Q&A from December 2017 on the Proposed Merged Multifamily New Construction Specification

This document contains a summary of questions received during the first comment period for the Merged Multifamily New Construction Specification, which ended December 15, 2017, and EPA's response. These questions are based upon information from the webinars held in November 2017 on the proposed changes. The answers provided are inclusive of the updates to the proposed technical requirements that were presented in March 2018.

The Environmental Protection Agency
is not responsible for any typographical errors or omissions.

Q&A Related to Proposed Merged Multifamily New Construction Specification

Table of Contents

Q&A Related to Proposed Merged Multifamily New Construction Specification

ID	Question Summary	EPA's Response
General		
1	• Can a project pursuing LEED use the LEED Energy Budget as a performance target instead of meeting the ERI target?	• The LEED Energy Budget would not be accepted. The performance target options are based on an ASHRAE (or Title 24 in CA) target, an ERI target based on the ENERGY STAR Multifamily Reference Design, or prescriptive requirements.
2	• Are requirements based on permit date or can a project submit a project application? "Permit date" can be a mushy date in some jurisdictions.	• EPA is not proposing to use the Project Application that was used in the MFHR program as part of the new program. The current proposal is to use permit dates or permit application dates to determine transition periods. Footnote 18 of the draft Rater Design Checklist states: "The Rater may define the 'permit date' as either the date that the permit was issued or the application date of the permit. In cases where permit or application dates are not available, Providers or Multifamily Oversight Organizations have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented."
3	• What is the definition of a "duplex"?	• When referencing "duplex", EPA was intending to mean any detached building with exactly two units (the units can be side-by-side or stacked). EPA has switched to the term "two-family dwelling", as used in IRC and IECC, instead of "duplex" to clarify this intent.
4	• What are the rules for sampling? Will there be a "firewall" for sampling projects where some units fall under the single-family specification vs the multifamily one? Or can sampling be applied to the whole project as long as the units have similar construction type? • Will sampling be allowed pre-drywall?	• Sampling will be allowed as long as it follows the RESNET sampling protocols.
Performance Target: Reference Design, ASHRAE Modeling		
5	• In the reference design home, how will the windows be distributed? (One face, all four directions like Certified Homes, or matching the proposed design?)	• EPA is proposing to have the window orientation align with the orientation in the proposed design for the dwelling unit and not distributed evenly across all orientations.

6	• If ceiling fans are not present, are they still part of the Reference Design?	• No. The current Target Procedure assigns 0 ceiling fans in the ENERGY STAR Reference Design Home if there are 0 ceiling fans in the proposed design.
7	• Are the ENERGY STAR residential or commercial specs used for clothes washers in the Reference Design? • Overall, how are ENERGY STAR laundry appliances handled when a central laundry facility is provided? Although the commercial equipment is less efficient, people may not do as many partial loads	• The Reference Design will use residential specifications for clothes washers and dryers regardless of whether the specified equipment is residential or commercial, and regardless of whether it is located in-unit or in a central laundry facility. In the proposed updates to ANSI 301, residential and commercial laundry equipment are not treated differently.
8	• How does the program requirements address commercial water heaters? For instance, a 120 gallon tank that serves a small building?	• Commercial water heaters will follow the same guidance for efficiency as the residential water heaters. If following the Prescriptive Path, a 120 gallon gas commercial water heater would still need to meet or exceed the 0.77 EF. If following the HERS path, the ENERGY STAR HERS Index Target will be based on a reference home with a 0.77 EF water heater.
9	• How can low-rise projects use the ASHRAE Performance Target option when the 90.1 standard is meant for structures above 3 stories?	• ASHRAE 90.1 Appendix G includes a set of requirements for how to model and set up a baseline. Projects outside the scope of 90.1 are able to still follow those requirements even if they are not able to use that modeling for code compliance or other programs that require explicit compliance with 90.1. Note that the baseline for low-rise projects will be wood-framed which is the only proposed deviation from the guidance for mid and high-rise projects.
10	• ENERGY STAR requirements have been intended to achieve 15% savings over code. This may prove too challenging a target for states adopting newer codes like 2018 IECC or ASHRAE 90.1-2016. Will EPA consider lowering the percent savings for states adopting more efficient codes?	• EPA does review new codes as they are adopted. For example, EPA determined that the performance target for Title 24 2016 should be reduced to 10% savings. Since the 2018 IECC residential code did not increase in stringency as compared to 2012 and 2015 IECC, the ENERGY STAR Reference Design will not change for states adopting the 2018 IECC. For projects pursuing the ASHRAE performance path, EPA has not yet made a determination regarding the percent savings needed for states that have adopted 2018 IECC or ASHRAE 90.1-2016.
Envelope		

Q&A Related to Proposed Merged Multifamily New Construction Specification

11	• Why are some references to insulation mentioning ASHRAE and some mentioning the IECC?	• The checklists only reference the IECC for mandatory insulation requirements. • The ASHRAE performance target is based on savings above ASHRAE 90.1 since that is the modeling equivalent of savings above the IECC and Appendix G is commonly used. Projects will need to make sure they meet the minimum insulation requirements in the IECC, but they can go beyond these levels, and also meet the performance target based on ASHRAE 90.1 Appendix G. • The checklists do switch from IECC to reference ASHRAE 90.1-2007 levels with respect to lighting requirements since space-by-space lighting power densities were not included in the 2009 IECC.
12	• Is the rough opening around apartment doors to corridors also required to be sealed since they're required to be weatherstripped?	• The rough opening is not specifically required to be sealed as this will be captured in the blower door test.
13	• Are gas meter rooms that have to be vented per code exempted from air sealing?	• Overlapping code requirements shall always be met, when code is more stringent or where the requirements conflict and no equivalent option exists to meet both.
14	• How does an air barrier align with insulation in a punched window with exterior insulation? The insulation isn't always turned into the top of the rough opening to fully connect the insulation to the window.	• The scope of the requirement for fully-aligned air barriers remains the same as it was in the Homes program. Section 2 of the Rater Field checklist states: "At each **insulated** location below, a complete air barrier is provided that is fully aligned as follows." The air barrier needs to be aligned with insulation but only where there is insulation installed.
15	• Will wood-framed projects be allowed to meet the reduced thermal bridging requirement through advanced framing instead of continuous insulation? If so, will the exemption from advanced framing (Footnote 20 of the Rater Field Checklist for Certified Homes) be available?	• Wood-framed projects of any height in climate zones 1-3 or 3 stories and less in other climate zones, are allowed to use the advanced framing option, instead of continuous insulation, with requirements that are slightly modified as compared to the Homes program. This is an update from the fall proposal. The exemption for structural reasons is still available if needed.
16	• Wouldn't SIPs or ICF have a minimum R-3 continuous insulation? Why does it say R-3 or these construction types. Wouldn't just the R-3 requirement cover it?	• While it is very likely that most SIPs, ICFs, and double-wall assemblies will have R-3 continuous, to avoid confusion about whether they qualify as "continuous exterior rigid insulation", they are listed separately.

17	• Is R-3 on the interior still "continuous" even though the slab edge wouldn't be insulated?	• The reduced thermal bridging option specifies that the insulation be on the exterior, not interior. • Item 2.3 of the Rater Field Checklist additionally requires that the slab edge be insulated. If the slab edge qualifies for the balcony alternative and remains uninsulated, the project can still meet the "continuous exterior rigid" insulation requirement, even though it is not continuous at the balcony, as long as it meets the modified UA requirement in the alternative.
18	• Why is the ENERGY STAR slab-on-grade requirement only R-5, when R-10 is required in Climate Zone 4 in the 2009 IECC?	• Since ENERGY STAR projects may be built in states that do not have a required code, ENERGY STAR has established a minimum value. • As in the IECC, ENERGY STAR projects are able to use a UA calculation to demonstrate compliance with IECC insulation levels required in the Rater Design Checklist and so without a mandatory minimum, a project could potentially reduce the slab-on-grade edge insulation by increasing insulation of another assembly. This requirement means that projects cannot trade-off below R-5.
19	• Is R-5 slab edge insulation required for basement slabs that are below-grade? • Is R-5 slab edge insulation required at connections with sidewalks or storefront entrances?	• Projects with a traditional basement must meet the above and below grade wall insulation levels, but this slab-on-grade insulation requirement only applies to slabs less than 24" below grade. This would not apply to most basement slabs. • Similar to the Homes program requirement, R-5 slab edge insulation is required at that connection with sidewalks and storefront entrances, unless specifically exempted here: www.energystar.gov/slabedge.
20	• Is the slab insulation just referring to floor slabs (on grade and above unconditioned space)? Or should it also be explicitly stated for all slabs (e.g. if there are apartments on the 3rd and 4th floor, the 4th floor slab is required to be insulated?)	• There are two different requirements related to reducing thermal bridging associated with concrete slab edges in CZ 4-8. One is the R-5 slab-on-grade requirement, which is identical to what was in the Homes program. A new one (Rater Field, checklist item 2.3) was developed to address thermal bridging at elevated slab edges. This is not based on space conditioning above or below the slab. Concrete slabs between floors without balconies are not subject to item 2.3, as they are addressed by item 2.6.
21	• In the MFHR program, there was a requirement to provide insulated AC covers for through wall ACs. Why was that not proposed for the new program?	• When merging the program requirements, EPA had to carefully consider how many mandatory requirements to keep from each program. The requirements that had the highest energy savings and largest impact on performance were selected. While these insulated AC covers are certainly a good idea, there is no assurance that they are actually used by the occupants, so the savings impact is questionable.

Q&A Related to Proposed Merged Multifamily New Construction Specification

22	• The ENERGY STAR Reference Design references the 2015 IgCC for class AW commercial windows, while the checklist also references the 2009 IECC. Which is the requirement?	• Footnote 5 of the Rater Design Checklist explains which requirements are applicable. The minimum requirement for all projects is the 2009 IECC. For the prescriptive path, some requirements are more stringent. Therefore, in the Prescriptive Path, dwelling units with class AW commercial windows, must meet the 2015 IgCC requirements.
23	• Is the prescriptive path building Window-to-Wall ratio calculated for the whole building or per dwelling unit? Does it include common spaces or just residential and residential-associated spaces?	• The Window-to-Wall ratio is combined for all the dwelling unit and common space walls. Footnote 7 of the Rater Field Checklist describes the methodology: Window-to-Wall ratio is taken as the sum of all window area divided by the total exterior above-grade wall area. All decorative glass and skylight window area contribute to the total window area to above-grade wall ratio (WWR). Spandrel sections of curtain wall systems contribute to the above-grade wall area.
DHW, Combustion Appliances, Ducts and Ventilation		
24	• If the MFHR requirement for electronic mixing valves for central DHW is not being proposed for the new program, are mechanical valves allowed now?	• There is no limitation on the type of mixing valves used.
25	• What about projects that wish to use 0.5 gpm aerators in bathrooms?	• The requirements are only the minimum levels. Project teams are able to go beyond those efficiencies at any time. Note that this requirement is only required in dwelling units for the Prescriptive Path and in common spaces for the HERS and Prescriptive Paths.
26	• The new program doesn't allow mechanically-drafted fireplaces as was permitted in the Home program. Does that prohibit vent-free fireplaces?	• Direct-vented fireplaces are permitted. If the proposed fireplace is vent-free, that likely does not meet the requirement to be direct-vented, which means it obtains all air for combustion from the outdoor atmosphere and discharges all flue gases to the outside atmosphere.
27	• Is insulation required on all ductwork in unconditioned spaces? Or only applicable to heating and cooling supply and return ducts? Does ventilation ductwork for ERV/HRV ductwork require insulation? Do the requirements for duct quality installation change based on duct location?	• The proposed requirement (Rater Field checklist item 6.3) requires insulation on all supply and return ducts that are not in conditioned space, inclusive of ducts that are outside. The footnote 38 clarifies that this does not apply to ductwork for local exhaust or exhaust-only dwelling-unit mechanical ventilation. The header for this section on Duct Quality Installation states that the section "applies to Heating, Cooling, Ventilation, Exhaust, & Pressure Balancing Ducts, Unless Noted in Footnote." The insulation requirements on the ERV/HRV ductwork therefore are dependent on the location of the ductwork and their ventilation purpose.

28	• Will projects still be allowed to test duct leakage at rough-in with the 40 CFM25 or 4 CFM25/100ft^2 limit?	• Yes, this option is still available. See Rater Field Checklist Item 6.4 for more information. Please note that this allowance may differ based on the number of ducted returns present.
29	• For any apartment less than or equal to 1000ft^2, is the leakage allowance at final 80CFM, like in Homes? And for any apartment larger than 1000ft^2, the math applies to calculate the higher leakage allowance?	• Yes, for apartments with at least one ducted return. Please note that these allowances may differ based on the number of ducted returns present.
30	• The proposed requirements include measuring dwelling-unit mechanical ventilation rates, within 15% of design. What standard should be used to measure this air flow?	• Footnote 44 of the Rater Field Checklists states that airflow shall be measured in accordance with ANSI 380.
31	• The proposed requirements include measuring common area ventilation rates, within 15% of design. What standard should be used to measure this air flow?	• Footnote 44 of the Rater Field Checklists now states that the procedures in ANSI 380 shall be used to measure airflow, even though the scope of ANSI 380 does not include common areas of buildings.
32	• Testing for minimum OA rates in common areas to within 15% will be a challenge due to low air flow rates. Will this threshold also include a minimum ±CFM like ESCH does? Is this rater measured or is a TAB report acceptable? If rater measured, would this be to spot check the TAB report?	• Rater Field Checklist item 7.1 clarifies that this is a Rater-measured value and that the range is either ±15% or ±15 CFM. There is no requirement for the Rater to check a TAB report. Sampling will be allowed as long as it follows the RESNET sampling protocols.
33	• In certain Paths and/or spaces, a proposed requirement (item 4.2.1 and 4.2.2) states that ventilation must be within 50% of ASHRAE 62-2013. Is the 15% testing allowance additive to the design allowance?	• Yes. If the min rate is 100 CFM and they design 150 CFM, the Rater needs to be within 15 CFM or 15% of the designed rate.

34	• If the apartment local mechanical exhaust is through central HRVs/ERVs, how does the ECM motor/NEMA Premium motor requirement apply?	• Item 7.6 of the Rater Field checklist was revised to clarify that the requirement only applied to fans that are associated with the dwelling-unit mechanical ventilation system, and not systems only associated with local mechanical exhaust. If the central balanced systems are providing both dwelling-unit mechanical ventilation and local mechanical exhaust, the motor efficiency requirement applies.
35	• Are dryer exhaust fans required to be NEMA Premium certified?	• Item 7.6 of the Rater Field checklist was revised to clarify that the requirement only applied to fans that are associated with the dwelling-unit mechanical ventilation system, and not systems only associated with local or point-source exhaust, such as dryer exhaust.
Lighting and Appliances		
36	• Are the lighting efficacy requirements from MFHR not required anymore? Are the only lighting limits the ASHRAE space-by-space LPD?	• The ASHRAE LPD requirements are included in the merged specification, although there is also an option for an overall LPD maximum instead of using the space-by-space calculation. • The efficiency requirements have been removed from the HERS and ASHRAE performance path components in the merged specification to allow project teams more choices when making trade-offs. Note that for HERS path projects, they are still benchmarked to a Reference Design that includes 90% ENERGY STAR lighting in the dwelling unit and in the common spaces they must meet the 90% efficient lighting requirement. Efficient lighting is based upon the ANSI 301 definitions which are more general compared to the lumen-specific definitions in MFHR. Prescriptive Path projects need to meet the 90% efficient lighting requirement in the whole building.
37	• How do the lighting requirements apply to elevator cab lighting?	• Elevators are included in common space and therefore all lighting requirements still apply. The maximum lighting power density (LPD) to be used when meeting item 12.2.1 is the same as the LPD for the corridor.
38	• How do you determine if at least 90% high-efficacy lighting in all common areas and exteriors has been met? Is it based on the number of fixtures? Or bulbs?	• The calculation is the same as the one used in ANSI 301 which is based on the fixture count and not the bulbs. A fixture with multiple bulbs or a single bulb counts as one fixture.
39	• Is the bi-level lighting required to be automatic?	• Yes, this is clarified in Rater Field Checklist Item 12.1.