

RED1-43-22 - Modification

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2024 International Energy Conservation Code [RE Project]

Revise as follows:

R405.2

- ~~For buildings without a fuel-burning appliance for space heating or water heating, the annual energy cost of the proposed design that is less than or equal to 85 percent of the annual energy cost of the standard reference design.~~ For buildings with a one or more fuel burning appliances for space heating, ~~or~~ water heating, or both, the annual energy cost of the proposed design ~~that is~~ shall be less than or equal to 80 percent of the annual energy cost of the standard reference design. For all other buildings, 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 purposes of R405.2(3), decorative appliances and heat pumps with supplemental fuel-burning heat shall not be considered fuel-burning appliances. For dwelling units with greater than 5,000 square feet (465 m²) of living space floor area located above grade plane, the annual energy cost of the proposed design shall be reduced by an additional 5 percent of annual energy cost of the standard reference design. Energy prices shall be taken from a source approved by the code official, such as the Department of Energy, 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:

- 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 multipliers for all energy sources shall be obtained from ASHRAE Standard 105 (Tables K2, K4, or K8) or from another data source approved by the *code official*.
- 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 for an all-electric building with on-site renewable energy installed.

revised portion without legislative edits:

- For buildings with one or more fuel burning appliances for space heating, water heating, or both, the annual energy cost of the proposed design shall be less than or equal to 80 percent of the annual energy cost of the standard reference design. For all other buildings, 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 purposes of R405.2(3), decorative appliances and heat pumps with supplemental fuel-burning heat shall not be considered fuel-burning appliances.

alternative third sentence:

For purposes of R405.2(3), the following shall not be considered fuel-burning appliances:

1. Decorative appliances.
2. Heat pumps with supplemental fuel-burning heat.

Reason:

This proposal is an editorial clarification to the first two sentences of R405.2(3). The proposed changes are needed for the following reasons:

First, the current Public Comment Draft #1 language creates a nonsensical situation where if one appliance is fuel burning and one is not, both sentences and both conditions apply: 85% and 80%. For example, a home with a heat pump air conditioner and a gas water heater is without a fuel burning appliance for space heating and with a fuel burning appliance for water heating. So both sentences and both conditions would apply: 85% and 80%. For the provision to make sense, it must be clear that, to qualify for 85%, no fuel burning appliances can be present for space heating and no fuel burning appliances can be present for water heating.

Second, the two sentences do not make grammatical sense. ("For buildings ... , the annual energy cost of the proposed design that is less than or equal to XX percent of the annual energy cost of the standard reference design.") This proposal replaces "that is" with "shall be." With this change, the first two sentences make grammatical sense and mirror the later sentence which reads: "For dwelling units ... , the annual energy cost of the proposed design shall be reduced by ...".

Third, R405.2(3) does not currently address decorative fireplaces or heat pumps with supplemental fuel-burning heat. This modification clarifies that neither are to be considered fuel-burning appliances for purposes of determining which requirement, 80% or 85%, applies under R405.2(3).

I believe another proposal has or will address "buildings" versus "dwelling units" in this code section.

Bibliography:

International Residential Code

DECORATIVE APPLIANCE, VENTED. A vented appliance wherein the primary function lies in the aesthetic effect of the flames.

"Decorative fireplaces" is used one time, but not defined.

Cost Impact:

The code change proposal will neither increase nor decrease the cost of construction. It is an editorial clarification.