

Modify R405.2.3 (2166)

IECC: R405.2

Proponents: Gary Heikkinen, Gary W Heikkinen Energy Consulting, American Gas Association

2024 International Energy Conservation Code [RE Project]

R405.2 Simulated building performance compliance. Compliance based on *simulated building performance* requires that a *building* comply with the following:

1. The requirements of the sections indicated within Table R405.2.
2. 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 1.08 in Climate Zones 0, 1 and 2, and 1.15 in Climate 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.

For Climate Zones 0–2: $TC_{Proposed\ design} \leq 1.08 \times TC_{Prescriptive\ reference\ design}$

Equation 4-2

For Climate Zones 3–8: $TC_{Proposed\ design} \leq 1.15 \times TC_{Prescriptive\ reference\ design}$

3. For each *dwelling unit* with one or more fuel burning appliances for space heating, water heating, or both, the annual *energy cost* of the *dwelling unit* shall be less than or equal to 80 percent of the annual *energy cost* of the *standard reference design*. For all other *dwelling units*, the annual *energy cost* of the proposed design shall be less than or equal to 85 percent of the annual *energy cost* of the *standard reference design*. For each dwelling unit with greater than 5,000 square feet (465 m²) of *living space* located above grade plane, the annual *energy cost* of the *dwelling unit* shall be reduced by an additional 5 percent of annual *energy cost* of the *standard reference design*. Energy prices shall be taken from an *approved* source, such as the US Energy Information Administration's State Energy Data System prices and expenditures reports. Code officials shall be permitted to require time-of-use pricing in *energy cost* calculations.

Exceptions:

1. The energy use based on source energy expressed in Btu or Btu per square foot of *conditioned floor area* shall be permitted to be substituted for the *energy cost*. The source energy multiplier for electricity shall be 2.51. The source energy multipliers shall be 1.09 for natural gas, 1.15 for propane, 1.19 for fuel oil, and 1.30 for imported liquified natural gas.
2. The energy use based on site energy expressed in Btu or Btu per square foot of conditioned floor area shall be permitted to be substituted for the energy cost.

Reason: This proposal will bring this section into compliance with R101.3 Intent of the code which states that the code "is not intended to eliminate any fuel type." The ICC Board Commentary goes on to state that the code "remain neutral to fuel source and do not promote or penalize specific types of equipment or fuel sources." The struck language from the 2024 code clearly violates this intent.