

2006 IRC

IRC R313

Smoke alarms must be audible in all parts of the house and installed per manufacturer's instructions.

New Houses

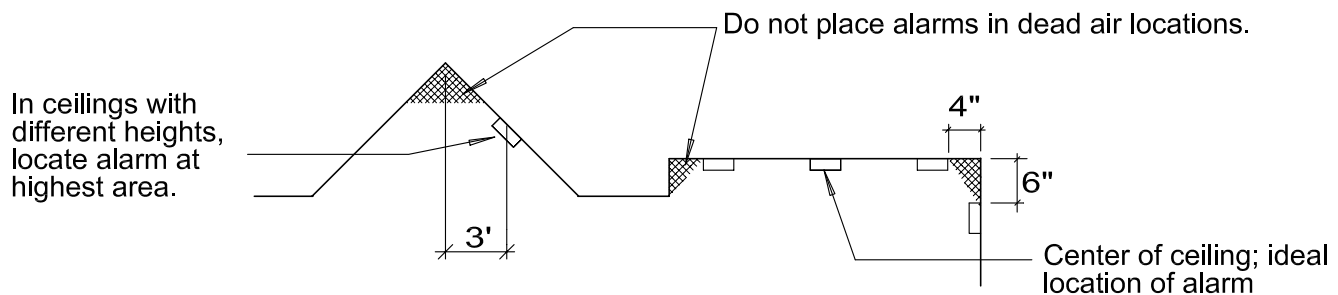
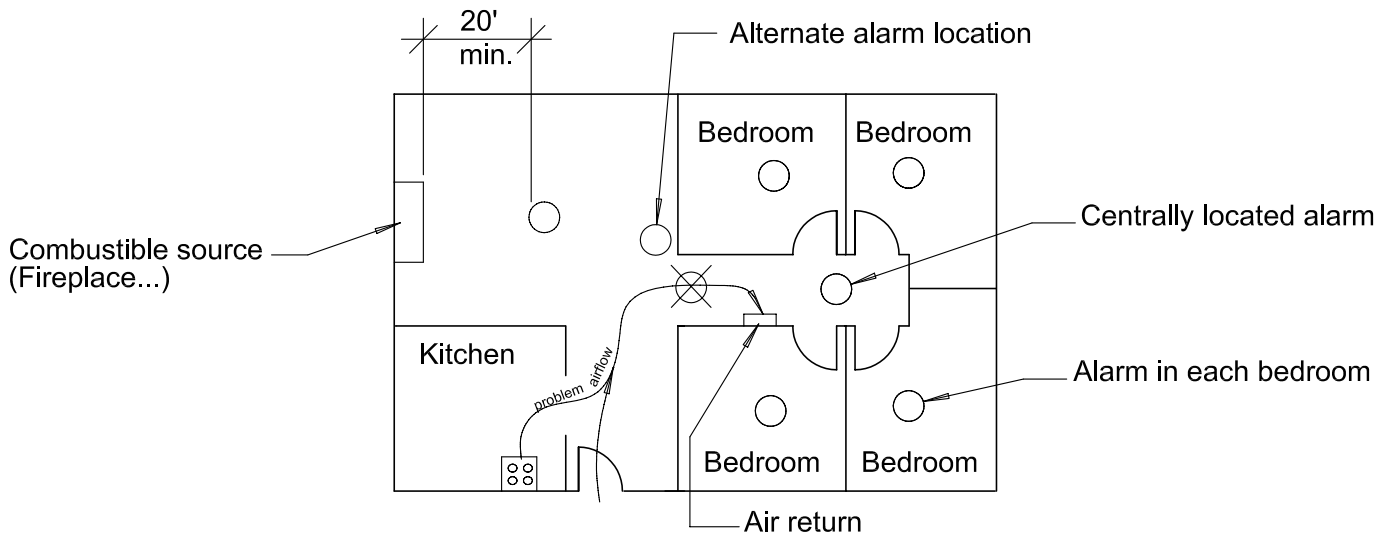
Alarms are required and must be connected to the main electrical system with battery backup.

Existing Houses (IRC R313.2.1)

Alarms are required for any addition or repair work requiring a building permit, except exterior surface work such as re-roofing. Alarms must be interconnected and hard wired. Exception: Alarms will not be required to be interconnected and hard wired where the permit work does not require the removal of interior wall or ceiling finishes unless there is an attic, crawlspace, or basement available where access is provided.

Required Locations

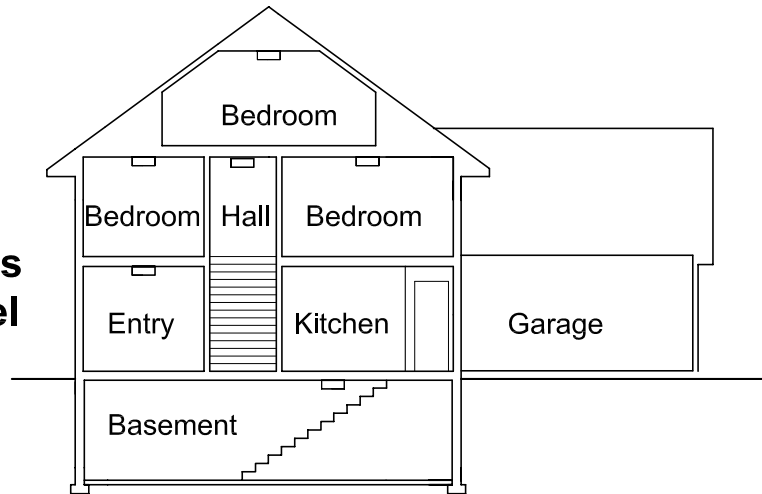
- ▷ Each sleeping room and outside each sleeping area in the immediate vicinity of the bedrooms.
- ▷ Every floor level including basements, but not including crawlspace and uninhabitable attics.
- ▷ In split level floor plans, at the upper level, provided there is no intervening door between adjacent levels and the lower level is less than a full story below the upper level.



GENERAL INFORMATION:

- Obtain a building permit before starting construction.
- The intent of this tip sheet is to address the basics of private residential smoke alarms only and does not address the subject in great detail. Additional information can be found at your local building department, home improvement store, or library.

Smoke alarms on every level



Avoid these locations for alarms:

Near combustible sources, fireplaces, furnaces, hot water heaters, space heaters, kitchens, garages with vehicle exhaust. Place alarms at least 20' away from such sources.

In air streams passing by kitchens, see page 1.

In damp areas such as bathrooms with showers. Place alarms at least 10' away from such sources.

In very cold or hot areas such as unheated or outdoor rooms where the temperature will fall out of the alarm operating range.

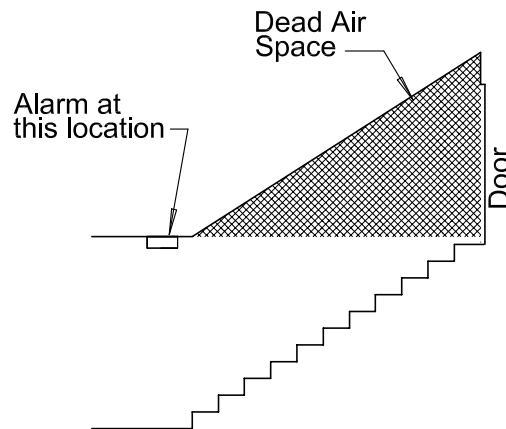
In very dusty or dirty areas where the vents of the alarm could become clogged.

Near fresh air vents or drafty areas such as air conditioners, heaters, floor and ceiling fans...

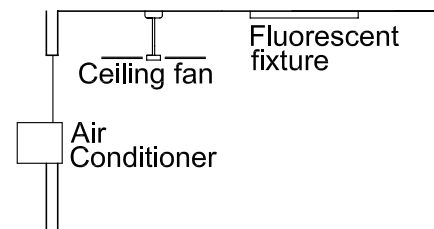
In dead air spaces. See this page for dead air at enclosed stairs and page 1 for other locations.

In insect-infested areas. Install bug screens.

Near fluorescent lights. Place alarms at least 5 feet away from such sources.



Enclosed Stairway



Avoid smoke alarms in these locations

2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements but 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.

When more than one smoke alarm is required to be installed within an individual dwelling unit 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 unit.

R313.2.1 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 smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

Exceptions:

1. Interconnection and hard-wiring of smoke alarms in existing areas shall not be required where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.
2. 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.

R313.3 Power source. In new construction, the required smoke 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. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs or additions regulated by Section R313.2.1.

**SECTION R314
FOAM PLASTIC**

R314.1 General. The provisions of this section shall govern the materials, design, application, construction and installation of foam plastic materials.

R314.2 Labeling and identification. Packages and containers of foam plastic insulation and foam plastic insulation components delivered to the job site shall bear the label of an approved agency showing the manufacturer's name, the product listing, product identification and information sufficient

to determine that the end use will comply with the requirements.

R314.3 Surface burning characteristics. Unless otherwise allowed in Section R314.5 or R314.6, all foam plastic or foam plastic cores used as a component in manufactured assemblies used in building construction shall have a flame spread index of not more than 75 and shall have a smoke-developed index of not more than 450 when tested in the maximum thickness intended for use in accordance with ASTM E 84. Loose-fill-type foam plastic insulation shall be tested as board stock for the flame spread index and smoke-developed index.

Exception: Foam plastic insulation more than 4 inches thick shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches, provided the end use is approved in accordance with Section R314.6 using the thickness and density intended for use.

R314.4 Thermal barrier. Unless otherwise allowed in Section R314.5 or Section R314.6, foam plastic shall be separated from the interior of a building by an approved thermal barrier of minimum 0.5 inch (12.7 mm) gypsum wallboard or an approved finish material equivalent to a thermal barrier material that will limit the average temperature rise of the unexposed surface to no more than 250°F (139°C) after 15 minutes of fire exposure complying with the ASTM E 119 standard time temperature curve. The thermal barrier shall be installed in such a manner that it will remain in place for 15 minutes based on NFPA 286 with the acceptance criteria of Section R315.4, FM 4880, UL 1040 or UL 1715.

R314.5 Specific requirements. The following requirements shall apply to these uses of foam plastic unless specifically approved in accordance with Section R314.6 or by other sections of the code or the requirements of Sections R314.2 through R314.4 have been met.

R314.5.1 Masonry or concrete construction. The thermal barrier specified in Section R314.4 is not required in a masonry or concrete wall, floor or roof when the foam plastic insulation is separated from the interior of the building by a minimum 1-inch (25 mm) thickness of masonry or concrete.

R314.5.2 Roofing. The thermal barrier specified in Section R314.4 is not required when the foam plastic in a roof assembly or under a roof covering is installed in accordance with the code and the manufacturer's installation instructions and is separated from the interior of the building by tongue-and-groove wood planks or wood structural panel sheathing in accordance with Section R803, not less than ¹⁵/₃₂ inch (11.9 mm) thick bonded with exterior glue and identified as Exposure 1, with edges supported by blocking or tongue-and-groove joints or an equivalent material. The smoke-developed index for roof applications shall not be limited.

R314.5.3 Attics. The thermal barrier specified in Section 314.4 is not required where attic access is required by Section R807.1 and where the space is entered only for service of utilities and when the foam plastic insulation is protected