ERI Combined Proposal

Updated 7/7/25

Commented [KR1]: Areas for TAG discussion:
- Envelope tradeoff backstop
- Renewables contribution limits /ERI target implications
- ERI targets (methodology, table structure)

R401.2 Compliance. Projects shall comply with one of the following:

1. **Prescriptive Compliance Option:** Sections R401 through R404. In addition, *dwelling units* and *sleeping units* in a *residential building* shall comply with Section R406.
2. **Simulated Building Performance Option:** Section R405.
3. **Passive House Option:** Section R407.
4. **Energy Rating Index Option:** Section R408

SECTION R202

GENERAL DEFINITIONS

Commented [KR2]: Note: All the remaining proposed code text is new. Instead of underlining everything, strikethrough / underline format is provided with respect to the 2024 IECC language so it is clear what the proposed changes for WA are. [Exception: section numbering relabeling this to section from R406 to R408.]

ENERGY RATING INDEX (ERI). A numerical integer value that represents the relative energy performance of an *ERI rated design* or constructed *dwelling unit* as compared with the energy performance of the *ERI Reference Design*, where an ERI value of 100 represents the energy performance of the *ERI Reference Design* and an ERI value of 0 represents an *ERI rated design* or constructed *dwelling unit* with zero net energy performance.

ERI REFERENCE DESIGN. A version of the *ERI rated design* that meets the minimum requirements of the 2006 *International Energy Conservation Code*.

ERI RATED DESIGN. A description of the proposed *dwelling unit* used to determine the *energy rating index*.

Commented [KR3]: Optional definition name change. This term is used 10 times.

SECTION R408

ENERGY RATING INDEX COMPLIANCE ~~ALTERNATIVE~~

Commented [KR4]: Optional shortening of section name (align with R401.2)

R408.1 Scope. This section establishes criteria for compliance using an *Energy Rating Index* (ERI) analysis. Such analysis shall be limited to *dwelling units*. Spaces other than *dwelling units* in Group R-2, R-3 or R-4 buildings shall comply with Sections R402 through R404.

R408.2 ERI compliance. Compliance based on the *ERI* requires that the *ERI rated design* and as-built *dwelling unit* meet all of the following:

1. The requirements of the sections indicated within **Table R408.2**.
2. Maximum *ERI* values indicated in **Table R408.5**.

TABLE R408.2

REQUIREMENTS FOR ENERGY RATING INDEX

SECTION[a]	TITLE
General	
R401.3	Certificate
Building thermal envelope	
R402.1.1	Vapor retarder
R402.~~1.6~~4.5	~~Rooms containing fuel-burning appliances~~Combustion air openings

R402.2.43	Eave baffle
R402.2.54.1	Access hatches and door insulation installation and retention
R402.2.109	Slab-on-grade floors
R402.2.11	Crawl space walls
R402.5	Air leakage
R402.5.1.1	Installation
R402.5.1.2	Air leakage testing
R402.5.1.3	Maximum air leakage rate
R402.5.24.6	Fireplaces
R402.5.3	Fenestration air leakage
R402.5.4	Recessed lighting
R402.5.5	Air-sealed electrical and communication outlet boxes
R408.3	Building thermal envelope
Mechanical	
R403.1	Controls
R403.2	Hot water boiler temperature reset
R403.3	Duct systems
R403.4	Mechanical system piping insulation
R403.5	Service hot water systems
R403.6	Mechanical ventilation
R403.7, except **Section R403.7.1**	Equipment sizing and efficiency rating
R403.8	Systems serving multiple dwelling units
R403.9.2	Snow melt and ice melt system controls
R403.10	Energy consumption of pools and spas
R403.11	Portable spas
R403.12	Residential pools and permanent residential spas
R403.13	Gas fireplaces
Electrical power and lighting systems	
R404.1	Lighting equipment
R404.2	Interior lighting controls

a. Reference to a code section includes all of the relative subsections except as indicated in the table.

R408.3 Building thermal envelope. The proposed total *building thermal envelope* thermal conductance (TC) shall be less than or equal to the required total *building thermal envelope* TC using the prescriptive *U*-factors and *F*-factors from Table R402.1.2 multiplied by 1.101.08 in Climate Zones 0, 1 and 2, and by 1.15 in Climates Zones 3 through 8, in accordance with Equation 4-2 and Section R402.1.5. The area-weighted maximum fenestration SHGC permitted in Climate Zones 0 through 3 shall be 0.30.

R408.4 Energy Rating Index. The *Energy Rating Index* (ERI) shall be determined in accordance with ANSI/RESNET/ICC 301. The mechanical *ventilation* rates used for the purpose of determining the *ERI* shall not be construed to establish minimum *ventilation* requirements for compliance with this code. Energy used to recharge or refuel a vehicle used for transportation on roads that are not on the *building* site shall not be included in the *ERI reference design* or the *ERI rated design*.

Commented [KR5]: Does not appear in 2024 WSEC-R ID. Also did not appear in 2021 WSEC, so appears to be a deliberate omission.

Commented [KR6]: All subsections of R402.5 appear in this table, so this shortens the table. (This matches what was done for the corresponding R405 table in the 2024 WSEC-R ID.)

Commented [KR7]: [NEEA PROPOSED ALTERNATIVE}
This is removed, and R402.1.1 above is widened to R402.1 General, which captures use of any of the R, U, and TC envelope options.

Commented [KR8]: This is R403.7.2 in the 2024 WSEC-R ID, so it's covered under the R403.7 row.

Commented [KR9]: [NEEA PROPOSAL ALTERNATIVE]
This is removed to for consistency with WSEC Section R405, which also removes the analogous allowance for a weaker envelope (including Equation 4-2).

Commented [KR10]: Suggested by workgroup members. Recommend investigating what flexibility different values allow, as well as feasibility for the different options to be easily verified via ERI software.

Commented [KR11]: Equation 4-2, which is found in 2024 IECC R405, is not included in the 2024 WSEC ID. It is simply the expression in text here, so I have proposed deleting it.

R408.5 ERI-based compliance. Compliance based on an *ERI* analysis requires that the *ERI rated design* and each confirmed as-built *dwelling unit* be shown to have an *ERI* less than or equal to the appropriate value indicated in Table R408.5 where compared to the *ERI reference design* ~~as follows:~~. Where on-site renewables are installed, not greater than the production of the renewable energy system, or 5,400 kWh or 18.4 MBtu/hr of on-site renewable power, whichever is less, may be used when meeting the maximum allowed *ERI* in Table R408.5.

Commented [KR12]: Intended to align with the cap on R406 renewables credits.

~~1. Where on-site renewables are not installed, the values under ENERGY RATING INDEX NOT INCLUDING OPP apply.~~

~~2. Where on-site renewables are installed, the values under ENERGY RATING INDEX WITH OPP apply.~~

Exception~~s~~:

~~1.Where the *ERI* analysis excludes on-site power production (OPP), the values under ENERGY RATING INDEX NOT INCLUDING OPP shall be permitted to be applied.~~

~~2.~~ For buildings with 20 or more *dwelling units*, where *approved* by the *code official*, compliance with Table R408.5 shall be permitted using the Average Dwelling Unit *Energy Rating Index*, as calculated in accordance with ANSI/RESNET/ICC 301.

Commented [KR13]: Topic for TAG discussion. Workgroup members to Investigate further.

TABLE R408.5
MAXIMUM ENERGY RATING INDEX

~~CLIMATE ZONE~~	~~ENERGY RATING INDEX NOT INCLUDING OPP~~	~~ENERGY RATING INDEX NOT INCLUDING OPP~~
~~0 and 1~~	~~51~~	~~35~~
~~2~~	~~51~~	~~34~~
~~3~~	~~50~~	~~33~~
~~4~~	~~53~~	~~40~~
~~5~~	~~54~~	~~43~~
~~6~~	~~53~~	~~43~~
~~7~~	~~52~~	~~46~~
~~8~~	~~52~~	~~46~~

Option 1

Heating System Type, per Table R406.2	Home Type, per Section R406.3			
	Small dwelling unit	Medium dwelling unit	Large dwelling unit	Group R-2 occupancies
1	54	42	39	54
2	57	47	43	54
3	55	44	41	53
4	64	53	47	59
5	58	50	48	54

Option 2

CLIMATE ZONE	ENERGY RATING INDEX
4	47
5	46

R408.6 Verification by approved agency. Verification of compliance with Section R408 as outlined in Sections R408.5 and R408.7 shall be completed by an *approved* third party. Verification of compliance with Section R408.2 shall be completed by the authority having jurisdiction or an *approved* third-party inspection agency in accordance with Section R107.4.

R408.7 Documentation. Documentation of the software used to determine the *ERI* and the parameters for the *ERI reference design* shall be in accordance with Sections R408.7.1 through R408.7.4.

R408.7.1 Compliance software tools. Software tools used for determining *ERI* shall be *approved* software rating tools as defined by ANSI/RESNET/ICC 301. Software vendors shall publish, on a publicly available website, documentation that the software tool has been validated using the Class II, Tier 1 test procedure in ANSI/ASHRAE 140.

R408.7.2 Compliance report. Compliance software tools shall generate a report that documents that the *ERI* of the *ERI rated design* and as-built *dwelling unit* complies with Sections R408.2 through R408.5. Compliance documentation shall be created for the proposed design and shall be submitted with the application for the building permit. Confirmed compliance documents of the as-built *dwelling unit* shall be created and submitted to the *code official* for review before a certificate of occupancy is issued. Compliance reports shall include information in accordance with Sections R408.7.2.1 and R408.7.2.2.

R408.7.2.1 Proposed compliance report for permit application. Compliance reports submitted with the application for a building permit shall include the following:

1. Building street address, or other *building site* identification.
2. Declare *ERI* on title page and building plans.
3. The name of the individual performing the analysis and generating the compliance report.
4. The name and version of the compliance software tool.
5. Documentation of all inputs entered into the software used to produce the results for the *ERI reference design* and the *ERI rated design*.
6. A certificate indicating that the proposed design has an *ERI* less than or equal to the appropriate score indicated in Table R408.5 when compared to the *ERI reference design*. The certificate shall document the building component energy specifications that are included in the calculation, including: component level insulation *R-values* or *U-factors*; assumed *duct system* and *building thermal envelope* air leakage testing results; and the type and rated efficiencies of proposed heating, cooling, mechanical *ventilation* and service water-heating equipment to be installed. Where *on-site renewable energy* systems will be installed, the certificate shall report the type and production size of the proposed system.
7. When a site-specific report is not generated, the proposed design shall be based on the worst-case orientation and configuration of the rated *dwelling unit*.

R408.7.2.2 Confirmed compliance report for a certificate of occupancy. A confirmed compliance report submitted for obtaining the certificate of occupancy shall be made site and address specific and include the following:

1. Building street address or other *building site* identification.

2. Declaration of *ERI* on title page and on building plans.
3. The name of the individual performing the analysis and generating the report.
4. The name and version of the compliance software tool.
5. Documentation of all inputs entered into the software used to produce the results for the *ERI reference design* and the as-built *dwelling unit*.
6. A final confirmed certificate indicating that the as-built *building* complies with Sections R408.2, R408.4 and R408.5. The certificate shall report the energy features that were confirmed to be in the *building*, including: component-level insulation *R-values* or *U-factors*; results from any required duct system and *building thermal envelope* air leakage testing; and the type and rated efficiencies of the heating, cooling, mechanical *ventilation*, and service water-heating equipment installed. Where *on-site renewable energy* systems have been installed on or in the *building*, the certificate shall report the type and production size of the installed system.

R408.7.3 Renewable energy certificate (REC) documentation. Where renewable energy power production is included in the calculation of an *ERI*, documentation shall comply with Section R404.4.

Commented [KR14]: This compliance path does not allow off-site renewables to contribute, and the workgroup agrees only on-site renewables should count.

R408.7.4 Additional documentation. The *code official* shall be permitted to require the following documents:

1. Documentation of the building component characteristics of the *ERI reference design*.
2. A certification signed by the builder providing the building component characteristics of the *ERI rated design*.
3. Documentation of the actual values used in the software calculations for the *ERI rated design*.

R408.7.5 Specific approval. Performance analysis tools meeting the applicable subsections of Section R408 shall be *approved*. Documentation demonstrating the approval of performance analysis tools in accordance with Section R408.7.1 shall be provided.

R408.7.6 Input values. Where calculations require input values not specified by Sections R402, R403, R404 and R405, those input values shall be taken from ANSI/RESNET/ICC 301.