



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

1500 Jefferson Street SE • P.O. Box 41449 • Olympia, Washington 98504
(360) 407-9280 • fax (360) 586-9088 • e-mail sbcc@des.wa.gov • www.sbcc.wa.gov

March 10, 2025

TO: Washington State Building Code Council Members and All Interested Parties

FROM: Energy Code–Residential Technical Advisory Group

SUBJECT: **2024 Washington State Energy Code, Residential TAG Report on the Integrated Draft**

The TAG has completed their review of the Integrated Draft for the 2024 Washington State Energy Code, Residential provisions (WSEC-R). The Integrated Draft was developed by reviewing the changes in the 2024 International Energy Conservation Code (IECC), determining which changes are equivalent or more stringent than the current WSEC-R, and how they fit with existing state amendment language. The resulting draft is attached.

In addition to the draft, the TAG voted to move forward the 2024 IECC as an option. The intent is that proponents would submit petitions to modify both the Integrated Draft and the 2024 IECC and to make changes to the 2024 IECC to maintain the stringency found in the Integrated Draft but better correlate with the model code.

This report consists of three parts:

- The significant changes made to the IECC for the 2024 edition
- Existing amendments in the 2021 WSEC that have been modified or eliminated by changes in the 2024 IECC
- Changes made by the TAG within the Integrated Draft to better consolidate provisions from both codes

As the TAG reviewed the changes incorporated from the 2024 IECC, they identified those changes deemed significant or that represented a positive or negative cost impact. One significant change from the IECC, the creation of a new climate zone in western Washington, was rejected by the TAG based on statutory language from RCW 19.27A. Other changes are highlighted below.

| Significant Changes incorporated from the 2024 International Energy Conservation Code | |
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| Section R105.2.2 | This section was introduced into the 2024 IECC and requires that if a jurisdiction requires a rooftop solar ready zone, the plans reflect details for future siting, including where any associated conduit and plumbing is routed. |
| Section R107.4.1 | The 2024 IECC established a procedure for local jurisdictions to utilize a third-party inspection service. |
| Definition of Substantial Improvement | The 2024 IECC includes a definition for Substantial Improvement consistent with that in the <i>International Existing Building Code</i> . Chapter 5 of the 2024 IECC contains additional efficiency credit requirements for buildings undergoing substantial improvements, but that section was not integrated into the 2024 WSEC Draft. The TAG deemed this to be a substantial change. |

| Significant Changes incorporated from the 2024 International Energy Conservation Code | |
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| Table R402.1.2 / R402.1.3 | The window U-factor went from 0.30 to 0.28, the ceiling U-factor went from 0.026 to 0.024, and the above-grade wall U-factor went from 0.056 to 0.045. Equivalent changes were made to the window and ceiling R-values. The above-grade wall U-factor now matches the R-value from the 2021 code. There will be associated cost increases for the increase in efficiency. Slab on grade was divided into heated and unheated values, and a new section was provided for insulation entirely above the roof deck. |
| Section R402.1.5 | The 2024 IECC introduced a new simplified component performance calculation. The TAG accepted this as a replacement for the WSEC series of equations. |
| Section R402.5.1.2 | The 2024 IECC provides criteria for unit sampling for air leakage testing in multifamily buildings with 8 or more units. This could be a cost savings. |
| Section R403.3.1 | The 2024 IECC adds a new section that allows alternate sizing standards for ducts serving more than two dwelling units. |
| Section R403.3.6 / R403.3.7/R403.3.8 | The Duct system testing section was revised and rearranged. The air leakage rates are provided in a table and are specific to where the duct is located, the size of the conditioned space, and when the testing is performed, allowing some additional flexibility. Criteria for sampling was also added. |
| Table R403.6.1 | The fan efficacy requirements were expanded, but the only significant change is the addition of a new efficacy factor for “Other exhaust fans” over 200 cfm. The table also added the applicable test procedure for each system type. |
| Section R403.6.3 | The 2024 IECC adds a new section allowing unit sampling for mechanical ventilation systems. |
| Section R403.6.4 | A new control requirement was added for intermittent exhaust systems in bathrooms, with four optional control strategies. The controls are not required if the bathroom is part of the whole house exhaust system. |
| Section R403.9 | A new general section was added for mechanical systems outside the building thermal envelope. R409.9.1 requires that all heating outside the building be radiant systems with occupant sensor or timer controls. R409.9.2 is mostly existing language for snow and ice melt systems. R409.9.3 Is a new section regulating roof and gutter deicing controls. R403.9.4 is a new section regulating freeze protection systems. |
| Section R404 | The 2024 IECC lighting section has been extensively revised. Rather than just referencing the commercial requirements for exterior lighting requirements, those requirements were reprinted in the code. New requirements were added for controls that now specify a manual dimmer (as previously required) or a manual control with an automatic shutoff that turns off lighting within 20 minutes of occupants leaving the room. |
| Section R404.4 | A new section was added to the 2024 IECC for renewable energy certificate documentation. |
| Section R503 | The Alterations section was revised to provide more detail and better organization. |

Significant Changes incorporated from the 2024 International Energy Conservation Code

Section R503.5.1.1, the building thermal envelope section, and relevant subsections was reorganized and more detail added, including a new air barrier section under R4503.1.1.5.

Section R503.5.1.2 and relevant subsections under heating and cooling was similarly revised with more detail added for duct systems and HVAC controls.

Existing WSEC Amendments Impacted or Modified by New 2024 IECC Language

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| Section R105.2.1.1 / Section R107.2.6 | The 2024 IECC included a revision of Section R107 for inspections. Included in that revision was a requirement for insulation and fenestration rough-in inspection. The TAG deemed the new IECC language should be retained and replace the existing WSEC language on wall insulation inspection. |
| Definition of Continuous Pilot Light | This is an item the TAG did not discuss. The 2024 IECC added a new definition of “Continuous Pilot Light.” The WSEC has an existing definition for “Pilot Light, Continuously Burning” that contains the same language but expands upon it slightly to improve its clarity. It could be confusing to have two definitions in two different places that are essentially the same. This would also apply to the new definitions for “Intermittent Ignition” and “Interrupted Ignition”, which appear in the WSEC as “Pilot Light, Intermittent” and “Pilot Light, Interrupted.” This could be cleared up through the petition process. |
| Section R402.1.5 | The 2024 IECC introduced a new simplified component performance calculation. The TAG accepted this as a replacement for the WSEC series of equations. |
| Section R403.7.2 | The 2024 IECC included a section with similar requirements to the WSEC amendment. The IECC language was adopted into the WSEC language but remains in the location it was moved to in the 2021 WSEC. A new pointer was added to the section prohibiting continuous pilots. |
| Section R403.5.3 | The 2024 IECC included a new table for the insulation of hot water pipe. However, the TAG felt the existing language was simpler to use and easier to enforce. |
| Section R403.7.1 | The 2024 IECC added a new section that was nearly identical to the previous WSEC prohibition on electric resistance heating that was removed when the heat pump language was added. It is now back in the code with the IECC language. |
| R403.7.2 | The IECC added a section very similar to the WSEC requirement for gas fireplace efficiency. That language was integrated with the WSEC requirements, and a pointer was added for the prohibition of continuous pilots. |
| Appendix RF | The 2024 IECC added a new appendix with common assembly U-factors for above-grade walls, basement and crawlspace walls, and slabs-on-grade. The TAG voted to use Appendix RF in place of the existing Appendix CA for use in the residential provisions. |

| Changes Made to New 2024 International Energy Conservation Code Language | |
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| Section R103 | The IECC included a new section on creation of the enforcement agency. This section was not adopted in the 2024 WSEC Integrated Draft. This change was also made to the Commercial provisions of the WSEC. It was felt that it was inappropriate to dictate how the local authority is set up to enforce the code. |
| Section R105.2 | Under the Information on construction documents section, the TAG recommends inclusion of the selected efficiency credits in Section R406. |
| Section R107.2.6 | The language under R107.2.6, Insulation and fenestration rough- in inspection was modified to specify that inspection be performed before the application of interior or exterior finish is applied. The addition of the phrase “or exterior” would include the inspection of any required continuous insulation as well as interior insulation. |
| Definition of Roof Replacement | The TAG modified the definition to include removing materials down to the insulation in addition to down to the deck. |
| Definition of Substantial Improvement | The 2024 IECC includes a definition for Substantial Improvement consistent with that in the <i>International Existing Building Code</i> . |
| Definition of Work Area | The TAG opted to not adopt this new IECC definition based on the <i>International Existing Building Code</i> as it is not used within the integrated code. |
| Section R402.1 Compliance paths | The 2024 IECC only takes into consideration a U-factor or component performance compliance methods. The TAG added a path for R-value compliance. |
| Table R402.1.2 / R402.1.3 | The TAG voted to move forward with the more stringent U-factors. The window U-factor went from 0.30 to 0.28 and the above-grade wall U-factor went from 0.056 to 0.045. Equivalent changes were made to the window R-values. The above-grade wall U-factor now matches the R-value from the 2021 code. The ceiling U-factor remains at the 2021 U-factor of 0.024. |
| Section R402.2.7 | The floor insulation installation requirements were reorganized and revised in the 2024 IECC. The TAG voted to add a specification that the perimeter insulation in the Item 5 options needs to comply with the wall insulation requirements of the table. |
| Table R402.5.1.1 | <p>The floor installation row was revised to eliminate the last sentence of the air barrier criteria. The TAG felt the language was too vague to be understood.</p> <p>Under the common walls row, the TAG revised the Insulation Detail column to change the word “recognized” to “included,” feeling this was more easily understood.</p> <p>The defining of “IC” at the bottom of the table was removed. This no longer appears in the IECC and was mistakenly left in the integrated draft.</p> <p>Footnote b was modified to be applied to the Ceilings/Attic detail and removed from Rim Joist. It was not felt to be applicable to rim joists.</p> |

| Changes Made to New 2024 International Energy Conservation Code Language | |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section R403.7.2 | The 2024 IECC included a section with similar requirements to the WSEC amendment. The IECC language was adopted into the WSEC language but remains in the location it was moved to in the 2021 WSEC. A new pointer was added to the section prohibiting continuous pilots. |
| Section R403.3.3 | The 2024 IECC included an item in the requirements for duct systems in conditioned space that could be interpreted to allow plenums to be used as ducts. The TAG voted to remove this item given the prohibition in Section R403.3.9. Note that this section (R403.3.9) is also present in the IECC (R403.3.7). |
| Section R403.3.6 | The TAG voted to remove some redundant restating of the allowable duct leakage in Item 3. |
| R403.7.2 | The IECC added a section very similar to the WSEC requirement for gas fireplace efficiency. That language was integrated with the WSEC requirements, and a pointer was added for the prohibition of continuous pilots. |
| R403.9.3 | The 2024 IECC includes a new section for roof and gutter deicing controls. The TAG took issue with one of the specifications that required the system to turn off between sunset and sunrise and elected to remove that requirement. |
| Table R405.4.2(1) | In the simulated building performance specifications table, the TAG opted to retain the 2021 language of “as proposed” for the proposed design for the air leakage rate. The 2024 IECC had changed it to the measured air leakage rate, but the TAG felt that was illogical as you can’t test a proposed design. For the thermal distribution system, it was felt the new requirements constituted a rollback of efficiency and the 2021 language was retained. The associated footnotes l and m were also removed. |

Attachment: [2024 WSEC Residential Integrated Draft](#)