

IRC R315 from FCAC

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IRC–12/13 Sections

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee

Delete and Replace IRC Section R315 as follows:

SECTION R315 CARBON MONOXIDE ALARMS

~~**R315.1 Carbon monoxide alarms.** For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in *dwelling units* within which fuel-fired *appliances* are installed and in dwelling units that have attached garages.~~

~~**R315.2 Carbon monoxide detection systems.** Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720, shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner and shall be monitored by an approved supervising station.~~

~~**Exception:** Where carbon monoxide alarms are installed meeting the requirements of Section R315.1, compliance with Section 315.2 is not required.~~

~~**R315.3 Where required in existing dwellings.** Where work requiring a *permit* occurs in existing *dwellings* that have attached garages or in existing dwellings within which fuel-fired *appliances* exist, carbon monoxide alarms shall be provided in accordance with Section R315.1.~~

~~**R315.4 Alarm requirements.** Single-station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.~~

R315 Carbon Monoxide Alarms

R315.1 General. Carbon monoxide alarms shall comply with Sections R315.

R315.1.1 Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

R315.2 Where required

R315.2.1 New construction. Carbon monoxide alarms shall be provided in dwelling units when either or both of the following conditions exist.

1. The dwelling unit contains a fuel-fired appliance.
2. The dwelling unit has an attached garage with an opening that communicates with the dwelling unit.

IRC R315 from FCAC

R315.2.2 Alterations, repairs and additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

R315.3 Location. Carbon monoxide alarms in dwelling units shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. When a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

R315.4 Combination alarms. Combination carbon monoxide/smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

R315.5 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

Exceptions:

1. Carbon monoxide alarms shall be permitted to be battery operated when installed in buildings without commercial power.
2. Carbon monoxide alarms installed in accordance with Section R315.2.2 shall be permitted to be battery powered.

R315.6 Carbon monoxide detection systems. Carbon monoxide detection systems shall be permitted to be used in lieu of carbon monoxide alarms and shall comply with Sections R315.6.1 to R315.6.4.

R315.6.1 General. Household carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

R315.6.2 Location. Carbon monoxide detectors shall be installed in the locations specified in Section R315.3. These locations supersede the locations specified in NFPA 720.

R315.6.3 Permanent fixture. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner and shall be monitored by an approved supervising station.

R315.6.4 Combination detectors. Combination carbon monoxide/smoke detectors shall be permitted to be installed in carbon monoxide detection systems in lieu of carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) and the ICC Fire Code Action Committee (FCAC). These ICC committees were established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Codes or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the these committees have held 6 open meetings and numerous workgroup meetings which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the CAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal clarifies requirements for the installation of CO alarm and CO detection systems as follows:

1. Section R315 was reorganized to provide requirements in a more logical location. Except as noted below no technical changes were made to the existing requirements.

IRC R315 from FCAC

2. Listed combination carbon monoxide/smoke alarms, and combination carbon monoxide /smoke detectors are readily available on the market. This proposal identifies the UL standards used to List these products, and allows them to be used in lieu of carbon monoxide alarms and detectors. A companion change to allow these units to be used in lieu of smoke alarms and smoke detectors is being proposed for Section R314. If both of these proposals are accepted, a single combination unit can be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and comply with R314.3 (2) and R315.3 (above).
3. Current Section R315.1 requires carbon monoxide alarms to be provided in dwelling units with attached garages. Carbon monoxide is most likely to enter a dwelling from an attached garage if there is a communicating opening between the garage and dwelling. Some homes with attached garages do not have a communicating opening. Accordingly, proposed Section R315.2.1(2) only requires carbon monoxide alarms when the dwelling unit has an attached garage with an opening that communicates with the dwelling unit.
4. Current Section R315.3 requires CO alarms to be installed in existing dwellings whenever any kind of work that requires a permit is conducted, such as reroofing or adding a deck. Proposed section R315.2.2 reflects the more realistic requirements for providing carbon monoxide alarms in existing dwelling units to match the triggers used to require smoke alarms in existing dwelling units that are included in Section R314.3.1. In addition Section R315.5(2) only requires these alarms to be battery powered.
5. The IRC allows fuel burning appliances to be installed in bedrooms and bathrooms, but this is not a common practice. Section R315.3 requires carbon monoxide alarms to be installed in a bedroom when it or its attached bathroom contains a fuel burning appliance. This protects occupants who sleep with their bedroom door closed.
6. R315.5 clarifies the requirements for powering CO alarms that is consistent with R314.4 smoke alarm requirements.
7. The carbon monoxide detection system requirements have been moved from Section R315.2 to proposed Sections R315.6 through R315.6.2. The basic requirements for these systems are unchanged, but additional language was added to clarify that:
 - a. These systems can be used in lieu of carbon monoxide alarms.
 - b. All devices and equipment in the system must be listed for their intended purpose (see NFPA 720, section 9.3.1)
 - c. Combination carbon monoxide/smoke detectors can be used.
 - d. Detectors only need to be installed in locations specified in section R315.3, not in all locations specified in NFPA 720.

The code allows requires smoke alarms and carbon monoxide alarms to be installed in the dwelling, but allows smoke detection systems and carbon monoxide detection systems to be provided in lieu of individual alarms to provide the desired protection. These systems need to be a permanent fixture of the occupancy and owned by the homeowner. This is because the systems could be leased to the homeowner by an alarm company. If the homeowner discontinued service with the alarm company there is nothing to prevent them from removing the system from the premise. Then the home would be left with no protection.

It is difficult to justify requiring these systems to be monitored by an approved supervising station, provided they provide local alarm notification. In addition Section 907.7.5 does not require monitoring of an automatic sprinkler system in one- and two-family dwellings. However there is nothing that prohibits these systems from being monitored.

In addition the reference in R314.2 to systems being maintained in accordance with NFPA 72 is being removed since the scope of the IRC does not cover maintenance of systems.

Cost Impact: These revisions have the potential to reduce the cost of construction.