**Project Name:** Click or tap here to enter text.

Compliance Path: Choose an item.

Date Submitted: Click or tap to enter a date.

Date Reviewed: Click or tap to enter a date.

**Review Outcome**

|  |  |
| --- | --- |
|  | **Reviewed – Option to Resubmit**  Comments may identify changes needed for the project to meet the mandatory requirements. Other comments may note data inconsistencies which prevented the reviewer from understanding the Proposed Design. You may address the comments and resubmit the PDS for another review iteration. Alternatively, you can address the comments and correct inconsistencies in the As-Built Submittal. Failure to meet any of the requirements of the ZERH Multifamily Version 2 program in the As-Built Submittal will result in the project not earning ZERH certification.  *ASHRAE Path* – Current reported savings above ASHRAE 90.1-2019:  Click or tap here to enter text. |
|  | **Not Accepted – Strongly Recommend Resubmittal**  Major design deficiencies and/or inconsistencies have been noted in this submission which may cause this project to not earn ZERH certification at the As-Built stage either due to not meeting mandatory requirements or not meeting the performance target. We strongly recommend that the Proposed Design Submittal is revised and resubmitted for another PDS review iteration in order to provide the project team with further guidance on the noted issues. However, resubmittal at the design stage is not required and you may choose to address the comments in the As-Built Submittal. Failure to meet any of the requirements of the ZERH Multifamily Version 2 program in the As-Built Submittal will result in the project not earning ZERH certification.  *ASHRAE Path* – Current reported savings above ASHRAE 90.1-2019:  Click or tap here to enter text. |

Please note that the MRO for ZERH reserves the right to perform on-site quality assurance for any project, at its discretion.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contents** | | *Page* | Section Complete | Section N/A for Compliance Path |
| **A** | Documentation Collection | *2* |  |  |
| **B** | Validation of Submission Documentation | *3* |  |  |
| **C** | Multifamily Workbook with ZERH Addenda | *4* |  |  |
| **D** | Verification of Prescriptive Path Performance | *6* |  |  |
| **E** | DOE ASHRAE Standard 90.1 Performance-Based Compliance Form | *7* |  |  |
| **F** | DOE ASHRAE Standard 90.1 Companion Tool | *8* |  |  |
| **G** | PHIUS Alternative Performance Target | *8* |  |  |

**A. Documentation Collection**

*This section is required for all paths.*

Purpose: This section ensures that the Proposed Design Submittal (PDS) is complete and contains all applicable documentation specified in Exhibit 4 of the ZERH Multifamily Version 2 National Program Requirements.

*Instructions:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Documentation Required for All Paths** | | | | |
|  | Construction Documents | | | |
|  | Multifamily Workbook with ZERH Addenda | | | |
|  | ZERH Multifamily National Rater Checklist Version 2 | | | |
|  | ZERH Multifamily PV-Ready Checklist Version 2 | | | |
|  | ZERH Multifamily EV-Ready Checklist Version 2 | | | |
| **Documentation Required for ASHRAE Path Only** | | *Mark here if N/A* **→** | | |
|  | DOE ASHRAE Standard 90.1 Performance-Based Compliance Form | | | |
|  | DOE ASHRAE Standard 90.1 Companion Tool for ESMFNC and ZERH MF | | | |
|  | Modeling file ***or*** modeling input and output files | | | |
| **Documentation Required for PHIUS Alt. Path Only** | | *Mark here if N/A* **→** | | |
|  | PHIUS Core or PHIUS Zero 2021 Pre-Certification Documentation | | | |
|  | | | | |
| *The submission is complete, including all documents noted above based on chosen compliance path.* | | | Yes: | No: |
| Notes: | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | |

**B. Validation of Submission Documentation**

*This section applies to all paths.*

Purpose: This section validates that the submittal is eligible for certification under ZERH Multifamily Version 2 based on building type and intent to earn prerequisite certifications and that all participating partners have completed required agreements and training.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table B** | | | Y | N | | N/A |
| 1 | **An ENERGY STAR MFNC Proposed Design Submittal for this building has been reviewed and accepted by the project’s EPA-approved MRO.** | |  |  | |  |
| 2 | The submittal meets the building eligibility requirements in Section 1 of the ZERH Multifamily Version 2 National Program Requirements. | |  |  | |  |
| 3 | The submittal does not include townhouses. | |  |  | |  |
| 4 | Based on building’s Permit Date and DOE’s [Implementation Timeline](https://www.energy.gov/eere/buildings/doe-zero-energy-ready-home-zerh-program-requirements), the project is using the appropriate program version and revision. | |  |  | |  |
| 5 | Documentation collected that the builder or developer is a registered DOE ZERH Partner. | |  |  | |  |
| 6 | The Rater Company (or companies) listed on the Rater Checklist is (are) [listed online as DOE ZERH Verifier Partner](https://www5.eere.energy.gov/buildings/residential/locator)(s). | |  |  | |  |
| 7 | The Rater(s) signing the National Rater Checklist, PV-Ready, and EV-Ready Checklists has (have) completed the [required DOE ZERH training](https://www.energy.gov/eere/buildings/doe-recognized-zerh-certification-organizations). | |  |  | |  |
| 8 | Submitter is aware of requirement for certification under ENERGY STAR Multifamily New Construction Version 1.2. | |  |  | |  |
| 9 | Submitter is aware of requirement for certification under Indoor AirPlus (version determined by permit date). | |  |  | |  |
| 10 | *ASHRAE path onl*y: Documentation collected that ASHRAE modeler is listed in the ENERGY STAR [online directory](https://www.energystar.gov/partner_resources/residential_new/working/other_participants/ashrae_modeler_directory). | |  |  | |  |
|  | | | | | | |
| *The submission documentation has been validated according to the items listed above.* | | Yes: | | | No: | |
| Notes: | | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | | |

**C. Multifamily Workbook with ZERH Addenda**

*This section applies to all paths.*

Purpose: This section confirms that, to the extent possible, planning documentation shows that all ZERH Multifamily National Version 2 Checklist items (Rater, PV-Ready, and EV-Ready) will be completed and reported correctly in the appropriate tabs of the Multifamily Workbook with ZERH Addenda.

*Instructions: Any items marked as “Y” indicate that the submittal adequately meets the requirements of ZERH Multifamily Version 2 based on documentation available at the time of the PDS. However, compliance with requirements is ultimately determined by the As-Built Submittal and confirmed using photo documentation. Any items marked as “N” indicate that the submittal does not demonstrate that the measure listed meets the requirements of ZERH Multifamily Version 2. More information on each non-compliant measure is documented in the notes section below.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table C** | | | Y | N | | N/A |
| *National Rater Checklist* | | | | | | |
| 3 | The National Rater Checklist is complete, any items marked “N/A” are appropriate, no items indicate “Must Correct,” and no items conflict with data in other worksheets or planning documents. | |  |  | |  |
| 4 | Any exemptions/alternatives used to comply with the National Rater Checklist are documented with additional documentation collected where required. | |  |  | |  |
| 5 | Envelope assembly layers are fully described in appropriate workbook tabs and meet ZERH Multifamily Version 2 National Rater Checklist (either 3.1a or 3.1b).  *Note: PASS/FAIL are manually entered by user and not automatically checked. When Prescriptive path projects use the UA method, workbook must indicate dwelling unit opaque assemblies use U factors from 2021 IECC Residential Chapter.* | |  |  | |  |
| 6 | Fenestration table is complete and windows meet or exceed ZERH Multifamily Version 2 National Rater Checklist Item 3.2. | |  |  | |  |
| 7 | Construction documents provided show ducts and air-handling equipment installed in accordance with the DOE ZERH Multifamily National Rater Checklist, Item 4.1. | |  |  | |  |
| 8 | Documentation (cut sheet or directory reference) provided confirming WaterSense certified dwelling unit showerheads, bath faucets, and aerators. | |  |  | |  |
| 9 | Reported refrigerators, dishwashers, clothes washers, clothes dryers, and bathroom ventilation fans are listed in the ENERGY STAR product directory. | |  |  | |  |
| 10 | The Lighting tab in the workbook shows 100% of in-unit lamps/bulbs are LED. | |  |  | |  |
| 12 | For projects located in Climate Zones 6-8, H/ERV equipment reported in the workbook matches the model number(s) on proposed equipment documentation. Documented efficiency is confirmed based on model number and meets the requirements of DOE ZERH Multifamily Version 2 Rater Checklist Item 7.2. | |  |  | |  |
| 13 | Plans provided show electric-ready features consistent with DOE ZERH Multifamily Version 2 National Rater Checklist, Items 10.1, 10.2, and 11.1. | |  |  | |  |
| *EV-Ready Checklist* | | | | | | |
| 15 | If an exemption will be used to comply with the EV-Ready Checklist, additional documentation is collected as required. | |  |  | |  |
| 16 | Construction documents provided show compliance with all items on the EV-Ready Checklist, to the extent possible. | |  |  | |  |
| *PV-Ready Checklist* | | | | | | |
| 17 | If an exemption will be used to comply with the PV-Ready Checklist, additional documentation is collected as required. | |  |  | |  |
| 18 | Construction documents provided show compliance with all items on the PV-Ready Checklist, to the extent possible. | |  |  | |  |
|  | | | | | | |
| *Data from the Multifamily Workbook with ZERH Addenda is consistent with the ZERH Multifamily Version 2 Checklist tabs.* | | Yes: | | | No: | |
| Notes: Click or tap here to enter text. | | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | | |

**D. Verification of Prescriptive Path Performance**

*This section is required for Prescriptive path projects only.*

Purpose: This section verifies that all proposed efficiency measures (excluding items covered in section C) meet the ZERH Multifamily Version 2 Exhibit 2 requirements and are documented correctly in the Multifamily Workbook with ZERH Addenda.

*Instructions: For all items in this section, marking “Y” indicates the following:*

* *Efficiencies documented in the Multifamily Workbook with ZERH Addenda match efficiency levels required by Exhibit 2 of the Multifamily Version 2 National Program Requirements.*
* *Product documentation is provided for proposed equipment.*
* *Documented efficiency is confirmed based on model number (where applicable).*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table D** | | | Y | N | | N/A |
| 1 | Residential cooling equipment efficiency | |  |  | |  |
| 2 | Residential heating equipment efficiency | |  |  | |  |
| 3 | HVAC grading results | |  |  | |  |
| 4 | Infiltration rate | |  |  | |  |
| 5 | Mechanical ventilation equipment heat recovery (ERV/HRV) | |  |  | |  |
| 6 | Residential water heating efficiency | |  |  | |  |
|  | | | | | | |
| *Data from the Multifamily Workbook with ZERH Addenda is consistent with ZERH Multifamily Version 2 National Program Requirements Exhibit 2.* | | Yes: | | | No: | |
| Notes: Click or tap here to enter text. | | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | | |

**E. DOE ASHRAE Standard 90.1 Performance-Based Compliance Form**

*This section is required for ASHRAE path projects only.*

Purpose: This section verifies that all proposed efficiency measures (excluding items covered in section C) are documented correctly in the Multifamily Workbook with ZERH Addenda and represented accurately in the ASHRAE 90.1 Performance-Based Compliance Report. This section also verifies that all ASHRAE 90.1 modeling is done in accordance with the requirements established by the ENERGY STAR Multifamily New Construction program.

*Instructions: For all items in this section, marking “Y” indicates that for the measure in question:*

* *Efficiencies documented in the Multifamily Workbook with ZERH Addenda match efficiency levels in the Compliance Form.*
* *Product documentation is provided for proposed equipment.*
* *Documented efficiency is confirmed based on model number.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table E** | | | Y | N | | N/A |
| 1 | Residential cooling equipment efficiency | |  |  | |  |
| 2 | Residential heating equipment efficiency | |  |  | |  |
| 3 | Mechanical ventilation equipment heat recovery (ERV/HRV) | |  |  | |  |
| 4 | Residential water heating efficiency | |  |  | |  |
|  | | | | | | |
| *Data from the Multifamily Workbook with ZERH Addenda is consistent with the DOE ASHRAE Standard 90.1 Performance-Based Compliance Form.* | | Yes: | | | No: | |
| ***DOE ASHRAE Standard 90.1 Performance-Based Compliance Form meets all modeling and QA requirements established by the ENERGY STAR Multifamily New Construction program and the ENERGY STAR Multifamily Simulation Guidelines.*** | | Yes: | | | No: | |
| Notes: Click or tap here to enter text. | | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | | |

**F. DOE ASHRAE Standard 90.1 Companion Tool**

*This section is required for ASHRAE path projects only.*

Purpose: This section verifies that the submitted project meets the required efficiency levels in Exhibit 3 of the ZERH Multifamily Version 2 National Program Requirements.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table F** | | | Y | | N |
| 1 | Companion Tool has the ZERH program selected and BPFs shown match those in Exhibit 3 of the ZERH Multifamily Version 2 National Program Requirements. | |  | |  |
| 2 | Building achieves at least 20% energy cost savings or source energy savings above ASHRAE 90.1-2019. | |  | |  |
| 3 | On-site renewable energy does not contribute to meeting the performance target. | |  | |  |
|  | | | | | |
| *Data from the DOE ASHRAE Standard 90.1 Companion Tool developed for use with the ESMFNC and ZERH MF programs confirms that the submitted projects meets required efficiency levels.* | | Yes: | | No: | |
| Notes: Click or tap here to enter text. | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | |

**G. PHIUS Alternative Performance Target**

*This section is required for PHIUS Alternative projects only.*

Purpose: This section verifies that the submitted project meets the required efficiency levels in Section 3.3 of the ZERH Multifamily Version 2 National Program Requirements.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table F** | | | Y | | N |
| 1 | Building will certified as PHIUS CORE 2021 or PHIUS ZERO 2021. | |  | |  |
| 2 | Building achieves 20% less energy use than the PHIUS CORE 2021 source energy criteria, without renewables. | |  | |  |
|  | | | | | |
| *Building qualifies for the PHIUS Alternative path and meets required efficiency in the* | | Yes: | | No: | |
| Notes: Click or tap here to enter text. | | | | | |
| Reviewed by: Click or tap here to enter text. Date: Click or tap to enter a date. | | | | | |