



IRC Code Handout Residential Smoke Alarm & Carbon Monoxide Alarm Requirements

Smoke Alarms Requirements

Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 203.

New construction: Smoke alarms shall be provided in dwelling units.

Alterations, repairs & additions: Where alterations, repairs or additions requiring a permit occur, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surface of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of a porch, deck or electrical permits.
2. Installation, alteration or repairs of plumbing or mechanical systems.

Location: Smoke alarms shall be installed in the following locations.

1. In each sleeping room
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics and not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this

would prevent placement of a smoke alarm required by this section.

Installation near cooking appliances: Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Section R314.3.

1. Ionization smoke alarms shall not be installed less than 20 feet (6096 mm) horizontally from a permanently installed cooking appliance.
2. Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3048 mm) horizontally from a permanently installed cooking appliance.
3. Photoelectric smoke alarms shall not be installed less than 6 feet (1828 mm) horizontally from a permanently installed cooking appliance.

Interconnection: Where more than one smoke alarm is required to be installed with an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that shall actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Combination alarms: Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of smoke alarms.

Power source: Smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnection switch other

than those required for overcurrent protection.

Exceptions:

1. Smoke alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Smoke alarms installed in accordance with Section R314.2.2 alterations, repairs and additions shall be permitted to be battery powered.

Fire alarms systems: Fire alarms systems shall be permitted to be used in lieu of smoke alarms and shall comply with Section R314.7.1 through R314.7.4. Fire alarms systems shall comply with provisions of this code and the household fire warning equipment provisions of NFPA 72. Smoke detectors shall be listed in accordance with UL 268. Where a household fire alarm system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner.

Combination detectors: Combination smoke and carbon monoxide detectors shall be permitted to be installed in fire alarm systems in lieu of smoke detectors, provided that they are listed in accordance with UL 268 and UL 2075.

Carbon Monoxide Alarms

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

New Construction: Carbon monoxide alarms shall be provided in dwelling units where either or both of the following conditions exist.

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

Alterations, repairs & additions: Where alterations, repairs or additions requiring a permit occur, the individual dwelling shall be

equipped with carbon monoxide alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwelling, such as the replacement of roofing or siding, or the addition replacement of windows or doors, or the addition of a porch, deck or electrical permits.
2. Installation, alteration or repairs of plumbing or mechanical systems.

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

Combination alarms: Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

Interconnectivity: Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section R315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

Exception: Interconnection of carbon monoxide alarms in existing areas shall be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.

Power Source: Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where

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 where installed in buildings without commercial power.
2. Carbon monoxide alarms installed in accordance with Section R315.2.2 alterations, repairs and additions shall be permitted to be battery powered.

Carbon monoxide detection systems:

Carbon monoxide detection systems shall be permitted to be used in lieu of carbon monoxide alarms and shall comply with Section R315.7.1 through R315.7.4.

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

Permanent fixture: Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy and owned by the homeowner.

Combination detectors: Combination carbon monoxide and smoke detectors installed in carbon monoxide detection systems in lieu of carbon monoxide detectors shall be listed in accordance with UL 2075 and UL 268.

