



What's in the Residential Draft of the 2024 IECC?

Background

The International Code Council's 2024 International Energy Conservation Code (IECC) provisions are in the final stages of development.

- The second public comment period ended June 30, 2023.
- A [monograph of public comments](#) was posted to the ICC website July 2023.
- The [Committee Action Report](#) on these comments was released September 18, 2023.

According to the ICC, the Consensus Committee concluded the balloting process for approved changes to Public Comment Draft #2 on November 2, 2023. The final result was approval of all balloted code changes by 2/3 vote. All approved items from the Committee Action Report will be incorporated into the Final Draft of the 2024 IECC and Chapter 11 of the International Residential Code (IRC) after the balloting process is finished. The submittal period for appeals is currently underway. The deadline for submitting appeals has been [extended](#) to January 2, 2024. For more information, please visit the [Residential Consensus Committee webpage](#) and [NEEP's 2024 IECC webpage](#).

NEEP published an [initial resource summarizing provisions of the first draft](#) of the 2024 IECC in 2022. This resource has been amended to reflect changes in the second draft.

Pacific Northwest National Laboratories (PNNL) [estimates](#) the site energy savings of the first draft of the 2024 Residential IECC is 6.66 percent compared to the 2021 IECC.

Key Takeaways

Changes and updates in this draft code significantly impact energy use. A full list of updates may be found in the draft [here](#).

The outlined proposals refer to new or updated provisions within the 2024 IECC draft. There are entirely new sections that were not included in the previous code. Those delineated in orange refer to changes to the first draft of the IECC in response to public comments.

- **Building Thermal Envelope (R402)**
 - **Table R402.1.2 Maximum Assembly U-Factors and Fenestration Requirements:** Updated window and skylight efficiencies, decreased ceiling insulation requirements, and updated guidance for unheated and heated slabs. **Draft 2 added information for insulation entirely above roof deck and updated skylight Solar Heat Gain Coefficient (SHGC) values in all climate zones**
 - **Table R402.1.3 Insulation Minimum R-Values and Fenestration Requirements by Component:** Updated window and skylight efficiencies, decreased ceiling insulation requirements, and added option to use continuous insulation for framed floors. **Draft 2 added information for insulation entirely above roof deck and updated skylight SHGC values in all climate Zones**
 - **NEW R402.2.3 Attic Knee Walls:** Added new specific insulation requirements to address attic knee walls, which historically have been difficult to air seal.



- **Table R402.5.1.1 Air Barrier, Air Sealing, and Insulation Installation:** Updated insulation installation criteria for several areas, including windows, fireplaces, and common/double walls **separating attached single-family dwellings or townhouses.**
- **R402.5.1.3 Prescriptive Air Leakage Rate:** Improved air tightness to 2.5 ACH50 for cold climates (Climate Zone 6-8). **Draft 2 clarifies the requirements for each compliance pathway: prescriptive, simulated building, and energy rating index.**
- **Systems (R403)**
 - **NEW Table R403.3.8 Maximum Total Duct System Leakage:** Updated total duct leakage requirements, clarifying metric used for different sized floor areas and alters the duct leakage rate depending on whether the **space conditioning equipment** is installed or not and whether the ducts are in conditioned space.
 - **NEW R403.5.5 Demand Responsive Water Heating:** New requirement for demand responsive controls for electric storage water heaters.
 - **R403.6.1 Heat or Energy Recovery Ventilation:** Added Climate Zone 6 to areas where energy- or heat recovery ventilators are required for whole home ventilation.
 - **NEW R403.13 Gas Fireplaces:** Removes option for continuous pilot light
- **Electrical Power, Lighting, and Renewable Energy Systems (R404)**
 - **R404.1 Lighting Equipment:** Added new requirements for exterior lighting controls and power allowance **which was updated in the second draft.**
 - **NEW R404.4 Renewable Energy Certificate Documentation:** Documentation of an installed renewable energy system is required if the system is being used for code compliance.
 - **NEW R404.5 Electric Readiness:** Installation of new electrical **branch circuits** are required near cooking products, household clothes dryers, and water heaters that are currently using **fuel gas or liquid fuel** for future electric appliance installation.
 - **NEW R404.6 Renewable Energy Infrastructure:** New requirement for a solar ready zone.
 - **NEW R404.7 Electric Vehicle Power Transfer Infrastructure:** New requirement for an electric vehicle (EV)-capable, EV-ready, or supply equipment (EVSE) installed space per home. **Added weakening exceptions in Draft 2 that create situations where EV installation is not required.**
- **Simulated Building Performance (R405)**
 - **Table R405.2 Requirements for Simulated Building Performance:** Updated requirements for the Simulated Building Performance path to code compliance.
 - **Table R405.4.2(1) Specifications for the Standard Reference and Proposed Designs.** Updated specifications for the standard reference and proposed design model.
- **Energy Rating Index Compliance Alternative (R406)**
 - **Table R406.2 Requirements for Energy Rating Index:** Updated requirements for the Energy Rating Index (ERI) path to code compliance.
 - **Table R406.5 Maximum Energy Rating Index:** Adjusted the maximum ERI without on-site power production (OPP), lowering it by one point compared to 2021 IECC, and added a new lower ERI requirement **which depends on climate zone** if OPP is used.
- **Additional Efficiency Requirements (R408)**
 - This section has been significantly altered to reflect a new point-based credit system of required additional efficiency measures, providing building and design professionals more choice and flexibility in their options for compliance. The potential efficiency measures include improved insulation, window,



HVAC, water heating, air sealing, ventilation, and ductwork options. **The number of points allocated for each action changed in Draft 2.**

- **NEW Additional Efficiency Package Options for Existing Buildings (R502.2.5 and R503.1.5)**
- Additions and alterations of existing buildings must now comply with a selection of additional efficiency credits in Section R408.2 of the builders choosing, providing more flexibility in the design process. **Draft 2 removed Section R506 and relocated efficiency requirements to R502.2.5 and R503.1.5.**

Appendices

- **Appendix RC: Zero Net Energy Residential Buildings Provisions:** Reduced the ERI from the 2021 IECC to a 42 without including renewable energy and to a 0 using OPP. It also added requirements for Climate Zone 0.
- **NEW Appendix RD: Electric Energy Storage Provisions:** Added new requirements for energy storage system (ESS) readiness for new construction where solar-ready measures or onsite solar PV are also required
- **NEW Appendix RE: All-Electric Residential Buildings:** This provision does not permit combustion equipment in buildings, requiring them to be all-electric.
- **NEW Appendix RF: Alternative Building Thermal Envelope Insulation R-Value Options:** This provision requires improved insulation for every part of the building's thermal envelope.
- **NEW Appendix RG: 2024 IECC Stretch Code:** Improves performance paths to compliance for sections R405 and R406 with language intended to replace those sections with stricter efficiency requirements. The new R405 requirements in Appendix RG101.1 require an annual energy cost less than or equal to 70 percent of the standard reference design for fossil fuel space heating, water heating or both, or 75 percent energy cost compared to the standard reference for other dwelling units. The new R406 requirements in Appendix RG101.2 require a lower Energy Rating Index. It also requires additional efficiency credit requirements of 20 credits or more in Table R408.2, with an additional 5 credits for dwelling units of more than 5,000 square feet of living space.
- **NEW Appendix RH: Operational Carbon and Energy Reporting:** Requires labeling of CO₂e Index for buildings following the ERI Path in Section R406 in accordance with ANSI/RESNET/ICC 301 in a certificate with additional rated energy features of the home, as well as a maximum CO₂e Index limit that varies if it is an all-electric building or mixed fuel building. For a mixed fuel building, the authority having jurisdiction can establish the maximum limit based on the CO₂ emissions data specific to that jurisdiction.
- **NEW Appendix RI: On-Site Renewable Energy:** Requires an on-site renewable energy system with a minimum capacity of 2 kW for single family buildings and town houses, or 0.75 Watt per square foot multiplied by the gross conditioned floor area for commercial occupancies. It also provides additional guidance for the simulated building performance path in Section R405 and requires the ERI in Section R406 to be the number including Onsite Power Production.

Disclaimer: The information presented in this document is subject to change based on public comments and further committee updates. A final draft of the 2024 IECC is expected to be published mid- to late 2023.

Updated 11/29/2023