

## Highlights from ENERGY STAR Certified Homes Version 3, Revision 08

Revision 08 of the v3 program has now been posted to the [ENERGY STAR website](#). Partners are permitted to use this Revision immediately, at their discretion, but must apply this Revision to all homes permitted on or after July 01, 2016. As part of this Revision, all major program documents have been updated. A Revision 08 Version Tracking Document, containing all of the specific changes in this Revision, has also been created. EPA strongly encourages partners to review these documents. The most substantial updates are summarized below:

### National Program Requirements

- To simplify the program, the Prescriptive Path has been removed. Homes with a permit date before 09/01/2015 will be permitted to use the modified Prescriptive Path allowance, available at [www.energystar.gov/v3prescriptivepath](http://www.energystar.gov/v3prescriptivepath).

### Thermal Enclosure System Rater Checklist

- This Checklist have been transitioned to two new program documents - the Rater Design Review Checklist and the Rater Field Checklist. The Rater Design Review Checklist contains the Items that can be completed at the design stage, and the Rater Field Checklist contains the Items that must be completed in the field.
- A new Item has been added to further clarify that the combination of an air barrier and air sealing is always required in walls separating attached garages from occupiable space, and in floor cavities that are aligned with these walls.
- Fenestration has been included in the total UA calculation, such that it can be used to offset decreases in insulation.
- The requirements for fully-aligned air barriers have been consolidated and edited to distinguish between vertical and horizontal air barriers for ceilings, walls, & floors, as well as to define the required locations of the air barriers relative to the surface of the insulation. Helpful diagrams illustrating the revised policy are included in the Policy Record.
- Because it was not the program's intent to require the use of drywall finishes or foam insulation products in basements or crawlspaces as a prerequisite for ENERGY STAR certification under Version 3, the requirement to include an interior air barrier on all below-grade walls has been made a recommendation, rather than a requirement.
- To address partner concerns about achieving 24" on-center framing with 2x6 walls in Climate Zone 5, this requirement has been revised so that it only applies to Climate Zones 6-8.

### Water Management System Builder Checklist

- This Checklist has been repurposed as the Water Management System Builder Requirements. While builders will not be required to maintain documentation demonstrating compliance for each individual certified home, builders will continue to be responsible for ensuring that each certified home is constructed to meet these requirements.
- To help streamline the commissioning tasks required of the HVAC contractor, the requirement to visually inspect the HVAC drain pan has been relocated to the Water Management System Builder Requirements.

### HVAC System Quality Installation Contractor Checklist

- This Checklist has been transitioned to two new program documents - the HVAC Design Report and the HVAC Commissioning Checklist. The HVAC Design Report contains the design-related Items and will continue to be completed by the HVAC designer. The HVAC Commissioning Checklist contains the commissioning-related Items and will continue to be completed by a credentialed HVAC contractor for each HVAC system.
- To improve the clarity and enforcement of design-related requirements, county-level outdoor design temperature limits have been defined and posted as a resource to [www.energystar.gov/hvacdesigntemps](http://www.energystar.gov/hvacdesigntemps).
- To improve the clarity and enforcement of requirements related to group designs, the policy has been redefined in terms of tolerances that must be met, the ability has been added to report loads for multiple orientations on a single HVAC Design Report, and a tool to assist designers has been posted to [www.energystar.gov/newhomeshvacdesign](http://www.energystar.gov/newhomeshvacdesign).
- To improve the clarity and enforcement of cooling and heating equipment over-sizing limits, the limits have been aligned with the new version of ACCA Manual S. In addition, the phrase "next nominal size" has been replaced with a quantitative allowance and an alternative tolerance for low-load spaces has been added.
- Section 1 of the HVAC Design Report has been created to consolidate design overview information, which previously resided in multiple locations.
- Section 2 of the HVAC Design Report has been created to consolidate and clarify the ventilation design requirements, which previously resided in multiple locations.

- While testing and balancing of room-by-room airflows is a critical commissioning task, it has been made a recommendation, rather than a requirement, while additional resources are invested to prepare partners for success.
- The requirement for the contractor to take electrical measurements has been removed.
- The requirement for the contractor to verify that HVAC controls meet OEM requirements has been removed.

## **HVAC System Quality Installation Rater Checklist**

- This Checklist have been transitioned to two new program documents - the Rater Design Review Checklist and the Rater Field Checklist. The Rater Design Review Checklist contains the Items that can be completed at the design stage, and the Rater Field Checklist contains the Items that must be completed in the field.
- To improve the clarity and enforcement of design-related requirements, county-level outdoor design temperature limits have been defined and posted as a resource to [www.energystar.gov/hvacdesigntemps](http://www.energystar.gov/hvacdesigntemps).
- To improve the clarity and enforcement of requirements related to group designs, the policy has been redefined in terms of tolerances that must be met, which are reflected in the new Rater Design Review Checklist.
- To improve the clarity and enforcement of cooling and heating equipment over-sizing limits, the limits have been aligned with the new version of ACCA Manual S. In addition, the phrase “next nominal size” has been replaced with a quantitative allowance and an alternative tolerance for low-load spaces has been added.
- To streamline the certification process, Raters are permitted but not required to collect the HVAC Commissioning Checklist to certify a home. In contrast, Raters are still required to collect and review the design documentation, as documented on the HVAC Design Report.
- To accommodate challenges in bedrooms with high design airflows, an alternative has been added allowing a Rater-measured pressure differential  $\leq 5$  Pa, rather than  $\leq 3$  Pa, to be used for bedrooms with a design airflow  $\geq 150$  CFM.
- The limit on total duct leakage has been increased for a duct system with three or more returns. Specifically, the total Rater-measured duct leakage has been increased to be the greater of  $\leq 6$  CFM25 per 100 sq. ft. of CFA or  $\leq 60$  CFM25 at ‘rough-in’ or the greater of  $\leq 12$  CFM25 per 100 sq. ft. of CFA or  $\leq 120$  CFM25 at ‘final’.
- An absolute amount of Rater-measured duct leakage has been added to address systems serving small spaces. The limit on total leakage at ‘rough-in’ has been increased to the greater of  $\leq 4$  CFM25 per 100 sq. ft. of CFA or  $\leq 40$  CFM. The limit at ‘final’ has been increased to the greater of  $\leq 8$  CFM25 per 100 sq. ft. of CFA or  $\leq 80$  CFM. Finally, the limit for leakage to outside has been aligned to be the greater of  $\leq 4$  CFM25 per 100 sq. ft. of CFA or  $\leq 40$  CFM25.
- To better reflect the limitations in commissioning and equipment accuracy at low airflow rates, the tolerance for the Rater-measured ventilation airflow rate has been revised to be within either  $\pm 15$  CFM or  $\pm 15\%$  of design value.
- A new requirement has been add for Raters to visually verify that no outdoor air intakes are connected to the return side of the HVAC system, unless controls are installed to limit operation & restrict intake when not in use, which mirrors the requirements for the HVAC designer.
- A new requirement has been added if the system utilizes the HVAC fan. In such cases, the Rater must verify that a strategy is included to reduce energy consumption, which mirrors the requirements for the HVAC designer.
- The sound limit for intermittent bathroom exhaust fans has been made a recommendation, rather than a requirement.
- The requirement for Raters to verify the math related to refrigerant charge commissioning has been removed.
- The requirement for Raters to verify that the HVAC system’s heat, cool, & fan mode is operational has been removed.
- The visual inspection requirements for shared exhaust ducts and clothes dryer exhaust ducts have been removed.
- While Raters will continue to be required to measure static pressure, the requirement to verify that the Rater-measured static pressure is within a certain range of the HVAC contractor’s values has been removed
- An exemption from the ventilation inlet requirements has been added in cases where the inlet is only visible via rooftop access. In addition, the inlet height requirements have been simplified to be  $\geq 2$  ft. above grade or the roof deck in all Climate Zones. Finally, the requirement to verify that the inlet is not obstructed by snow, plantings, condensing units or other material at time of inspection has been removed.
- The requirements regarding over-ride controls for ventilation systems have been clarified to indicate that a readily-accessible ventilation override control must be installed and also labeled if its function is not obvious (e.g., a label is required for a standalone wall switch, but not for a switch that’s on the ventilation equipment).