RE147-19

IECC: R404.2 (IRC N1104.2) (New), R404.2.1 (IRC N1104.2.1) (New), R404.2.2 (IRC N1104.2.2) (New), R404.2.3 (IRC N1104.2.3) (New)

Proposed Change as Submitted

Proponents: Lauren Urbanek, representing Natural Resources Defense Council (lurbanek@nrdc.org)

2018 International Energy Conservation Code

Add new text as follows:

R404.2 (IRC N1104.2) Electric readiness (Mandatory) Systems using gas or propane water heaters, dryers, or conventional cooking equipment to serve individual dwelling units shall comply with the requirements of Sections R404.2.1 and R404.2.2. All water heating systems shall comply with Section R404.2.3.

R404.2.1 (IRC N1104.2.1) Receptacle. A dedicated 125-volt, 20-amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, shall be provided within 3 feet from each gas or propane water heater, dryer, and conventional cooking equipment, accessible with no obstructions.

R404.2.2 (IRC N1104.2.2) Electrification-ready circuits. Both ends of the unused conductors shall be labeled with the word "SPARE" and be electrically isolated. A single pole circuit breaker space shall be reserved in the electrical panel adjacent to each circuit breaker for the branch circuit and labeled with the words "FUTURE 240V USE."

R404.2.3 (IRC N1104.2.3) Water heater space. An indoor space that is at least 3 feet by 3 feet by 7 feet high shall be available within 3 feet of the water heater.

Exception: The water heater space requirement does not need to be met where a heat pump water heater is installed.

Reason: This proposal enhances customer choice by making it easy for homeowners to choose either electric or gas appliances and water heating equipment. By ensuring that a home built with gas or propane can easily accommodate future electric appliances and equipment, this proposal protects homeowners from future costs, should natural gas become less affordable or even unavailable over the life of the building.
As the electric grid becomes cleaner, and high-efficiency electric heat pump technology increasingly offers utility bill and pollution reduction benefits over gas, more customers may want to transition from natural gas to electric space and water heating. Federal, state, and local environmental and public health policies may also encourage, or even require the transition in some areas over the life of the building. Electric-ready requirements will protect customers from potential high retrofit costs.

Cost Impact: The code change proposal will increase the cost of construction
The cost of meeting these electric-ready requirements when the house is being built, walls are open, and the trades are already on-site, is marginal. In comparison, the cost of retrofitting a building for these requirements can be orders of magnitude higher and act as a barrier for the homeowner to choose electric appliances. Not making new buildings electric-ready would leave homeowners exposed to potentially high retrofit costs in the future and will greatly inhibit customer choice.

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Although in support of the concept, it impacts consumer choice, and sizing wires belongs in electrical code not energy code. Future proofing does not belong in the minimum code (Vote: 9-2).

Assembly Action: **None**

Staff Analysis: If CE42-19 Part II is successful, sections being individually approved to be labeled as 'mandatory' will instead have their respective section numbers added to the new non-tradeable requirement tables.

Individual Consideration Agenda

Public Comment 1:

IECC®: R404.2 (IRC N1104.2) (New), R404.2.1 (IRC N1104.2.1) (New), R404.2.1 (New), R404.2.2 (New), R404.2.3 (New), R404.2.3 (IRC N1104.2.3) (New)

Proponents:
Lauren Urbanek, representing Natural Resources Defense Council (lurbanek@nrdc.org)

requests As Modified by Public Comment

Modify as follows:

2018 International Energy Conservation Code

R404.2 (IRC N1104.2) Electric readiness (Mandatory) Systems using gas or propane water heaters, dryers, or conventional cooking equipment to serve individual dwelling units shall comply with the requirements of Sections R404.2.1 throught R404.2.3 ~~R404.2.1 and R404.2.2~~. All water heating systems shall comply with Section R404.2. 4~~3~~.

~~**R404.2.1 (IRC N1104.2.1) Receptacle.** A dedicated 125-volt, 20-amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, shall be provided within 3 feet from each gas or propane water heater, dryer, and conventional cooking equipment, accessible with no obstructions.~~

R404.2.1 Household Ranges and Cooking Appliances. An individual branch circuit outlet with aminimum rating of 250-volts, 40-amperes shall be installed within three feet of each gas or propane range or permanently installed cooking appliance.

R404.2.2 Household Clothes Dryers and Water Heaters. An individual branch circuit outlet with a minimum rating of 250-volts, 30-amperes shall be installed within three feet of each gas or propane household clothes dryer and water heater.

R404.2.3 ~~R404.2.2 (IRC N1104.2.2)~~ Electrification-ready circuits. The unused conductors required by Section s R404.2.1 or R404.2.2shall be labeled with the word “spare.” Space shall be reserved in the electrical panel in which the branch circuit originates for the installation of an overcurrent device. Capacity for the circuits required by Section s R404.2.1 or R404.2.2 shall be included in the load calculations of the original installation.

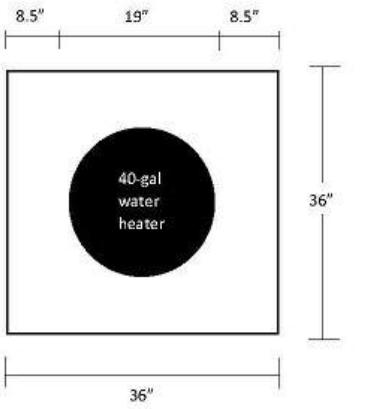
R404.2.3 (IRC N1104.2.3) Water heater space. An indoor space that is at least 3 feet by 3 feet by 7 feet high shall be available surrounding or within 3 feet of the installed water heater.

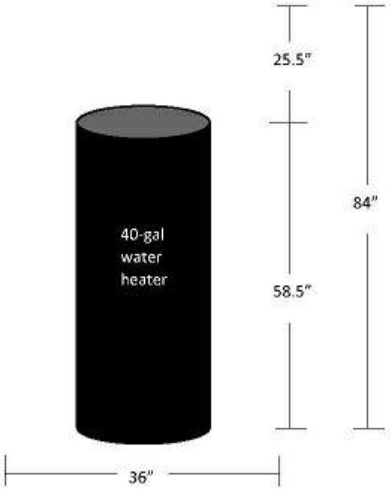
Exception: The water heater space requirement does not need to be met where a heat pump water heater or tankless water heater is installed.

Commenter's Reason: We request approval as modified, as this proposal enhances customer choice by making it easy for homeowners to choose either electric or gas appliances. The Committee expressed their support for this concept, but raised questions about some of the technical language of this proposal; the modification proposed here addresses these concerns.
The proposed modifications address the comments raised by the Committee as follows:

- The technical language related to electrical circuits and electrification-ready circuits has been clarified, in collaboration with the National Electrical Manufacturers Association.
- The water heater space requirement has been clarified. The intent of the water heater space requirement is to ensure that there is sufficient room for future installation of a heat pump water heater. The dimensions are specified by the heat pump water heater manufacturers. The attached illustration represents the typical dimensions of a 40 gallon gas water heater. In this situation, there would need to be just 8.5 inches clearance on either side of the water heater, and approximately 2’ of clearance on top of the water heater in order to meet the space requirements. [INSERT ATTACHMENT HERE]
- An exception has been added to clarify that the water heater space requirement does not apply when a tankless water heater is installed, as tankless products are often installed in close proximity to the hot water use in constrained spaces.

By ensuring that a home built with gas or propane can easily accommodate future electric appliances, this proposal protects homeowners from future costs, should natural gas become less affordable or even unavailable over the life of the building. As the electric grid becomes cleaner, and high-efficiency electric heat pump technology increasingly offers utility bill and pollution reduction benefits over gas, more customers may want to transition from natural gas to electric space and water heating. Federal, state, and local environmental and public health policies may also encourage, or even require the transition in some areas. Electric-ready requirements will protect customers from potentially high retrofit costs.





Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
The cost of retrofitting a building for electrification can be orders of magnitude higher than adding the appropriate circuits when the house is being built. Exact cost estimates are not available and will vary by home. However, doing this work while the walls are open and the trades are already on site will unquestionably save the cost of additional drywall and finishing work. Furthermore, the additional hassle of retrofitting may act as a barrier for the homeowner to choose electric appliances in the future. Therefore, allowing the homeowner future flexibility at the time of construction is critical. Failing to make new buildings electric-ready would leave homeowners exposed to potentially high retrofit costs.

Public Comment# 1830