



Smoke and Carbon Monoxide Alarms

REFERENCE: 2018 (IRC) International Residential Code, Section R314
2018 (IPMC) International Property Maintenance code
2017 National Electrical Code with amendments
City Ord. 05-08, Sec. 162.06
Iowa Department of Public Safety

SMOKE ALARM TYPES

Smoke alarms are to be DUAL-SENSOR SMOKE ALARMS. They must meet one of the following requirements.

1. Have both a photoelectric and ionization sensor,(Letter from IDoPS 03/30/2010) or
2. Two sensors installed, at least one of which detects smoke and one of which detects other hazards such as heat or carbon monoxide.

CARBON MONOXIDE DETECTORS

1. Required outside sleeping rooms only.
2. Can be plug-in or hardwired
3. Can be a separate alarm or can be combined with one of the smoke alarm types above. If the carbon monoxide alarm is used in combination with a smoke alarm, it satisfies the dual sensor requirement.

WHEN NEEDED:

1. **Additions, alterations, or repairs:** When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, smoke/carbon monoxide alarms shall be provided throughout the dwelling, located as required for new dwellings.

Exceptions: (Requires prior approval of the Building Official)

1. Permits that do not require a plan review and for which an electrician would not otherwise be involved in the remodeling project may be exempt. (Example: counter tops, plumbing fixtures, wall finish for existing room, replace cabinets of same size and locations)
2. Repairs to the exterior surfaces of dwellings are exempt from the smoke alarm requirements. (Examples: roofing, siding, window replacement, open decks)

2. **Electrical service upgrade:** When an electrical service and panel are installed or replaced in a dwelling unit or multiple dwelling unit building, smoke/carbon monoxide alarms shall be installed throughout the dwellings, located as required for new dwellings.

Smoke alarms are required to be hardwired/battery back-up (R314.3 & 314.4)

POWER SOURCE: Smoke alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup source. Alarms shall be electrically interconnected so when one alarm sounds, all alarms will be activated. Carbon monoxide alarms can be plug-in type, battery powered, or direct wired or installed in combination with a smoke alarm.

1. For new construction
2. When doing a service upgrade *
3. For remodels *

* Exception: (Requires prior approval of the Building Official)

1. Smoke alarms in existing areas may not be required to be interconnected or hard wired to the building wiring where the alterations or repairs do not result in the removal of interior wall or ceiling finishes and there is not ready access through an unfinished basement or attic.
2. RF (Radio Frequency) Alarms maybe installed in place of hard wired with prior approval given by the Building Official.

SOUND LEVEL: The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. Minimum sound level shall be 70 decibels.

INSTALLATION: According to the manufacturer's listing and instructions.

LOCATIONS REQUIRED (R314.3):

- In each sleeping room.
- Outside each sleeping area in the immediate vicinity of the sleeping rooms.
Carbon monoxide alarms to be one type of alarm in this location.
- On each story of the dwelling including basements and cellars.

Rental Properties:

If the existing smoke detectors are in good working order, they can remain however if they need to be replaced, they must be replaced with a dual sensor. See above for required locations.

Carbon Monoxide Detectors shall be installed per Section 705 of the IPMC 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.