ENERGY STAR Single-Family New Homes

Caribbean & Pacific Rater Design Review Checklist, Version 3 / 3.2 (Rev. 13)

Requirements specific to the "Caribbean" shall be met in Puerto Rico and the U.S Virgin Islands.
Requirements specific to the "Pacific" shall be met in Guam, Hawaii, and the Northern Mariana Islands.

Home Address: _____ City: _____ State: _____ Permit Date: _____

1. Partnership Status	**Must Correct**	**Rater [1] Verified**	**N/A[2]**
1.1 Rater has verified and documented that builder has an ENERGY STAR partnership agreement using www.energystar.gov/ResPartnerDirectory. [3]	☐	☐	-
1.2 Rater has verified and documented that their company has an ENERGY STAR partnership agreement using www.energystar.gov/ResPartnerDirectory. [4]	☐	☐	-
1.3 Rater(s) signing checklists attest that they have completed EPA-recognized training and are credentialed by a Home Certification Organization (HCO).	☐	☐	-
2. Review of National HVAC Design Report			
2.1 National HVAC Design Report collected for records, with no applicable Items left blank. [5]	☐	☐	-
3. Solar Water Heating System			
3.1 Specified system is Solar Rating & Certification Corporation OG-300 certified. [6]	☐	☐	-
This Item only required for homes in the Pacific, otherwise check "N/A".			☐
3.2a Specified system has a Solar Fraction ≥ 90%. [6]	☐	☐	-
This Item only required for homes in the Caribbean, otherwise check "N/A".			☐
3.2b If system is specified to comply with Measure A of the Caribbean Program Req.'s, it has a Solar Fraction ≥ 87%. [6]	☐	☐	-
4. Review of Thermal Comfort System Design			
4.1 Operable apertures (e.g., windows, skylights, window air inlets) specified that meet the following requirements:			
4.1.1 For all primary living areas, [7] operable aperture areas totaling a minimum of 12% of the floor area of the room specified in that room. [8] Components contributing to the operable aperture area specified to be able to be opened without the use of ladders or special tools.	☐	☐	-
4.1.2 The total operable aperture area specified in each room shall be provided by a minimum of two components. [9] No single component shall contribute ≥ 70% of the total operable aperture in each room.	☐	☐	-
4.1.3 The specified components contributing to the operable aperture area in each room shall be located on two or more exterior walls except when placed on a single exterior wall with wing walls. [10, 11] If placed on adjacent walls, components shall be placed at a minimum of one third of the wall width from the adjoining corner.	☐	☐	-
4.1.4 Insect screens specified for all components that contribute to the operable aperture area.	☐	☐	-
4.1.5 All components that contribute to the operable aperture area specified to include an integral device that is capable of holding the component in an open position. [12]	☐	☐	-
4.1.6 All interior doors in primary living areas [7] specified to include a mechanically-attached door stop or similar device capable of holding the door in an open position.	☐	☐	-
4.2 One ceiling fan (i.e., not just a junction box) specified in every primary living area [7] greater than 75 ft^2.	☐	☐	-
4.3 Specified wall insulation meets or exceeds R-5.	☐	☐	-
This sub-section only required for homes in the Pacific, otherwise check "N/A".			☐
4.4a Solar gain through windows shall be reduced as follows:			
4.4.1a South-facing windows shall have an overhang with a projection factor ≥ 1.0 and all other windows shall have an overhang with a projection factor ≥ 0.60 [13], **OR**;	☐	☐	-
4.4.2a Windows shall have ≤ 0.60 U-Value; ≤ 0.27 SHGC, **AND**;	☐	☐	-
4.4.3a Skylights shall have ≤ 0.70 U-Value; ≤ 0.30 SHGC, **AND**;	☐	☐	-
4.4.4a If total window-to-floor area ratio > 15%, then SHGCs adjusted as outlined in Footnote 14. [14]	☐	☐	-
This sub-section only required for homes in the Caribbean, otherwise check "N/A".			☐
4.4b Solar gain through windows shall be reduced as follows:			
4.4.1b North-facing windows shall have an overhang with a projection factor ≥ 0.30 [13], **AND;**	☐	☐	-
4.4.2b All windows not North-facing shall have an overhang ≥3 ft. deep and with a projection factor ≥ 0.40 [13], **AND**;	☐	☐	-
4.4.3b Windows in all bedrooms and any mechanically cooled rooms shall have: ≤ 1.2 U-Value; ≤ 0.35 SHGC, **AND**;	☐	☐	-
4.4.4b Skylights shall have ≤ 0.70 U-Value; ≤ 0.30 SHGC, **AND**;	☐	☐	-
4.4.5b Window-to-floor area ratio ≤ 18%.	☐	☐	-

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5. Mini-Split HVAC System	**Must Correct**	**Rater [1] Verified**	**N/A[2]**
This sub-section only required for homes in the Pacific, otherwise check “N/A”.			☐
5.1a Mini-split AC’s or HP’s ≥ 16 SEER or SEER2, each with ≤ 10 ft. of ductwork, specified to serve all bedrooms.[15]	☐	☐	-
5.2a No space cooling is required outside of bedrooms, but if any space cooling is specified outside bedrooms, it must be provided using mini-split AC’s or HP’s ≥ 16 SEER or SEER2, each with ≤ 10 ft. of ductwork.	☐	☐	-
This sub-section only required for homes in the Caribbean, otherwise check “N/A”.			☐
5.1b If mini-split AC’s or HP’s are specified in order to comply with Measure B of the Caribbean Program Requirements, they shall be ≥ 15 SEER or SEER2, each with ≤ 10 ft. of ductwork, and serve all bedrooms. [15]	☐	☐	☐
5.2b No space cooling is required outside of bedrooms, but if any space cooling is specified outside bedrooms, it must be provided using mini-split AC’s or HP’s ≥ 15 SEER or SEER2, each with ≤ 10 ft. of ductwork.	☐	☐	-
5.3b If a mini-split HVAC system will <u>not</u> be installed in the bedrooms at the time of certification, then the following details shall be included so that a mini-split HVAC system may be installed more easily after certification. If a mini-split HVAC system will be installed at the time of certification, then check “N/A”.			☐
5.3.1b An outdoor location has been designated on the plans for the future installation of a mini-split condensing unit and indoor locations have been designated on the plans for future installation of wall-mounted mini-split fan-coil units to serve the bedrooms.	☐	☐	-
5.3.2b A wall-mounted junction box has been specified at code height within the designated area for the condensing unit along with electrical conduit from the junction box to the main electric panel board for the dwelling, to be installed at the time of certification.	☐	☐	-
5.3.3b A 3" pipe sleeve through the exterior wall has been specified, to be installed at the time of certification, for future power, communication, and refrigerant line connections between the area designated for the condensing unit and fan-coil units.	☐	☐	-
5.3.4b If the designated location of the wall-mounted mini-split fan-coil units is on an interior wall, then a 1" condensate drain line insulated with 1/2" thick elastomeric or equivalent insulation has been specified with a point of connection at the fan-coil units and that terminates in storm water lines or outdoors, to be installed at the time of certification.	☐	☐	-

Rater Name: _____ Date of Review: _____

Rater Signature: _____ Rater Company Name: _____

Footnotes

1. All items shall be verified for each certified home and sampling protocols shall not be used. The term 'Rater' refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater or Approved Inspector, as defined by ANSI / RESNET / ICC 301, or an equivalent designation as determined by a Home Certification Organization (HCO); and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.
2. The column titled "N/A," which denotes items that are "not applicable," should be used when the checklist Item or sub-section is not applicable to the region where the home is being certified, is not present in the home, or conflicts with local requirements.
3. Raters are only required to document the partnership status of a builder once, for the first home that the Rater certifies for them.
4. Raters are only required to document the partnership status of their company once, for the first home that the Rater certifies for them.
5. The Rater shall collect at least one National HVAC Design Report per plan. If more than one HVAC system is designed for a plan, then the Rater shall collect one National HVAC Design Report per system design. Sections 1 and 2 shall always be completed. In contrast, Sections 3 through 5 are recommended, but not required, to be completed. If not completed, they shall be marked "N/A".

   The report is only required to be collected once per system design, even if multiple homes are built using this design (e.g., in a production environment where the same plan is built multiple times, only one report is required as long as no aspect of the system design changes between homes). The Rater is only responsible for verifying that the designer has not left any items blank on the applicable Sections of the National HVAC Design Report, not for verifying the accuracy of every input on the National HVAC Design Report. Homes certified under Rev. 13 of the program requirements are permitted to use any Revision of the National HVAC Design Report between Rev. 08 and Rev. 13.
6. Solar fraction shall be determined using the ICC-SRCC OG-300 Solar Water Heating System Certification Program's annual solar fraction rating (SF_A) for the rating location closest to the home. For Dwellings or Dwelling Units with ≤ 3 bedrooms, determine SF_A using the Low U.S. DOE Draw Pattern; otherwise, use Medium. A solar water heater system that has no backup water heater is permitted to be used. For the current OG-300 directory, visit https://solar-rating.org/directories/certified-companies/.
7. Primary living areas include dining rooms, living rooms, family rooms, dens, bedrooms and home offices. Primary living areas do not include other spaces, such as kitchens, bathrooms, hallways, stairways, entrances, garages, and utility rooms.
8. Aperture area used to meet the requirements for one primary living area shall not also be used to meet the requirements for a second primary living area. Operable area shall be based on the free unobstructed area through the aperture. Obstructions that can be removed from the aperture by the occupant without tools or special knowledge, such as blinds, shades, or operable shutters shall not be included when calculating the unobstructed area. For the purposes of this checklist Item, 90% of the nominal window or door area of jalousie window and door products shall be permitted to be used as the free unobstructed area.
9. For example, components could consist of two windows or one window and one door.
10. Apertures are recommended, but not required, to be on walls that directly bound the primary living area. Apertures outside the primary living area shall be "effectively aligned" with at least one aperture inside the primary living area. An aperture is "effectively aligned" if a straight line can be drawn from one aperture to within 5 ft. of the other aperture. If the apertures are on walls that don't directly bound the primary living area, then there shall be an unobstructed path between the primary living area and those apertures that is at least as large as the square footage of those apertures. See energystar.gov/apertures for additional guidance.
11. Where wing walls are included in the building design for ventilation purposes, they shall be placed between windows to create a high-pressure and a low-pressure zone on each window. Wing walls shall extend from the bottom to the top of the window and extend outward from the building a distance at least equal to one-half the width of the window. Additionally, it is recommended but not required that the wing wall be located on the windward side of the building.
12. For example, an integral device could consist of a mechanically-attached door stop or operable louvers for exterior doors.
13. South-facing windows are those within 22.5 degrees of true south. North-facing windows are those within 22.5 degrees of true north. The window projection factor shall be determined in accordance with Equation 5-1 of the 2009 IECC:

    PF = A / B

    Where PF is the projection factor, A is the distance measured horizontally from the furthest continuous extremity of any overhang, eave, or permanently attached shading device to the vertical surface of the glazing and B is the distance measured vertically from the bottom of the glazing to the underside of the overhang, eave, or permanently attached shading device.
14. All decorative glass and skylight window areas count toward the total window area to above-grade conditioned floor area (WFA) ratio. For homes that have a WFA ratio > 15%, the following improved window SHGC shall be used:

    Improved SHGC = [0.15 / WFA] x 0.27
15. A single mini-split head is permitted to serve one or more bedrooms using up to 10 ft. of ductwork per head.