

Install.



Inspect.



Protect.



Smoke Alarms Save Lives.



The United States Fire Administration

State-by-State Residential Smoke Alarm Requirements



FEMA

Introduction

As an entity of the Department of Homeland Security's Federal Emergency Management Agency, the mission of the U.S. Fire Administration (USFA) is to foster a solid foundation in prevention, preparedness, and response by providing national leadership to local fire and emergency services.

America's fire death rate is one of the highest per capita in the industrialized world. Fire kills approximately 3,000 and injures approximately 20,000 people each year. The majority of deaths are in homes without a working smoke alarm. A smoke alarm greatly reduces your chances of dying in a fire.

Firefighters pay a high price for this terrible fire record as well; approximately 100 firefighters die in the line of duty each year. Direct property losses due to fire reach almost \$11 billion a year. Most of these deaths and losses can be prevented!

The USFA compiled the following state-by-state residential guidelines for smoke alarms. Families can find life-saving fire safety tips required or suggested by their very own state. The guidelines include instructions on the installation and maintenance of smoke alarms. The tips will help families do their part to protect themselves firefighters who protect their lives!

The following smoke alarm requirements are for 47 states submitted to the USFA, as of May 3, 2010. The requirements for the remaining states will be added to the campaign Web site (www.usfa.dhs.gov/smokealarms) as they become available.

Alabama Department of Insurance – Fire Marshal

<http://www.aldoi.gov/FireMarshal/default.aspx>

Regulations/Standards

Alabama adopted the NFPA Codes, 2003 edition. NFPA 101 requires electrically powered smoke alarms outside sleeping areas and in each sleeping room. It also requires a smoke alarm on each floor of the structure. There is no requirement for a specific type: ionization, photoelectric or dual. Any of the three will meet the minimum requirements.

Installation

General guidelines for smoke alarm placement:

Placement (on the ceiling or wall) of smoke alarms is to be as specified by the manufacturer of the particular alarm and NFPA 72.

Guidelines for connecting the smoke alarm:

Primary power for all smoke alarms in newly built homes shall be from the building electrical system. Battery power smoke alarms are recognized in existing dwellings.

For more information please visit: <http://www.aldoi.gov/FireMarshal/default.aspx>

Contact:

Ed Paulk, State Fire Marshal
Alabama State Fire Marshal's Office
P O Box 303351
Montgomery, AL 36130-3351
Tel: 334-241-4166
Email: Firemarshal@insurance.alabama.gov

Arizona Fire Marshal

<http://www.dfbls.az.gov/ofm.aspx>

Regulations/Standards

The following requirements are specific to the City of Tucson, AZ and other cities that have adopted the 2006 IFC with amendments. The Office of the State Fire Marshal applies the adopted 2003 IFC and 2002 nfpa-72 with no amendments for residential dwellings units of 5 or more.

No specific type of home alarm is mandated for residents. Each "type" of alarm (ionization or photoelectric) works better in different situations. Smoke alarms shall be installed in new and existing homes.

Installation

General guidelines for smoke alarm placement:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping 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.

Guidelines for connecting the smoke alarm:

There are separate regulations for connecting smoke alarms in new and existing homes. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception:

Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit.

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The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

For existing building the requirements are: **907.3.2.3 Power source.** In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception:

Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where 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 interconnection without the removal of interior finishes.

For more information, please see: International Fire Code 2006

Contact:

Robert Barger, State Fire Marshal
1110 West Washington, Suite 100
Phoenix, AZ 85007
Phone: 602-364-1003
Fax: 602-364-1084
Email: Bob.barger@dfbls.az.gov

Alaska Division of Fire & Life Safety

<http://www.dps.state.ak.us/fire/default.aspx>

Regulations/Standards

How To Choose An Alarm

- Be sure that smoke alarms carry the label of an independent testing lab, such as Underwriters Laboratories (UL) household currents.
- Smoke alarms have different sensor technologies:
 - Ionization Smoke Alarms - More effective against fast-flaming fires- fire which consume materials rapidly and spread quickly. Sources of these fires may be paper fires or kitchen fires.
 - Photoelectric Smoke Alarms - These alarms are more effective against slow smoldering fires (fires which smolder for hours before busting into flame.)Sources of these fires include cigarettes burning in couches or bedding.
- Combo Units - Ionization/Photoelectric are available and provide early warning of both types of fires.

Installation

General guidelines for smoke alarm placement:

How Many Do I Need

- Install at least one in every floor including the basement and attic and inside each sleeping area.
- Ensure that all members of your family can hear the smoke alarm. If someone is hearing impaired, install alarms that flash a strobe light as well as sound an alarm.

Where To Install Alarms

- Follow the directions that are provided with the alarm.

Experts recommend that:

- Smoke alarms are installed outside each sleeping area, in every bedroom and above stairwells.
- Mount alarms high on a wall or on top of the ceiling. Position wall-mounted alarms with the top of the alarm 4-12 inches (10-30 centimeter) from the ceiling.
- Position ceiling-mounted alarms at least 4 inches (10 centimeters) away from the nearest wall.
- In stairways with no doors at the top or bottom, install alarms anywhere along the path smoke would take as it traveled up the stairs.
- Don't install a smoke alarm near a window, door, or forced-air register where drafts could interfere with its operation. The moving air can blow smoke away from the alarms sensor.
- To avoid false alarms, keep smoke alarms at least ten feet from stoves and steamy showers.

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Guidelines for connecting the smoke alarm:**How To Install Alarms**

- Follow the directions that are provided with the alarm.

Experts state that:

- Most battery-powered smoke alarms can be installed by following the manufacturer's instructions using a drill and screwdriver.
- Plug in alarms must have restraining devices so they cannot be unplugged by mistake.
- Hard-wire alarms need to be installed by a qualified electrician.
- Never connect a smoke alarm to a circuit that can be turned off from a wall switch.

Maintenance Tips:

- Test smoke alarms once a month by pushing the "test button."
- Install new batteries at least once a year.
- To have the Alaska State Fire Marshal's Office remind you via email, sign up for the Automatic Smoke Alarm Reminder.
- Clean smoke alarms using a vacuum cleaner without removing the alarms cover.
- Replace smoke alarm every 10 years.

For more information please visit: <http://www.dps.state.ak.us/Fire/TEB/smokealarmreminder.aspx>

Contact:

David Tyler, State Fire Marshal
Office of the Alaska State Fire Marshal
Marie Collins
Training and Education Bureau
5700 East Tudor Road
Anchorage, Alaska 99507
Tel: (907) 269-5625
Fax: (907) 269-0102

Arkansas Fire Marshal

http://www.asp.state.ar.us/divisions/rs/fire_marshal.html

Regulations/Standards

“The 2007 Arkansas Fire Prevention Code went into effect on August 1, 2008. The 2007 Arkansas Fire Prevention Code is a three volume set consisting of Volume I, the Fire Code, Volume II, the Building Code, and Volume III, the Residential Code. The 2007 Arkansas Fire Prevention Code is based on the 2006 Editions of the International Fire, Building, and Residential Codes, with some Arkansas changes. The Arkansas Fire Prevention Code applies Statewide in both incorporated and unincorporated areas. The requirements for smoke detectors in one and two family dwellings are found in Volume III. The State of Arkansas did not make any changes to the requirements found in the 2006 Edition of the International Residential Code regarding smoke detectors.”

Installation

General guidelines for smoke alarm placement:

R313.2 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 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.

Guidelines for connecting the smoke alarm:

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 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 alternation or repairs do not results 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.

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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 selection.

R313.3 Power Source. In new construction, the required smoke alarms shall receive their primary power from the building wiring is served from a commercial source, and when primary power is interrupted, shall receive power from battery. Wiring shall be permanent and without a disconnecting switch other than those required for over current 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.

For more information, please see: International Fire Code 2006.

Contact:

Lieutenant Lindsey Williams
Arkansas State Fire Marshal
1 State Police Plaza Drive
Little Rock, AR 72209
Tel: 501-618-8604
Fax: 501618-8621
Email: lindsey.williams@asp.arkansas.gov

Colorado Division of Fire Safety

<http://dfs.state.co.us/>

Regulations/Standards

Colorado does not have a state law requiring smoke alarms in residential occupancies. However, the vast majority of local jurisdictions have adopted the International Code set, which requires residential occupancies to be equipped with smoke detectors. Colorado does have a state law requiring the installation of carbon monoxide detectors in all residential occupancies.

There are two main types of smoke alarms, and both detect all types of growing fires. Ionization alarms, which sell for about \$5 for battery-operated models, respond faster to flaming fires, such as those involving paper or flammable liquids. Photoelectric alarms, which sell for about \$20, respond faster to smoldering fires, such as those ignited by cigarettes in upholstered furniture, bedding materials, and mattresses. Dual ionization/photoelectric alarms are also available, and cost about \$30.

To ensure that both smoldering and flaming fires are detected as quickly as possible, the best protection is to have both types of alarms installed, or dual ionization/photoelectric alarms. When purchasing smoke alarms look at the packaging for the “mark” or “seal” of an independent third-party testing laboratory. The mark of an independent third-party laboratory tells you that a representative sample of the smoke alarm has been evaluated to ensure conformity with nationally recognized safety requirements.

Installation

General guidelines for smoke alarm placement:

- Working smoke alarms should be installed on every level of the home, outside sleeping areas and inside bedrooms, per manufacturer’s specifications. Locate smoke alarms away from air vents or registers, and avoid other spaces with high airflow.
- All smoke alarms must be kept free of dust and insects. Current manufacturers’ guidance is to test alarms weekly and clean them monthly to make sure they operate properly. If the unit is battery operated or has battery back-up, the batteries should be replaced at least once a year. In addition, experts say that the smoke alarm unit itself should be replaced every 10 years.
- Never remove the batteries to disable a smoke alarm, even if you experience "nuisance" alarms, such as while cooking or showering. Fan the detector with a newspaper or towel to stop the alarm. Clean the smoke alarm according to the manufacturer's instructions, and if possible relocate it away from the kitchen or bathroom. Some smoke alarms have a silencing feature, so nuisance alarms can be stopped quickly and easily.

Guidelines for connecting the smoke alarm:

A smoke alarm uses one or both methods, sometimes plus a heat detector, to warn of a fire. The devices may be powered by a 9-volt battery, lithium battery, or 120-volt house wiring.

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For more information please visit: http://dfs.state.co.us/PDF/Smoke_Alarm_Special_Report.pdf

Contact:

Kevin Klein, Director
Colorado Division of Fire Safety
9195 East Mineral Avenue, Suite 234
Centennial, CO 80112
Tel: (720) 852-6735
Fax: (720) 852-6757
Email: kevin.klein@cdps.state.co.us

Connecticut Office of State Fire Marshal
<http://www.ct.gov/dps/cwp/view.asp?a=2149&q=294300>

Regulations/Standards

Sec. 3. Subsection (a) of section 29-292 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective October 1, 2009*):

(a) The State Fire Marshal and the Codes and Standards Committee shall adopt and administer a Fire Safety Code and at any time may amend the same. The code shall be based on a nationally recognized model fire code and shall be revised not later than January 1, 2005, and thereafter as deemed necessary to incorporate advances in technologies and improvements in construction materials and any subsequent revisions to the code not later than eighteen months following the date of first publication of such revisions to the code, unless the State Fire Marshal and the committee certify that a revision is not necessary for such purpose.

(b) The regulations in said code shall provide for reasonable safety from fire, smoke and panic there from, in all buildings and areas adjacent thereto except in private dwellings occupied by one or two families and upon all premises, [except those used for manufacturing,] and shall include provision for (1) carbon monoxide detection and warning equipment in new residential buildings not exempt under regulations adopted pursuant to this subsection and designed to be occupied by one or two families for which a building permit for new occupancy is issued on or after October 1, 2005, and (2) smoke detection and warning equipment in (A) residential buildings designed to be occupied by two or more families, (B) new residential buildings designed to be occupied by one family for which a building permit for new occupancy is issued on or after October 1, 1978, requiring equipment complying with the Fire Safety Code, and (C) new residential buildings designed to be occupied by one or more families for which a building permit for new occupancy is issued on or after October 1, 1985, requiring equipment capable of operation using alternating current and batteries.

Said regulations shall provide the requirements for markings and literature which shall accompany such equipment sufficient to inform the occupants and owners of such buildings of the purpose, protective limitations and correct installation, operating, testing, maintenance and replacement procedures and servicing instructions for such equipment and shall require that smoke detection and warning equipment which is installed in such residential buildings shall be capable of sensing visible or invisible smoke particles, that the manner and location of installing smoke detectors shall be approved by the local fire marshal or building official, that such installation shall not exceed the standards under which such equipment was tested and approved and that such equipment, when activated, shall provide an alarm suitable to warn the occupants, provided each hotel, motel or inn shall install or furnish such equipment which, when activated, shall provide a visible alarm suitable to warn occupants, in at least one per cent of the units or rooms in such establishment having one hundred or more units or rooms and in establishments having less than one hundred units or rooms, it shall install or furnish at least one such alarm.

Said regulations shall provide the requirements and specifications for the installation and use of carbon monoxide detection and warning equipment and shall include, but not be limited to, the location, power

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requirements and standards for such equipment and exemptions for buildings that do not pose a risk of carbon monoxide poisoning due to sole dependence on systems that do not emit carbon monoxide.

For more information please visit: <http://cga.ct.gov/2009/ACT/PA/2009PA-00035-R00HB-06324-PA.htm> Sec. 3. Subsection (a) of section 29-292.

Installation

(b) (1) No certificate of occupancy shall be issued for any residential building designed to be occupied by two or more families, or any new residential building designed to be occupied by one or more families for which a building permit for new occupancy is issued on or after October 1, 1978, unless the local fire marshal or building official has certified that said building is equipped with smoke detection and warning equipment complying with the Fire Safety Code.

(2) No certificate of occupancy shall be issued for any new residential building not exempt under regulations adopted pursuant to subsection (a) of this section and designed to be occupied by one or two families for which a building permit for new occupancy is issued on or after October 1, 2005, unless the local fire marshal or building official has certified that said building is equipped with carbon monoxide detection and warning equipment complying with the Fire Safety Code.

(1949 Rev., S. 3665; 1971, P.A. 802, S. 11; P.A. 73-95, S. 1; P.A. 76-78; P.A. 77-334, S. 1, 2; 77-604, S. 65, 84; P.A. 80-297, S. 11, 20; P.A. 81-381, S. 1, 4; P.A. 82-344, S. 1, 3; 82-432, S. 11, 19; 82-472, S. 179 (Void), 183; P.A. 84-178; P.A. 85-321, S. 1; P.A. 86-327, S. 3; P.A. 87-186; July Sp. Sess. P.A. 87-2, S. 1, 2; P.A. 88-364, S. 46, 123; P.A. 97-25; P.A. 04-59, S. 3; P.A. 05-161, S. 1.)

For more information please review: Connecticut General Statutes section 29-292 at <http://cga.ct.gov/2009/pub/chap541.htm>

General guidelines for smoke alarm placement:

For Existing Occupancies

The 29-292 statute for a single family dwelling built before 10/1/1978 does not require smoke alarms.

For New Construction

907.2.8.3 Smoke Alarms. Smoke alarms shall be installed as required by Section 907.2.10. In buildings that are not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the smoke alarms in guestrooms shall be connected to an emergency electrical system and shall be annunciated by guestroom at a constantly attended location from which the fire alarm system is capable of being manually activated.

907.2.9 Group R-2. A manual fire alarm system shall be installed in Group R-2 occupancies where:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge;

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2. Any dwelling unit or sleeping unit is located three or more stories below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit; or
3. The building contains more than 11 dwelling units or sleeping units.

Exceptions:

2. A fire alarm system is not required in buildings not over two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, exit court or yard.
3. Manual fire alarm system boxes are not required throughout the building when the following conditions are met:
 - 2.1 The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or Section 903.3.1.2;
 - 2.2 The notification appliances will activate upon sprinkler flow; and
 - 2.3 At least one manual fire alarm box installed at an approval location.
4. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units or sleeping units and are protected by an approved automatic sprinkler system installed in accordance with Sections 903.3.1.1 or 903.3.1.2, provided that dwelling units or sleeping units wither have a means or egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1022.5, Exception-4.

907.2.10 Single- and multiple-station smoke alarms. Listed single-and multiple-station smoke alarms shall be installed in accordance with the provisions of this code and the household fire-warning equipment provisions of NFPA 72.

907.2.10.1 Where required. Single- or multiple-station smoke alarms shall be installed in the locations described in Sections 907.2.10.1. through 907.2.10.1.3.

907.2.10.1.1 Group R-1. Single- or multiple-station some alarms shall be installed in all of the following locations in Group R-1:

5. In sleeping areas.
6. In every room in the path of the means of egress from sleeping area to the door leading from the sleeping unit.
7. In each story within the sleeping unit, including basements. For sleeping 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.

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8. (Add) 907.2.10.1.2.1 Group R-4. In Group R-4 occupancies, single- or multiple-station smoke alarms shall be installed in living rooms, dens, day rooms and similar spaces in addition to the locations required by Section 907.2.10.1.2.

Guidelines for connecting the smoke alarm:

For Existing Occupancies

9.6.2.10.2 Smoke alarms shall receive their operating power as follows:

- (1) In buildings for which a building permit for new occupancy was issued on or after October 1, 1985, smoke alarms shall be powered by both alternating current (AC) and batteries (DC).
- (2) In buildings for which a building permit for new occupancy was issued on or after October 1, 1976, smoke alarms shall be powered by the household electrical service.
- (3) In buildings for which a building permit for new occupancy was issued prior to October 1, 1976, smoke alarms may be battery powered.

9.6.2.10.3 In new construction, where two or more smoke alarms are required within a dwelling unit, suite of rooms, or similar area, they shall be arranged so that operation of any smoke alarm shall cause the alarm in all smoke alarms within the dwelling unit, suite of rooms, or similar area to sound, unless otherwise permitted by the following:

- (1) The requirement of 9.6.2.10.3 shall not apply where permitted by another distribution of the alarm signal.
- (2) The requirement of 9.6.2.10.3 shall not apply to configurations that provide equivalent distribution of the alarm signal.

9.6.2.10.4 The alarms shall sound only within an individual dwelling unit, suite of rooms, or similar area and shall not actuate the building fire alarm system, unless otherwise permitted by the authority having jurisdiction. Remote annunciation shall be permitted.

For New Construction

(Add) 907.2.10.1.2.2 Alterations and additions. When alterations or additions requiring a permit occur in Group R-2, R-3 and R-4 occupancies, or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit shall be provided with smoke alarms located as required for new dwellings. Such smoke alarms within existing spaces may be battery operated and are not required to be dual powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

For more information please visit: <http://www.ct.gov/dps/cwp/view.asp?a=2149&q=294300>

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Contact:

John Blaschik, Jr., Deputy State Fire Marshal
Bureau of State Fire Marshal
Division of Fire, Emergency and Building Services
1111 Country Club Road
Middletown, CT 06457
Tel: 860-685-8380
Fax: 860-685-8359
Email: osfm.engineer@po.state.ct.us

Delaware Office of the State Fire Marshal

<http://statefiremarshal.delaware.gov>

Regulations/Standards

WHAT IS THE SMOKE DETECTOR LAW?

Delaware Code, Title 16, Chapter 66, Section 6631 requires the installation of smoke detectors on **EACH** level of **ALL** one- and two-family dwellings, mobile homes, modular homes, and townhouses. This law required ALL residential occupancies to have the required smoke detection devices installed by **JULY 1, 1994**.

WHAT KIND OF SMOKE DETECTORS?

A smoke detector can be either the photoelectric or ionization type, but both are designed to sense the visible and invisible particles of smoke and gas from fire. Make sure the smoke detector is listed by Underwriters Laboratory, Factory Mutual or any other nationally recognized testing laboratory through the American Association for Laboratory Accreditation. Read the package carefully and look for a listed laboratory symbol.

Installation

General guidelines for smoke alarm placement:

WHO MUST INSTALL SMOKE DETECTORS?

The owners of **ALL**:

- One- and Two-Family Homes
- Mobile Homes
- Modular Homes
- Townhouses

must install the required number of smoke detectors. In a rented or leased living unit where there are battery powered smoke detectors, the **OWNERS must** install the smoke detectors. Where the rental or lease agreement is for a period of one month or more, the **TENANT** is responsible to maintain the battery in the smoke detector.

WHY INSTALL SMOKE DETECTORS?

Smoke detectors should be installed, not because it is the law, but because **PROPERLY INSTALLED AND MAINTAINED SMOKE DETECTORS WILL SAVE YOUR LIFE AND THE LIVES OF YOUR FAMILY**. In the past five years, 57 people have died in the State of Delaware as a result of fires in their homes. Of those 57 fire deaths, 36 of them were not protected by a working smoke detector.

HOW MANY SMOKE DETECTORS?

The number of smoke detectors is determined by:

1. The number of levels in the home; and
2. The number and location of bedrooms.

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WHERE DO I INSTALL SMOKE DETECTORS?

1. Install a smoke detector at each level of the home, including the basement.
2. Install a smoke detector outside each bedroom or group of bedrooms.

In either case, follow the manufacturer's specifications for installation. They will tell you exactly where to mount the smoke detectors and what inspection, testing and maintenance is required.

Guidelines for connecting the smoke alarm:

WHAT TYPE OF POWER?

- Residential occupancies constructed prior to July 8, 1993 are required to have individual, single station, battery powered smoke detectors.
- Residential occupancies constructed after July 8, 1993 are required to have "hard-wired" smoke detectors. This means a licensed electrician must install the smoke detectors so that they are powered by household electricity. If there is more than one smoke detector, they must be wired so that if **one** smoke detector sounds, they **all will sound**.

For more information please visit: <http://statefiremarshal.delaware.gov/pdfs/smokedetectbro.pdf>

Contact:

Mike Cahionchio
Delaware State Fire Marshal
Division of the State Fire Marshal
State Fire Prevention Commission
1537 Chestnut Grove Road
Dover, DE 19904-1544
Tel: (302) 739-5665
Email: fire.marshal@state.de.us

District of Columbia Fire Marshal

<http://www.fems.dc.gov>

Regulations/Standards

The District of Columbia requires private homes to install smoke alarms. There are no established rules for a specific type of alarm that must be used.

There are many different brands of smoke alarms available on the market but they fall under three basic types: ionization, photoelectric and dual.

Ionization alarms sound more quickly when a flaming, fast moving fire occurs. **Photoelectric alarms** are quicker at sensing smoldering, smoky fires. There are also combination smoke alarms that combine ionization and photoelectric into one unit, called **dual sensor smoke alarms**.

Because both ionization and photoelectric smoke alarms are better at detecting distinctly different yet potentially fatal fires, and because homeowners cannot predict what type of fire might start in a home, the USFA recommends the installation of both ionization and photoelectric or dual sensor smoke alarms. In addition to the basic types of alarms, there are alarms made to meet the needs of people with hearing disabilities. These alarms may use strobe lights that flash and/or vibrate to assist in alerting those who are unable to hear standard smoke alarms when they sound.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Installation

General guidelines for smoke alarm placement:

Install and Maintain Smoke Alarms

- Install a smoke alarm outside of every sleeping area.
- Install a smoke alarm on every level of your home.
- Test your smoke alarm monthly.
- Change the battery in your smoke alarm twice a year when you change the time on your clocks, or opt for the new lithium battery alarms
- Replace the smoke alarm at least every ten years
- If you would like to receive a free smoke alarm through the District's Fire/EMS give-away program, please complete the online Smoke Alarm Request Form.

Guidelines for connecting the smoke alarm:

The smoke alarm should be hard wired or connected to the household electrical system with a battery backup.

For more information please visit: <http://fems.dc.gov/fems/cwp/view,a,3,q,526018,femsNav,|31511|.asp>

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For Smoke Alarm Questions:

DFC Kenneth Crosswhite
Director of Community Relations
202-673-3331 or kenneth.crosswhite@dc.gov

Fire and Emergency Medical Services
1923 Vermont Avenue, NW, Suite 105S
Washington, DC 20001
202-673-3331

Code Questions can be directed to:

DFC Bruce D. Faust, Fire Marshal
441 4th St. NW Suite 370 N
Washington DC 20001
(202) 727-3298 or bruce.faust@dc.gov

Florida Division of State Fire Marshal

www.myfloridacfo.com/sfm

Regulations/Standards

Florida only requires that the smoke detectors be installed to meet a requirement of the law listed by a nationally recognized testing laboratory.

Installation

General guidelines for smoke alarm placement:

Smoke detectors must be installed in accordance with NFPA 72 for household warning systems. The battery exception (NFPA 101-9.6.2.9.2) within the code is permissible. They are required in all new homes and some communities have local ordinances requiring that they be installed upon the sale of existing homes. Smoke detectors in apartments are mandated by the Florida fire Prevention Code and enforced through periodic inspections.

No, placement is in accordance with the adopted NFPA standard 72 and 101. Essentially inside and outside of sleeping rooms and at least one per floor.

Guidelines for connecting the smoke alarm:

New homes are required to have smoke detectors installed; however, they are not under the jurisdiction of the fire official. One and two family dwellings are under the Florida Building Code and the local building official. The Life Safety Code is not enforceable on newly built one or two family homes.

For more information please visit: www.myfloridacfo.com/sfm

Contact:

James E. Goodloe, Chief
Bureau of Fire Prevention
Florida Division of State Fire Marshal
200 East Gaines Street
Tallahassee, FL 32399
Tel: (850) 413-3629
Fax: (850) 414-6119

Georgia Fire Marshal Office

<http://www.inscomm.state.ga.us/FireMarshal/Home.aspx>

Regulations/Standards

Georgia has statewide requirements for placing smoke alarms in existing and new homes. To find safety tips and additional local requirements, please contact your county fire office. However, residents can use the following guidelines to choose, properly install and connect smoke alarms.

TITLE 25. FIRE PROTECTION AND SAFETY; CHAPTER 2. REGULATION OF FIRE AND OTHER HAZARDS TO PERSONS AND PROPERTY GENERALLY, O.C.G.A. § 25-2-40 (2009)

§ 25-2-40. Smoke detectors required in new dwellings and dwelling units; exceptions
(a)(1) Except as otherwise provided in subsection (f) of this Code section, on and after July 1, 1987, every new dwelling and every new dwelling unit within an apartment, house, condominium, and townhouse and every motel, hotel, and dormitory shall be provided with an approved listed smoke detector installed in accordance with the manufacturer's recommendations and listing.

(2) On and after July 1, 1994, every dwelling and every dwelling unit within an apartment, house, condominium, and townhouse and every motel, hotel, and dormitory which was constructed prior to July 1, 1987, shall have installed an approved battery operated smoke detector which shall be maintained in good working order unless any such building is otherwise required to have a smoke detector system pursuant to Code Section 25-2-13.

There are many different brands of smoke alarms available on the market but they fall under two basic types: ionization and photoelectric.

Ionization alarms sound more quickly when a flaming, fast moving fire occurs. **Photoelectric alarms** are quicker at sensing smoldering, smoky fires. There are also combination smoke alarms that combine ionization and photoelectric into one unit, called dual sensor smoke alarms.

Because both ionization and photoelectric smoke alarms are better at detecting distinctly different yet potentially fatal fires, and because homeowners cannot predict what type of fire might start in a home, the USFA recommends the installation of both ionization and photoelectric or dual sensor smoke alarms. In addition to the basic types of alarms, there are alarms made to meet the needs of people with hearing disabilities. These alarms may use strobe lights that flash and/or vibrate to assist in alerting those who are unable to hear standard smoke alarms when they sound.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Installation

General guidelines for smoke alarm placement:

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(b) In dwellings, dwelling units, and other facilities listed in subsection (a) of this Code section, a smoke detector shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to each group of rooms used for sleeping purposes. Where the dwelling or dwelling unit contains more than one story, detectors are required on each story including cellars and basements, but not including uninhabitable attics;...

All corridors and common spaces shall be provided with smoke detectors in accordance with NFPA 72, *National Fire Alarm Code*, arranged to initiate the fire alarm such that it is audible in all sleeping areas. Detectors shall be located in corridors or hallway so there is a detector within 15 feet (4.6 m) of the wall and at least every 30 feet (9.1 m) thereafter. Where a building has more than one floor level, a detector shall be located at the top of each stair and inside each enclosure. (Refer to 3.3.184)

Exception No. 1: Detectors may be excluded from crawl spaces beneath the building and unused and unfinished attics.

Exception No. 2: Unenclosed corridors, passageways, balconies, colonnades, or other arrangements where one or more sides along the long dimension are fully or extensively open to the exterior at all times.”

For more information please visit: <http://w3.lexis-nexis.com/hottopics/gacode/default.asp> and go to Title 25, Chapter 2, Code Section 25-2-40.

Guidelines for connecting the smoke alarm:

Please contact your county fire office for information on connecting your smoke alarm.

Contact:

John W. Oxendine, Safety Fire Commissioner
Office of Insurance and Safety Fire Commissioner
Two Martin Luther King, Jr. Drive, West Tower, Suite 716
Atlanta, Georgia 30334
Tel: 404-656-2064
Fax: 404-657-6971
Email: firemarshal@sfm.ga.gov

Hawaii – Honolulu Fire Department

<http://www.honolulu.gov/HFD>

Regulations/Standards

According to the 1994 Uniform Building Code Section 310.9.1 adopted by Hawaii, residents are required to install smoke detectors in all new and renovated dwelling units.

Installation

General guidelines for smoke alarm placement:

Follow these simple rules when installing smoke detectors:

1. Install smoke detectors in each hallway on every floor of your home. Place smoke detectors near bedrooms.
2. Install one in every bedroom and sleeping area.
3. Install them on the ceiling at least four inches away from every wall or install them on a wall 4-12 inches below the ceiling.
4. Install them away from air vents or wind currents.
5. Do not install in the kitchen or bathroom to prevent false alarms from normal cooking or steam from bathing.
6. Learn to recognize the sound of the alarm.

For more information please visit: http://www.honolulu.gov/HFD/smoke_detectors.htm

Guidelines for connecting the smoke alarm:

Some smoke alarms are considered to be “hard-wired.” This means they are connected to the household electrical system and may or may not have battery backup. It’s important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Captain Brett Lomont
Community Relations -- Fire Prevention Bureau
Honolulu Fire Department
636 South Street, Third Floor
Honolulu, Hawaii 96813
Phone: 808 723-7168
Email: blomont@honolulu.gov

Idaho State Fire Marshal's Office

<http://www.doi.idaho.gov/sfm/firemars.aspx>

Regulations/Standards

According to Idaho's Fire code, listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with the provisions of this code and the household fire-warning equipment provisions of NFPA 72.

Installation

General guidelines for smoke alarm placement:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping 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.

Guidelines for connecting the smoke alarm:

There are separate regulations for connecting smoke alarms in new and existing homes. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

For existing building the requirements are: **907.3.2.3 Power source.** In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

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Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where 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 interconnection without the removal of interior finishes.

For more information please visit: <http://www2.iccsafe.org/states/idaho06/> or see the International Fire Code 2006.

Contact:

Mark Larson, State Fire Marshal
Division of Fire Marshal
Department of Insurance
700 West State Street
P.O. Box 83720
Boise, ID 83720-0043
Tel: (208) 334-4370
Fax: (208) 334-4375

Illinois Office of State Fire Marshal

<http://www.state.il.us/osfm/>

Regulations/Standards

In Illinois, by law, all buildings must be equipped with proper smoke alarms AND carbon monoxide detectors. Ionization, photoelectric, and dual units are acceptable.

For more information please visit: Office of the State Fire Marshal

Installation

General guidelines for smoke alarm placement:

Fire Safety Checklist begins at home

Test Your Smoke Alarm - Install a smoke alarm on every floor of your home and outside all sleeping areas. Test the smoke alarms once a month and change the batteries twice a year.

Plan Your Escape - Create and practice a home escape plan with your family.

Keep Matches and Lighters in a Safe Area - Always keep matches and lighters stored high in a locked cabinet or a locked box. Kids imitate adults, set a safe example.

Cook Safely - Never leave cooking unattended and keep the cooking area clutter free.

Give Space Heaters Space - Keep anything that can burn three feet away from portable heaters.

Extinguish Smoking Materials - Before emptying the contents of an ashtray into the trash, wet the contents.

Electrical Safety - Replace damaged electrical cords and repair or replace appliances that smell, smoke, or overheat.

For more information please visit: <http://www.state.il.us/osfm/PublicEducation/FireSafetyChecklist.htm>

Guidelines for connecting the smoke alarm:

Wired smoke alarms are acceptable as long as they have a back-up battery supply within each unit. All smoke alarms must be placed a maximum of 15 feet from sleeping quarters, at least one on each level (including basements). This is the same for both older and new construction.

For more information please visit: <http://www.state.il.us/osfm/>

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Contact:

Jessica C. Blackford, Public Education Representative

Illinois Office of the State Fire Marshal

Division of Management Services/Public Education

1035 Stevenson Dr.

Springfield, IL 62703

Tel: (217) 558-0324

Fax: (217) 558-0330

Email: SFM.PubEd@illinois.gov

Iowa State Fire Marshal

<http://www.dps.state.ia.us/fm/>

Regulations/Standards

The State Fire Marshal has adopted new administrative rules that will require all new residential construction to be equipped with dual sensor smoke detectors with the effective start date of April 1, 2010. Any single station smoke detector installed on or after April 1, 2010 in compliance with this subrule, including a replacement of an existing detector, shall be a dual sensor smoke detector. If sufficient dual sensor smoke detectors have been installed to comply with the requirements of this chapter, additional smoke detectors which may be other than dual sensor detectors may be installed.

During the rulemaking process, the definition of “Dual Sensor Smoke Detector” was changed. The final definition is “A dual sensor detector means a smoke detector which contains both an ionization sensor and a photoelectric sensor and which is designed to detect and trigger an alarm in response to smoke detected through either sensing device, or a smoke detector which has at least two sensors and which is listed to Underwriters Laboratory Standard 217, Single and Multiple Station Smoke Alarms, or to another standard approved by the state fire marshal.”

Approved single station smoke detectors shall be acceptable in all areas covered by this chapter, unless other fire warning equipment or materials are required by any provision of 661—Chapter 201, 202, or 205 or if a commercial grade smoke detection system has been installed.

Any single station smoke detector installed on or after April 1, 2010, in compliance with this subrule, including a replacement of an existing detector, shall be a dual sensor smoke detector. If sufficient dual sensor smoke detectors have been installed to comply with the requirements of this chapter, additional smoke detectors which may be other than dual sensor detectors may be installed.

For more information please visit: <http://www.dps.state.ia.us/fm/smokedetector.shtml>

Installation

Smoke detectors shall be located as follows:

- a. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
- b. In each room used for sleeping purposes.
- c. In each story within a dwelling unit, 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.

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Guidelines for connecting the smoke alarm:

Power source.

- a. In new buildings and additions constructed after July 1, 1991, required smoke detectors shall receive their primary power from the building wiring when such wiring is served from a commercial source. Wiring shall be permanent and without a disconnecting switch other than that required for over current protection. Smoke detectors may be solely battery operated when installed in existing buildings, or in buildings without commercial power, or in buildings which undergo alterations, repairs or additions subject to sub rule 210.3.2
- b. New and replacement smoke detectors installed after May 1, 1993, which receive their primary power from the building wiring shall be equipped with a battery backup.

For a copy of the actual administrative rule on smoke detectors, please visit:

<http://www.legis.state.ia.us/asp/ACODocs/DOCS/3-24-2010.661.210.pdf>

Contact:

Ray Reynolds, State Fire Marshal
215 East 7th Street
Des Moines, Iowa 50319
Tel: (515) 725-6145
Email: fminfo@dps.state.ia.us

Kansas State Fire Marshal's Office

<http://www.accesskansas.org/firemarshal/>

Regulations/Standards

The two most commonly recognized smoke detection technologies are ionization smoke detection and photoelectric smoke detection.

- Ionization smoke detection is generally more responsive to flaming fires.
How they work: Ionization-type smoke alarms have a small amount of radioactive material between two electrically charged plates, which ionizes the air and causes current to flow between the plates. When smoke enters the chamber, it disrupts the flow of ions, thus reducing the flow of current and activating the alarm.
- Photoelectric smoke detection is generally more responsive to fires that begin with a long period of smoldering (called "smoldering fires").
How they work: Photoelectric-type alarms aim a light source into a sensing chamber at an angle away from the sensor. Smoke enters the chamber, reflecting light onto the light sensor; triggering the alarm.

For each type of smoke alarm, the advantage it provides may be critical to life safety in some fire situations. Home fatal fires, day or night, include a large number of smoldering fires and a large number of flaming fires. You cannot predict the type of fire you may have in your home or when it will occur. Any smoke alarm technology, to be acceptable, must perform acceptably for both types of fires in order to provide early warning of fire at all times of the day or night and whether you are asleep or awake.

The best evidence has always indicated that either type of smoke alarm will provide sufficient time for escape for most people for most fires of either smoldering or flaming type. However, research is ongoing, and standards are living documents. If at any time, research points to a different conclusion, then that will lead to proposals for changes in the NFPA standard or the closely related Underwriters Laboratories standard for testing and approving smoke alarms. Both organizations currently have task groups looking at smoke alarm performance in the current home environment.

For best protection, it is recommended both (ionization and photoelectric) technologies be in homes. In addition to individual ionization and photoelectric alarms, combination alarms that include both technologies in a single device are available.

Installation

General guidelines for smoke alarm placement:

- Install smoke alarms on every level of your home, including the basement, making sure that there is an alarm outside every separate sleeping area. New homes are required to have a smoke alarm in every sleeping room and all smoke alarms must be interconnected.

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- If you sleep with bedroom doors closed, have a qualified electrician install interconnected smoke alarms in each room so that when one alarm sounds, they all sound.
- If you or someone in your home is deaf or hard of hearing, consider installing an alarm that combines flashing lights, vibration and/or sound.
- Mount smoke alarms high on walls or ceilings (remember, smoke rises). Ceiling mounted alarms should be installed at least four inches away from the nearest wall; wall-mounted alarms should be installed four to 12 inches away from the ceiling.
- If you have ceilings that are pitched, install the alarm near the ceiling's highest point.
- Don't install smoke alarms near windows, doors, or ducts where drafts might interfere with their operation.
- Never paint smoke alarms. Paint, stickers, or other decorations could keep the alarms from working.

Guidelines for connecting the smoke alarm:

Hard-wired smoke alarms operate on your household electrical current. They can be interconnected so that every alarm sounds regardless of the fire's location. This is an advantage in early warning, because it gives occupants extra time to escape if they are in one part of the home and a fire breaks out in another part. Alarms that are hard-wired should have battery backups in case of a power outage, and should be installed by a qualified electrician.

For more information please visit: <http://www.accesskansas.org/firemarshal/Prevention/preventionhome.htm>

Contact:

Brenda McNorton, Chief
Office of the State Fire Marshal
700 SW Jackson Street, Suite 600
Topeka, KS 66603
Tel: (785) 296-3401
Fax: (785) 296-0151
Email: webmaster@ksfm.state.ks.us

Louisiana Office of State Fire Marshal

<http://www.dps.louisiana.gov/sfm/>

Regulations/Standards

Louisiana requires [All single and two family dwellings constructed after January 1, 1992, shall contain approved smoke detectors.]

For more information please visit: <http://www.legis.state.la.us/lss/lss.asp?doc=97690>

* *Effective January 1, 2011*, all existing one and two-family dwellings at the time of sale or lease, shall contain, at a minimum, an operable ten-year, sealed lithium battery smoke detector.

The two most common types of household smoke alarms are known as **ionization** and **photoelectric**.

An **ionization** smoke alarm ionizes air in the sensing chamber by using a small amount of radioactive material creating a conductive environment between two charged electrodes also in the smoke alarm. Smoke entering the chamber decreases the air in the chamber; after this reaches a predetermined level the alarms sounds. Most smoke alarms in homes are ionization smoke alarms.

A **photoelectric** smoke alarm is made up of a light-sensitive sensor and a light-emitting diode. Smoke entering the chamber fractures the light beam, and the alarm will sound.

Neither alarm is necessarily more effective than the other. Each operates and responds differently to various conditions and principles. Some advantages to each are listed below, from information found online:

Ionization

- Fastest type to respond to flaming fires
- Lowest cost and most commonly sold
- Some models have a hush or temporary silence feature that allows silencing without removing the battery
- Some models are available with a long life battery

Photoelectric

- Fastest type to respond to slow smoldering fires and white or gray smoke
- Less prone to nuisance alarms from cooking

The U.S. Fire Administration (USFA) recommends that all homes or places where people sleep be equipped with either both ionization and photoelectric smoke alarms or dual sensor smoke alarms.

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Smoke alarm batteries must be changed; pick a time once a year that is easy for you to remember (birthday, seasonal time change, etc.) to change your batteries. If your smoke alarm begins to make a chirping noise, replace the batteries.

For more information please visit: <http://www.dps.louisiana.gov/sfm/>

Installation

General guidelines for smoke alarm placement:

- Install a working smoke alarm on every level of the home, outside sleeping areas, and inside bedrooms.
- Replace smoke alarm batteries at least annually, such as when resetting clocks in the fall or spring.
- Test all smoke alarms in your house once a month.
- Do not place a smoke alarm too close to a kitchen appliance or fireplace, as this may result in nuisance alarms.
- Avoid locating alarms near bathrooms, heating appliances, windows, or ceiling fans.
- Replace smoke alarms that are more than 10 years old. Smoke alarms don't last forever.
- Develop and practice a fire escape plan, because working smoke alarms and a fire escape plan will increase your protection in case of a fire.

Guidelines for connecting the smoke alarm:

In addition to the type of smoke detection sensor, ionization and photoelectric, used in the alarm, smoke alarms can be powered differently or be interconnected or single station alarms. Considering all of the available options will enable you to select the smoke alarms that may work best in your situation to effectively detect a fire.

Power

Smoke alarms can be connected to the home's wiring system, battery powered, or a combination of both. Smoke alarms most often fail to alarm because of missing, drained, or disconnected batteries. A good reminder to replace the batteries in smoke alarms is in the fall or spring when resetting the clocks. For older homes, battery-only smoke alarms are the simplest to install. For homes under construction, smoke alarms are typically connected to the household wiring (hard-wired). Smoke alarms connected to household wiring with battery back-up will provide protection even during power outages. Consider upgrading smoke alarms to hard-wired with battery back-up during a renovation or remodeling project.

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Contact:

Chief H. Butch Browning, Jr., State Fire Marshal
Department of Public Safety and Corrections
Office of the State Fire Marshal
8181 Independence Blvd.
Baton Rouge, Louisiana 70806
Email: butch.browning@dps.la.gov

Chief Dan Wallis, Deputy Assistant Fire Marshal Enforcement/Emergency Services
Tel: 225-925-7048
Fax: 225-925-4593
Email: dan.wallis@dps.la.gov

Maine Office of State Fire Marshal

<http://www.maine.gov/dps/fmo/index.htm>

Regulations/Standards

The owner shall properly install, or cause to be properly installed, smoke detectors in accordance with the National Electric Code and the manufacturer's requirements. In single-family dwellings, at least one smoke detector, which may be photoelectric, ionization or a combination of both, must be installed in each area within, or giving access to, bedrooms. These smoke detectors may be powered by the electrical service in the dwelling, by battery or by a combination of both. Any smoke detector located within 20 feet of a kitchen or a bathroom containing a tub or shower must be a photoelectric-type smoke detector.

After October 31, 2009, smoke detectors installed in a multifamily building or a newly constructed single-family dwelling must be powered both by the electrical service in the building or dwelling and by battery. (NEW)2009

Installation

General guidelines for smoke alarm placement:

The owner shall install, or cause to be installed, not less than one approved smoke detector upon or near the ceiling in areas within, or giving access to, bedrooms in:

- Any single-family dwelling, the construction of which is completed after the effective date of this section; [1985, c. 190, (AMD).]
- Each apartment in any building of multifamily occupancy [1985, c. 190, (AMD).]
- Any addition to or restoration of an existing single-family dwelling which adds at least one bedroom to the dwelling unit and the construction of which is completed after the effective date of this paragraph; and [1985, c. 190, (NEW).]
- Any conversion of a building to a single-family dwelling after the effective date of this paragraph. [1985, c. 190, (NEW).]

For more information please visit: <http://www.mainelegislature.org/legis/statutes/25/title25sec2464.html>

Guidelines for connecting the smoke alarm:

Replace all smoke alarms, including alarms that use ten-year batteries and hard-wired alarms, when they are ten years old or sooner if they do not respond properly when tested.

For more information please visit: <http://www.maine.gov/dps/fmo/documents/MARCO.pdf>

A person who, after October 31, 2009, acquires by sale or exchange a single-family dwelling or a multi-apartment building shall certify at the closing of the transaction that the dwelling or multi-apartment building is provided with smoke detectors in accordance with this section. This certification must be signed and dated by the purchaser.

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A person may not have a claim for relief against a property owner, a property purchaser, an authorized agent of a property owner or purchaser, a person in possession of real property or a smoke detector installer for any damages resulting from the proper operation, maintenance or effectiveness of a smoke detector.

Contact:

John C. Dean, State Fire Marshal
State of Maine Department of Public Safety
Office of State Fire Marshal
52 State House Station
Augusta, ME 04333-0052
Tel: 207-626-3870
Fax: 207-287-6251

Nelson Collins, Assistant Fire Marshal
Tel: 207-626-3887
Email: nelson.e.collins@maine.gov

Maryland Office of the State Fire Marshal

<http://www.firemarshal.state.md.us/>

Regulations/Standards

According to Maryland law, at least one operating Smoke Alarm must be installed in each residential occupancy including those constructed prior to July 1, 1975. The **occupant** of the home is responsible for the installation, maintenance and operation of the detector in 1, 2, and 3 family dwellings.

If a home was constructed between July 1, 1975 and January 1, 1989, at least one electric powered Smoke Alarm, permanently wired, is required to be installed in the sleeping area at the time of construction.

Homes or residential dwellings constructed between January 1, 1989 and July 1, 1990 are required by law to have Smoke Alarms installed outside of each separate sleeping area in the immediate vicinity of the bedrooms **and** on each additional story of the home, including the basement but excluding crawl spaces and unfinished attics. All Smoke Alarms in these multi-level residential properties must be electric powered and must be interconnected to alarm simultaneously.

For residential properties constructed after July 1, 1990, State law requires that these properties be protected by Smoke Alarms that operate by both electricity and battery. The only exemptions to this requirement are dwellings that are not provided with electric service.

Choosing a Home Smoke Alarm

Check for the following:

- The Smoke Alarm must display the marking of a recognized independent testing laboratory such as Underwriters Lab (UL) etc. and be listed and approved for sale, installation and use in Maryland by the Office of the State Fire Marshal.
- Warning Signal - It warns you when bulbs or batteries need replacing.
- Easily replaceable batteries and bulb. Make sure batteries and bulbs are readily available for purchase and easy to install.
- Alarm Volume - The Smoke Alarm must be loud enough (85 decibel or louder) to wake a sleeping person behind a closed door. Special alarms are available for hard of hearing persons.

Installation

General guidelines for smoke alarm placement:

Where Should You Install Smoke Alarms?

Where you install Smoke Alarms depends on the size and layout of your home, and on where the members of your family sleep.

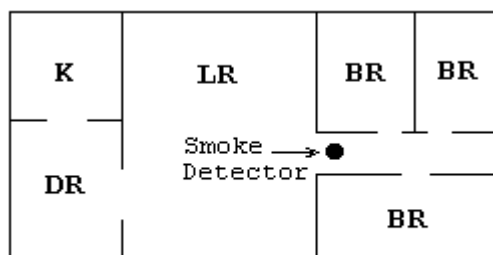
(Continued)

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Since the primary job of a Smoke Alarm is to awaken sleeping persons and warn them of urgent danger, the most critical requirement is to put your alarm as close as possible to the bedrooms. If two sleeping areas are separated by any significant distance, each should have its own alarm.

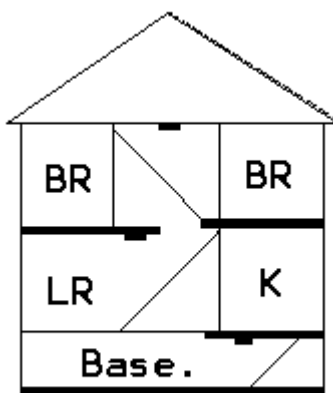
Next consider the probable path along which smoke would travel in your home. In single level homes, this usually means placing the alarm in the hallway off which the bedroom doors open. In a house where the bedrooms are upstairs, the alarm should be near the top of the stairs to the bedrooms.

The simplest rule for locating the first Smoke Alarm in your home should be between the bedrooms and the rest of the house, but closer to the bedrooms.



Single Level

If you are installing multiple alarms, and you've put one near each sleeping area, it is a good idea to make certain there is one on each level of the house. The basement ceiling, near the steps to the rest of the house, is another good location.



Multi-Level

Once The Proper Location Has Been Selected - What's The Right Position For The Smoke Alarm?

(Continued)

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Check the instructions that come with your detector. Most will recommend installing Smoke Alarms on the ceiling, or on the walls between 6 and 12 inches below the ceiling. This not only takes advantage of the fact that most smoke rises, but puts the detector safely above accidental bumps and the inquiring hands of children.

Don't put the alarm *within six inches* of where the wall and ceiling meet, on either surface. This area has proven to be a "dead air" space that receives little air circulation.

On the other hand, excessive "clean" air flow across an alarm can keep smoke filled air from reaching the smoke chamber of the alarm. Avoid putting alarms too close to heating ducts and cold air returns.

Also avoid areas where nominal amounts of smoke may normally be present, such as kitchens or other cooking spaces, furnace rooms or near fireplaces or wood burning stoves.

Maintenance Is Important!

Your Smoke Alarm must be maintained properly to provide you and your family with protection.

How?

- Replace batteries and bulbs according to the manufacturer's instructions. Usually, the battery will last approximately six (6) months to one (1) year before needing replacement. Battery operated Smoke Alarms do require somewhat more maintenance, since batteries must be replaced at least once a year.
- Vacuum the grillwork of your alarm to remove dust, dirt, bugs and other debris which may prevent the alarm from working properly.
- Test your alarm periodically according to the manufacturer's instructions.

Guidelines for connecting the smoke alarm:

- Power Source - Battery powered models are easy to install, but batteries need regular checking and replacement. Electric powered models may require installation by a licensed electrician but need less attention.

For more information please visit: <http://www.firemarshal.state.md.us/>

Contact:

William E. Barnard, State Fire Marshal
Department of State Police
Office of the State Fire Marshal
1201 Reisterstown Road
Pikesville, MD 21208
Tel: 410-653-8980 / 800-525-3124
Fax: 410-653-8988

Dennis Gentzel
Tel: 410-653-8983
Email: dgentzel@mdsp.com

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Massachusetts Office of the State Fire Marshal

<http://www.mass.gov/?pageID=eopssubtopic&L=5&L0=Home&L1=Public+Safety+Agencies&L2=Massachusetts+Department+of+Fire+Services&L3=Department+of+Fire+Services&L4=Office+of+the+State+Fire+Marshal&id=Eeops>

Regulations/Standards

In general, Massachusetts requires all residents to install smoke detectors in their home regardless of date of construction. As of 1997 homes built or substantially modified in the Commonwealth were required to have a photoelectric smoke alarm within 20 ft. of kitchens or bathrooms. As of 2008, all new or substantially modified residences built in the Commonwealth are required to have photoelectric smoke alarms only and can also use dual (photoelectric/ionization) detection if located beyond 20 ft. of a kitchen or bathroom. . It should be noted that effective April 5, 2010, all homes sold or transferred in Massachusetts which were built prior to 1975 and have not undergone construction or substantial modification subject to the provisions of the State Building Code will be required to have a photoelectric smoke only detector within 20 ft of a kitchen or bathroom containing a tub or shower. Areas outside of the 20 ft. range are required to utilize dual technology (photoelectric and ionization technology) by means of a dual detector or by separate detectors.

Installation/Location Requirements

General guidelines for smoke alarm placement:

Typical one- and two-family residences built before January 1, 1975:

Smoke detectors are required as follows:

- On every habitable level of the residence.
- On the ceiling at the base of each stairway.
- On the ceiling outside of each separate sleeping area.

Typical one- and two-family residences permitted between 1975 and August 27, 1997:

Smoke detectors are required as follows:

- One smoke detector on every habitable level of the residence.
- One smoke detector on the ceiling at the base of each stairway.
- One smoke detector on the ceiling outside of each separate sleeping area.
- A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.

Typical one- and two-family residences permitted after August 27, 1997:

Smoke detectors are required as follows:

- One smoke detector on every habitable level of the residence.
- One smoke detector at the base of each stairway.
- One smoke detector outside of each separate sleeping area.

(Continued)

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- One smoke detector inside every bedroom.
- A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.

Typical one- and two-family residences permitted on or after January 1, 2008:

Smoke detectors are required as follows:

- One smoke detector on every habitable level of the residence;
- One smoke detector at the base of each stairway;
- One smoke detector outside of each separate sleeping area;
- One smoke detector inside every bedroom;
- A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.

Guidelines for connecting the smoke alarm:**Typical one- and two-family residences built before January 1, 1975:**

- The smoke detectors may either be battery powered, or hardwired.
- If the smoke detector is located within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector will be required to be a photoelectric detector only.
- If the smoke detector is outside of 20 feet of a kitchen or a bathroom (containing a bathtub or shower) you must utilize either:
- A dual detector (containing both ionization and photoelectric technologies); **OR**
- Two separate detectors (one photoelectric and one ionization).

Typical one- and two-family residences permitted between 1975 and August 27, 1997:

- Smoke detectors are required to be hardwired interconnected.

Typical one- and two-family residences permitted after August 27, 1997:

- Must have hardwired and interconnected smoke detectors with battery backup.
- If the smoke detector is within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector is required to be a photoelectric detector.

Typical one- and two-family residences permitted on or after January 1, 2008:

- Must be hardwired and interconnected smoke detectors with battery backup.
- If the smoke detector is within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector is required to be a photoelectric detector.
- If the smoke detector is outside of 20 feet of a kitchen or a bathroom (containing a bathtub or shower), the smoke detector is required to be either a photoelectric detector or a dual detector (containing both ionization and photoelectric technologies).

(Continued)

- Heat detectors are required as follows:
- Must have a single heat detector in any garage attached to or under the residence.
- Must be hardwired and interconnected with or without battery backup to the existing smoke detection system.

For more information please visit:

http://www.mass.gov/?pageID=eopsterminal&L=8&L0=Home&L1=Public+Safety+Agencies&L2=Massachusetts+Department+of+Fire+Services&L3=Department+of+Fire+Services&L4=Office+of+the+State+Fire+Marshal&L5=Fire+Prevention&L6=Office+of+the+State+Fire+Marshal+Advisories&L7=2004+Advisories&sid=Eeops&b=terminalcontent&f=dfs_osfm_fire_prevention_adv_av_smoke_heat_detector&csid=Eeops

Contact:

Stephen D. Coan, State Fire Marshal
P.O. Box 1025 State Road
Stow, MA 01775
Tel: (978) 567-3111
Email: Stephen.Coan@state.ma.us

Timothee Rodrique, Director
Division of Fire Safety
Tel: 978-567-3301
Email: Timothee.Rodrique@state.ma.us

Michigan State Fire Marshal

http://www.michigan.gov/dleg/0,1607,7-154-28077_42271_42321---,00.html

Regulations/Standards

The Stille-DeRossett-Hale Single State Construction Code Act, 1972 PA 230, contains the construction code standards for Michigan. PA 230 requires the adoption of nationally recognized codes which require smoke detectors/alarms for various types of buildings. Additionally, Michigan law requires smoke alarms in all existing residential occupancy buildings built prior to November 6, 1974.

Residents can use the following guidelines to choose, properly install, and connect smoke alarms. Please contact your fire marshal to learn the general guidelines for smoke alarm placement and connection.

For a list of Regions/Field Offices please visit:

http://www.michigan.gov/documents/cis/Fire_Marshal_Division_Region_Map_01-10-07_182805_7.pdf

There are many different brands of smoke alarms available on the market but they fall under two basic types: ionization and photoelectric.

Ionization alarms sound more quickly when a flaming, fast moving fire occurs. **Photoelectric alarms** are quicker at sensing smoldering, smoky fires. There are also combination smoke alarms that combine ionization and photoelectric into one unit, called **dual sensor smoke alarms**.

Because both ionization and photoelectric smoke alarms are better at detecting distinctly different yet potentially fatal fires, and because homeowners cannot predict what type of fire might start in a home, the USFA recommends the installation of both ionization and photoelectric or dual sensor smoke alarms.

In addition to the basic types of alarms, there are alarms made to meet the needs of people with hearing disabilities. These alarms may use strobe lights that flash and/or vibrate to assist in alerting those who are unable to hear standard smoke alarms when they sound.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

If your smoke alarms are hard wired—that is, wired into the electrical system—you will need to have a qualified electrician do the initial installation or install replacements. Owners of a single family residence who reside in the home may do their own wiring. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed.

(Continued)

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For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Guidelines for connecting the smoke alarm:

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

State Fire Marshal

P.O. Box 30700

Lansing, MI 48909

Tel: (517) 241-8847

Fax: (517) 335-4061

Email: statefiremarshal@michigan.gov

Tony Sanflipo

Assistant Deputy Fire Marshal

Minnesota State Fire Marshal's Office

<http://www.dps.state.mn.us/fmarshal/fmarshal.html>

Regulations/Standards

According to the Minnesota Statute 299F.362, every dwelling and dwelling unit must be provided with a smoke detector that meets the requirements of the Minnesota State Fire Code. This includes single family homes, townhouses, apartment, hotels (containing six or more guest rooms), lodging houses (containing five or less guest rooms), and similar occupancies.

Installation

General guidelines for smoke alarm placement:

The Minnesota State Fire Code Requirements:

- Smoke alarms installed prior to March 31, 2003. Smoke alarms must be installed in hallways or areas which provide access to each separate sleeping area.
- Smoke alarms installed on or after March 31, 2003. A smoke alarms must be installed in each sleeping room in addition to a point centrally located in the corridor or area providing access to each separate sleeping area. Where more than one smoke alarm is required to be installed in a single family home, the smoke alarms must be interconnected so that the activation of one alarm will activate all the alarms in the home.
- For all smoke alarms installed prior to July 10, 2007. If any residential structure had code compliant smoke alarms installed prior to the current fire code adoption, then those smoke alarms are still permitted.
- For all smoke alarms installed on or after July 10, 2007. Any residential structure installing smoke alarms after this date must install the smoke alarms in all sleeping rooms, in all hallways leading to the exit and on each floor.

Guidelines for connecting the smoke alarm:

Smoke alarms can be electrically connected, battery powered, or a combination of both. This combination of power sources and a pause feature to reduce nuisance alarms are highly recommended. In new construction, smoke detectors must be directly connected to the dwelling's central power source. In homes constructed prior to August 1, 1989; smoke alarms may be battery powered. In homes constructed on or after August 1, 1989; smoke alarms must receive their power from the home's permanent primary wiring without a disconnecting switch and be equipped with a battery backup.

For more information please visit:

<http://www.dps.state.mn.us/fmarshal/PublicEducation/SmokeAlarmRequirements.pdf>

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Contact:

Robert Dahm, Chief Deputy State Fire Marshal
Minnesota State Fire Marshal Division
444 Cedar St., Suite 145
St. Paul, MN 55101-5145
Tel: 651-201-7200
Fax: 651-215-0525
Email: Robert.Dahm@state.mn.us

Mississippi State Fire Marshal's Office

http://www.mid.state.ms.us/htm_files/sfiremars.htm

Regulations/Standards

The state requirements for residential smoke alarms are unavailable at this time. However, the following guidelines will help keep your family safe.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

Additional information:

The State Fire Marshal's Office received a 2007 FP&S grant for a statewide smoke alarm installation program. For that program, ionization alarms were purchased with 10-year batteries. These alarms should be installed outside each sleeping area and on every level. The target audience is low income, seniors, children under age 14, and disabled persons.

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed. For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

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Contact:

Tammy Peavy, Director
Mississippi Insurance Department
Fire Safety Education
P.O. Box 79
Jackson, MS 39205
Tel: 601-359-1061
Fax: 601-359-1076
Email: tammy.peavy@mid.state.ms.us

Missouri State Fire Marshal's Office

<http://www.dfs.dps.mo.gov/>

Regulations/Standards

Missouri has no statewide fire code. However, codes are adopted and enforced at the local level by cities, counties or fire districts. When asked for guidance on smoke detectors, we generally recommend the dual sensor type and follow the NFPA guidelines for placement, but again, these are only recommendations since we have no enforcement authority.

Please consider the guidelines below to help keep your family safe.

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed. For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Greg Carrell, Asst. State Fire Marshal
Department of Public Safety
Division of Fire Safety
P.O. Box 844
Jefferson City, MO 65102
Tel: 573-751-2930
Fax: 573-751-5710
Email: Greg.Carrell@dfs.dps.mo.gov/firesafe@dfs.dps.mo.gov

Montana State Fire Marshal's Office

<http://www.doj.mt.gov/enforcement/fireprevention/default.asp>

Regulations/Standards

According to the fire marshal, Montana does require residents to use a certain type of smoke detector. Placement is in every bedroom and on each floor. Any rental unit is required by law to have a working detector upon a tenants moving in.

Installation

General guidelines for smoke alarm placement:

- **Install smoke alarms in your home** if you don't already have them. An alarm located between the sleeping area and the living area offers a minimum amount of protection. For maximum protection, install an alarm in every room, on every level of your home.
- **Replace smoke alarms periodically.** Smoke alarms lose sensitivity over time and should be replaced every 10 years.
- **Check alarms at least once a month.** Press the test button to check your alarm and, if it doesn't sound, replace the batteries. If this doesn't solve the problem, replace the unit. Nine-volt batteries should be changed at least twice a year.
- **Periodically clean smoke alarms** using a vacuum attachment. This removes particles that could interfere with the alarm's proper operation.
- **Replace "chirping" alarms.** This sound indicates that the batteries are weak and need to be replaced.

Guidelines for connecting the smoke alarm:

The building code has required smoke detectors for a number of years. Existing homes are not required until a sale of the home is made. There are numerous programs for giving detectors away by local fire depts. Hard wire is required only in new homes.

For more information please visit: <http://www.doj.mt.gov/enforcement/fireprevention/safetyarticles/200604.asp>

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Contact:

Allen Lorenz, State Fire Marshal
Fire Prevention and Investigation Section
Department of Justice
2225 11th Avenue
P.O. Box 201415
Helena, MT 59620-1415
Tel: 406-444-2050
Fax: 406-444-2759
Email: alorenz@mt.gov

Nebraska State Fire Marshal's Office

<http://www.sfm.state.ne.us/>

Regulations/Standards

81-5,142 Smoke detectors; installation required; when. (1) Every dwelling unit within a dwelling or apartment house constructed or remodeled on or after January 1, 1982, every guest room in a lodging house or hotel constructed or remodeled on or after January 1, 1982, and every dormitory constructed or remodeled on or after January 1, 1982, shall be provided with one or more operating smoke detectors meeting the requirements of the State Fire Marshal's rules and regulations. This is only a part of the statute.

For the full statute please go to: <http://www.legislature.ne.gov/laws/statutes.php?statute=s8105142000>.

Installation

General guidelines for smoke alarm placement:

81-5,143 Smoke detector; number; location; operation. The detector shall be mounted in accordance with the rules and regulations regarding the number and location of smoke detectors adopted by the State Fire Marshal. When activated, the detector shall provide an alarm in the dwelling unit, guest room, dormitory, or mobile home.

You should also include 81-5, 144 which covers rental properties which would also be classified as residential.

To review the statute, visit <http://www.legislature.ne.gov/laws/statutes.php?statute=s8105144000>.

Guidelines for connecting the smoke alarm:

81-5,145 Political subdivisions; smoke detector standards; restrictions. Sections 81-5,132 to 81-5,146 shall prohibit a political subdivision from adopting standards less stringent than those provided in sections 81-5,132 to 81-5,146 and rules and regulations adopted under sections 81-5,132 to 81-5,146, except that, as to buildings constructed on or after January 1, 1982, such political subdivision shall require that smoke detectors be attached to a centralized electrical power source within the building which may be equipped with a battery as an alternate power source. No political subdivision shall require that a smoke detector be attached to a centralized power source within a building constructed prior to January 1, 1982.

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For more information please visit: <http://www.legislature.ne.gov/laws/browse-chapters.php?chapter=81>
(Statues 81-5, 142-146)

Contact:

John Falgione, State Fire Marshal
Department of Safety
246 South 14th Street
Lincoln, NE 68508-1804
Tel: 402-471-2027
Fax: 402-471-3118

Ray Nance
Tel: 402-471-3183
Email: ray.nance@nebraska.gov

Nevada State Fire Marshal's Office

<http://fire.state.nv.us/index.shtml>

Regulations/Standards

The State of Nevada does have codes and regulations which require the installation of smoke alarms in residential occupancies. Local government is considered to be the Authority Having Jurisdiction (AHJ) for the authority to require and to enforce the requirements for single family dwellings. In addition, the following smoke detector tips are provided below to help you keep your family safe.

Installation

General guidelines for smoke alarm placement:

Place a smoke alarm on every level of your home and outside bedrooms. If you keep your bedroom doors closed, place a smoke alarm in each bedroom.

- Check smoke alarms monthly by pushing the test button. If you cannot reach the button easily, use a broom handle.
- Change the batteries in your alarms at least once a year – perhaps when you change your clocks for Daylight Savings Time.
- Teach children what the smoke alarm sounds like and what to do – leave the building immediately by crawling low under the smoke – when they hear it sound.
- If cooking smoke sets off the alarm, do not disable it. Turn on the range fan, open a window, or wave a towel near the alarm.
- Do not remove the batteries to put in other appliances such as personal stereos or games.
- Smoke alarms wear out over time. Replace yours if it is 10 years old or more.
- Keep smoke alarms clean. Dust and debris can interfere with their operation. Vacuum over and around your smoke alarm regularly.
- Consider installing a 10-year lithium battery-powered smoke alarm, which is sealed so it cannot be tampered with or opened.

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Guidelines for connecting the smoke alarm:

Hard-wired smoke alarms with battery back-ups need to be tested monthly and batteries replaced yearly.

For more information please visit:

http://www.fpaneveda.org/sections/pubs_docs/docs/safety_docs/Smoke%20Alarms%20Life%20Safety%20Tips.pdf

Contact:

James Wright, State Fire Marshal

Office of the State Fire Marshal

107 Jacobsen Way

Carson City, Nevada 89711

Tel: (775) 684-7500

Fax: (775) 684-7507

Email: sfm@dps.state.nv.us

New Hampshire Office of the State Fire Marshal

<http://www.nh.gov/safety/divisions/firesafety/>

Regulations/Standards

Smoke alarms in residences are of two general types: ionization and photoelectric. Ionization alarms monitor the level of ions (electrically charged particles) in the air. They are generally sensitive to small smoke particles, which are produced by flaming fires. If present, these particles conduct a current within the alarm's chamber, activating the device. Photoelectric smoke alarms use beams of light and sensors to detect the presence of larger smoke particles (produced by smoldering fires), which interrupt the light beams and trigger the alarm.

Installation

General guidelines for smoke alarm placement:

In New One & Two Family Dwellings Smoke alarms shall be:

- Installed in all sleeping rooms in other than existing one- and two-family dwellings.
- Outside of each separate sleeping area, in the immediate vicinity of the sleeping rooms.
- On Each level of the dwelling unit, including basements.
- They must be *interconnected*.

Guidelines for connecting the smoke alarm:

- Each unit contained in a multi-unit dwelling shall be equipped with automatic fire warning devices. On every floor level and in each common stairway and in each common hallway of a multi-unit dwelling, there shall be an automatic warning device.
- Every single family dwelling which is built or substantially rehabilitated after January 1, 1982, shall be equipped with an automatic fire warning device.
- Every rental unit as defined in RSA 153:1 shall be equipped with at least one automatic fire warning device. An automatic fire warning device shall be located in each hallway or area which is adjacent to a sleeping area. The provisions of this paragraph shall be in addition to any requirements under paragraph II. The owner of the rental unit shall be responsible for maintaining the automatic fire warning device in a suitable condition.

(Continued)

For more information please visit: http://www.nh.gov/safety/divisions/firesafety/pub_ed/Smoke_Detection.html

Contact:

NH Department of Safety

Division of Fire Safety

33 Hazen Drive

Concord, NH 03305

Tel: (603) 223-4289

Fax: (603) 223-4294

Email: fmo@dos.nh.gov

New Jersey Office of the State Fire Marshal

<http://www.nj.gov/dca/dfs/>

Regulations/Standards

New construction – hard-wired A/C powered smoke alarms with battery back-up connected to an alarm panel and central station monitoring. The smoke alarms are required to be installed as follows; one in every sleeping room, one located outside of each sleeping area and on each additional floor including basements, but not crawl spaces.

Existing construction – at the time of re-sale rental or anytime a building permit is required, battery operated smoke detectors are required to be installed only each level of the dwelling.

Otherwise residents may install battery powered alarms whenever they like. There is no restriction on the type of detector/alarm installed.

For more information please contact: The Department of Community Affairs, Code Assistance Unit for new installations at 609-984-7609 or The Division of Fire Safety, Bureau of Fire Code Enforcement for re-sale or re-occupancy at 609-633-6132.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms outside each separate sleeping area and on every floor of your home, including the basement.

- Working smoke detectors can reduce the risk of death in a residential fire by 40-50%.
- The best smoke detectors are those with lithium-powered batteries and hush buttons. A lithium-powered battery can last up to 10 years, and a hush button allows you to quickly stop nuisance alarms that are caused by oven smoke, burnt toast, prolonged cooking, etc.
- If 10-year, long-life smoke detectors are not available, install smoke detectors that use regular batteries, preferably alkaline, and replace the batteries as necessary - and at least once a year. (A useful tip to help you remember: in the fall, when you change your clocks to standard time, change your batteries as well!)
- Test smoke detectors every month to make sure they are in proper working condition.

For more information please visit: <http://www.nj.gov/dca/dfs/prevfire.shtml>

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Guidelines for connecting the smoke alarm:

New construction – hard-wired smoke alarms with battery back-up connected to an alarm panel and central station monitoring.

The owner can disconnect the central station monitoring but the remainder of the system must remain intact and working.

Existing construction – at the time of re-sale or rental, battery operated smoke detectors... **(Same as above)**

For more information please contact: The Department of Community Affairs, Code Assistance Unit for new home installations or anytime a building permit is required at 609-984-7609 or The Division of Fire Safety, Bureau of Fire Code Enforcement for re-sale or re-occupancy at 609-633-6132.

Contact:

New Jersey Division of Fire Safety
Bureau of Fire Code Enforcement
Unit
101 S Broad St, 7th Floor
P O Box 809
Trenton NJ 08625-0809
Tel: 609-633-6741
Fax: 609-633-6330

New Jersey Department of Community Affairs
Division of Codes and Standards, Code Assistance
101 S Broad St, 6th Floor
P O Box 802
Trenton NJ 08625-0802
Tel: 609-984-7609
Fax: 609-984-7717

New Mexico State Fire Marshal

www.nmprc.state.nm.us/sfm.htm

Regulations/Standards

New Mexico only enforces smoke alarm requirements for apartments. There is no regulation for one and multi-family dwellings. As for new constructions, the Construction Industries Division enforces smoke alarm requirements. However, the following guidelines will help you keep your family safe.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed.

For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Ray Wolf
Deputy Fire Marshal/Fire Code Enforcement
P.E.R.A. Building Room 413
1120 Paseo De Peralta
Santa Fe, NM 87501
Tel: (505)476-0186
Fax: (505) 476-0100

New York State Office of Fire Prevention & Control

<http://www.dos.state.ny.us/fire/firewww.html>

Regulations/Standards

Smoke alarms sense smoke and/or heat and sound an alarm to warn residents of a fire. Almost every day a smoke alarm saves somebody's life. A smoke alarm can cut your risk of dying in a home fire nearly in half.

Smoke Alarm Types

Be sure the smoke alarms you buy carry the label of a certified, independent testing lab. This tells you that a representative sample of the smoke alarm has been evaluated and meets nationally recognized requirements. Several types of alarms are available. Some are battery powered, others are powered by the household electrical current and some combine both. All will offer protection provided they are installed and maintained properly. Smoke alarms are readily available at hardware stores.

Installation

General guidelines for smoke alarm placement:

Smoke Alarm Maintenance

- **INSTALL** smoke alarms near each sleeping area and on each level of your home. Read and follow the manufacturer's installation and maintenance instructions.
- **TEST** your smoke alarm each month. This ensures it is working and familiarizes your family to the alarm sound.
- **MAINTAIN** batteries by replacing semi-annually. A good practice is to change them when you change your clocks. A "chirping" sound indicates that the battery is low and needs to be replaced. Clean your smoke alarm using a vacuum and/or dust brush without removing the alarm's cover.
- **REPLACE** any smoke alarm that is more than 10 years old.

Guidelines for connecting the smoke alarm:

Wireless: Emerging technology offers the ability to have your smoke detectors interconnected so they will all sound when one activates—all without wires running between them. This is a great way to ensure that you will hear the alarm should one of the detectors in your home activate, wherever you may be in the house.

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Lithium powered: Lithium powered smoke alarms have non-removable power cells that last for ten years and provide a solution to the problem of missing or dead batteries in smoke alarms.

For more information please visit:

<http://www.dos.state.ny.us/fire/pdfs/Fire%20Prevention%20Bureau/Smokealarms.pdf>

Contact:

Office of Fire Prevention & Control

99 Washington Avenue, Suite 500

Albany, NY 12231-0001

Tel: (518) 474-6746

Fax: (518) 474-3240

E-mail: [fire@dos.state.ny.us/](mailto:fire@dos.state.ny.us)

codes@dos.state.ny.us

North Carolina Office of the State Fire Marshal

<http://www.ncdoi.com/OSFM/>

Regulations/Standards

Since 1999 newly constructed one and two family homes, apartments, condominiums and townhomes are required to have a minimum of one 110 volt hard-wired, battery backup smoke detector installed in each sleeping room, outside each sleeping room and on all habitable floor levels.

One and two family dwellings, apartments, condominiums and townhomes constructed from 1975-1998 are required to have a minimum of one 110 volt hard-wired smoke detector installed outside of each sleeping room(s) and on all habitable floor levels.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed.

For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

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For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Tim Bradley, State Fire Marshal

Richard Strickland
Department of Insurance & State Fire Marshal
322 Chapanoke Rd
Raleigh, NC 27603
Mailing Address: 1202 Mail Service Center
Raleigh, NC 27699-1202
Tel: (919) 661-5880
Fax: (919) 661-3193
Email: Richard.Strickland@ncdoi.gov

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North Dakota Fire Marshal's Office

<http://www.ag.nd.gov/FM/FM.htm>

Regulations/Standards

Smoke alarms are required to be installed in rental and new single-multi-family dwellings. Existing homes must maintain a working smoke alarm. The state of North Dakota doesn't require a specific type of alarm, but residents can choose between photoelectric and ionization.

Installation

General guidelines for smoke alarm placement:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping 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.

Guidelines for connecting the smoke alarm:

There are separate regulations for connecting smoke alarms in new and existing homes. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

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For existing building the requirements are: **907.3.2.3 Power source.** In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where 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 interconnection without the removal of interior finishes.

For more information please see: The International Fire Code, 2006

Contact:

Raymond Lambert, Fire Marshal
PO Box 1054
Bismarck, ND 58502
Tel: 701 328-5555
Fax: 701-328-5510

Ohio Division of the State Fire Marshal's Office

<http://www.com.ohio.gov/fire/>

Regulations/Standards

The Ohio Fire Code (OFC) has no retroactive requirement to install smoke detectors in single family dwelling units. There are some retroactive smoke detector requirements but they are only applicable to those "R" residential occupancies specifically referenced in the code. One, two and three family dwellings are not one of the "R" residential occupancies referenced in the OFC.

For new construction, Ohio has adopted the 2006 Residential Code of Ohio. It does contain specific requirements for smoke detector installations, in all sleeping rooms, outside each separate sleeping area and on each level of the home.

Installation

General guidelines for smoke alarm placement:

1. Test your smoke detector monthly - make the first Tuesday of the month test day.
2. Change the batteries in you smoke detectors twice yearly. (Change Your Clock, Change Your Battery)
3. Install a smoke detector on each level of you home and inside sleeping areas (New homes only).
4. Have a Home fire escape plan and practice it - tonight.
5. Sleep with your bedroom doors closed.
6. Have a working smoke detector on every level of your home and inside all occupied sleeping areas (New homes only).

For more information please visit: <http://www.com.state.oh.us/sfm/pub/4-02Detector.pdf>

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed. For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you.

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Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be “hard-wired.” This means they are connected to the household electrical system and may or may not have battery backup. It’s important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Robert R. Rielage, State Fire Marshal
8895 East Main Street
Reynoldsburg, Ohio 43068
Telephone: (614) 752-8200
Fax: (614) 752-7213
Email: websfm@com.state.oh.us

Dennis McCann, Staff Engineer
Code Enforcement Bureau/Division of State Fire Marshal
Clyde.McCann@com.state.oh.us

Oklahoma State Fire Marshal

<http://www.firemar.state.ok.us/>

Regulations/Standards

A. Any person, partnership, corporation, organization, the state, or city, town, county, or other subdivision of this state, owning a building or structure used as a hospital, church, theater, hotel, motel, apartment house, rooming house, dormitory, rest home, nursing home, day nursery, convalescent home, auditorium, or child care institution, existing or constructed in the State of Oklahoma, shall install in such building or structure a smoke detector or detectors in accordance with the nationally recognized codes, standards, or practices adopted by the State Fire Marshal Commission to safeguard life and property from the hazards of smoke and fire.

Installation

General guidelines for smoke alarm placement:

B. For the purpose of this section, the term smoke detector means a device which is:

1. Designed to detect visible or invisible products of combustion;
2. Designed with an alarm audible to the rooms it serves;
3. Powered by either battery, alternating current, or other power source; and
4. Tested and listed for use as a smoke detector by a recognized testing laboratory.

C. Any person, partnership, corporation, state, municipality, county, or other subdivision of this state who is a lessor of a residential rental property shall explain to the lessee or tenant the method of testing the smoke detector to ensure that it is in working order. The responsibility for checking a smoke detector to find out whether such detector is in working order is with the tenant or lessee leasing or renting a one- or two-family dwelling, including an apartment in each apartment house, and not with the person, partnership, corporation, state, municipality, county, or other subdivision of this state who is a lessor of the residential rental property to the lessee or tenant.

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Guidelines for connecting the smoke alarm:

D. Beginning November 1, 1997, all new construction or remodeling of residential dwellings which require a building permit shall include the installment of smoke detectors or the electrical wiring necessary for the installment of electrical smoke detectors.

E. Any person who violates any provision of subsection A of this section or any person who tampers with, removes, destroys, disconnects or removes power from any installed smoke detector, except in the course of inspection, maintenance or replacement of the detector, upon conviction, is guilty of a misdemeanor and may be fined not less than Fifty Dollars (\$50.00) nor more than One Hundred Dollars (\$100.00).

F. Nothing in this section shall be construed to allow any political subdivision in this state to enact laws imposing upon owners of any dwelling described in subsection A of this section a greater duty with regard to the installation, testing, repair and replacement of smoke detectors than is required by this section.

G. The State Fire Marshal Commission shall prescribe, adopt, and promulgate the rules necessary to effectuate the provisions of this section which shall include a practical time table for compliance with the provisions of this act.

H. Municipalities may enact ordinances in order to enforce the rules of the State Fire Marshal Commission as provided by this section.

For more information, please see: Oklahoma Statutes Citationized, Title 74. State Government: Chapter 11 - State Fire Marshal, Section 324.11a - Installation of Smoke Detector Requirement - Violations

Contact:

Robert Doke, State Fire Marshal
Office of the Oklahoma State Fire Marshal
2401 NW 23rd, Suite 4
Oklahoma City, Oklahoma 73107
Tel: 405-522-5005
Fax: 405-522-5028
robert.doke@fire.ok.gov

Karmen Miller
Code Services: 405-522-5005, Ext. 2
405-522-5006 (direct)
karmen.miller@fire.ok.gov

Oregon Office of the State Fire Marshal

http://www.oregon.gov/OSP/SFM/CommEd_SA_Program.shtml

Regulations/Standards

479.255 Smoke alarm or smoke detector required in certain structures; alarms and devices for persons who are hard of hearing. (1) Every dwelling unit regulated under ORS chapter 90, every lodging house and every hotel guest room shall contain an approved and properly functioning smoke alarm or smoke detector, installed in accordance with the state building code and rules of the State Fire Marshal.

479.285 Owner to maintain and test certain smoke alarms and smoke detectors. Where the smoke alarm or smoke detector is located in a common area of a lodging house, the owner or the owner's authorized agent shall be responsible for maintenance of the required smoke alarm or smoke detector and for performing such tests as are recommended by the manufacturer and is not required to provide notice of instructions under ORS 479.270. Testing intervals shall not exceed six months. [1979 c.642 §8; 1993 c.369 §21; 1999 c.307 §9]

Installation

General guidelines for smoke alarm placement:

Installation and Location of Smoke Alarms and Smoke Detectors

(1) All smoke alarms or smoke detectors shall be installed and located in accordance with the listing and manufacturer's instructions and OAR 837-045-0045 through 837-045-0060.

(2) Dwelling Units:

(a) Smoke alarms and smoke detectors in dwelling units shall be installed in each sleeping room as per the applicable requirements of the State Building Code at the time of construction and in the corridor or area giving access to sleeping areas according to the manufacturer's instructions. Where sleeping areas are located on an upper level, the smoke alarm or smoke detector shall be installed in an accessible location as close as practical to the center of the ceiling directly over the stairway. Where sleeping areas are widely separated (i.e., on different levels or opposite ends of the dwelling unit) and/or where a single smoke alarm or smoke detector will not adequately service all sleeping areas, a smoke alarm or smoke detector shall be installed adjacent to each sleeping area.

(b) When activated, the installed smoke alarm(s) or smoke detector(s) shall produce an alarm sound audible in the dwelling unit, guestroom(s) and sleeping area(s). **837-045-0055**

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Guidelines for connecting the smoke alarm:**Power Source**

1. The power supply of a smoke alarm shall be a commercial power source, an integral battery or batteries or a combination of both. The power supply for a smoke detector shall be a commercial power source.
2. When a smoke alarm or smoke detector is served from a commercial power source, the wiring shall be permanent and shall not have a disconnecting switch other than that required for over current protection.
3. When a line cord and plug is used, it shall be plugged directly into a fixed outlet box and the plug shall be secured by a device that cannot be removed without the use of a tool.

For more information please visit: http://www.oregon.gov/OSP/SFM/docs/Oregon_Laws/Division_45.pdf

Contact:

Randy Simpson, Fire Marshal
4760 Portland Rd. NE
Salem, OR 97305
Tel: 503-378-3473
Fax: 503-373-1825
oregon.sfm@state.or.us

Pennsylvania Office of the State Fire Commissioner

<http://www.osfc.state.pa.us/osfc/site/default.asp>

Regulations/Standards

There is no smoke alarm requirement applicable to existing homes which are not undergoing changes in Pennsylvania.

For new homes, the requirements are found in the International Residential Code 2006 (copyrighted, and thus not available for download). Section R313 of the 2006 International Residential Code for One- and Two-Family Dwellings requires new one-family and two-family unit dwellings to be equipped with interconnected smoke alarms that must receive their primary power from the building wiring.

Residents should contact the municipal code enforcement authority (code officer, inspector, etc.) for the municipality in which they reside. As a Commonwealth, "home rule" applies and local standards may not be the same as the "state" standard.

Installation

General guidelines for smoke alarm placement:

Further, Pennsylvania Act 45 Uniform Construction code Statute (as amended) provides the following regarding residential smoke alarms at §7210.301(a) (8):

The regulations shall exclude section R313.1.1 of the 2003 International Residential Code for One- and Two-Family Dwellings or its successor code from applying to existing one-family and two-family unit dwellings undergoing alterations, repairs or additions but shall include provisions requiring non-interconnected battery-operated smoke alarms in one-family and two-family dwellings in accordance with section R313.1.1 of the 2003 International Residential Code for One-and Two-Family Dwellings.

Guidelines for connecting the smoke alarm:

Thus, the UCC regulation at 34 Pa Code 403.21 (a) (6) (i) says:

The provisions of R313.1.1 requiring interconnected smoke alarms do not apply to one-family and two-family dwellings undergoing alterations, repairs or additions. Non interconnected battery operated smoke alarms shall be installed in these dwellings.

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For more information please visit: <http://www.osfc.state.pa.us/osfc/site/default.asp>

Contact:

Paul Reichenbach, OSFC Public Education
Office of the State Fire Commissioner
2605 Interstate Drive
Harrisburg, PA 17110
Tel: 717-651-220
Email: preichenba@state.pa.us

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South Carolina Office of the State Fire Marshal

<http://www.llr.state.sc.us/firemarshal.asp>

Regulations/Standards

South Carolina requires residents to install smoke alarms in their homes. Learn what to do to keep your family safe by following the guidelines below.

Installation

General guidelines for smoke alarm placement:

A few minutes of care given to smoke alarms throughout the year can be the difference between life and death. Always follow the manufacturer's guidelines for installation, testing, cleaning and replacing batteries. If these are not available, general recommendations are as follows:

- Install smoke alarms in your home if you do not currently have them. An alarm located between the sleeping area and the living room offers a minimum amount of protection. For maximum protection, install an alarm in every room on every level.
- Smoke alarms lose sensitivity over time. Alarms 10 or more years old should be replaced.
- At least once a month, press the test button to check your smoke alarms. If the alarm doesn't sound, replace the batteries. In some cases, the detector may need to be replaced.
- Periodically clean smoke alarms using a vacuum attachment. This removes particles that could interfere with its proper operation. Never paint over a smoke alarm.
- Smoke alarm batteries should be changed at least twice a year. Each time change is a good reminder of this biannual task. Start this practice April 5th when Daylight Savings Time begins.
- If a smoke alarm "chirps," the batteries are weak and need to be replaced.

S.C. Fire Marshal John Reich warns, "Don't let owning a smoke alarm give you a false sense of security. It can only warn of fire if it is in working order. Take responsibility for your family's safety; take care of your smoke alarm and consider installing residential fire sprinkler systems for added protection. "

For more information please visit: <http://www.llr.state.sc.us/FMARSHAL/SCFIRS/index.asp?file=nr/april.htm>

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Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed. For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Contact:

Sondra V. Senn, Public Fire Safety Education Administrator
Office of State Fire Marshal
141 Monticello Trail
Columbia, SC 29203
Tel: 803-896-9800
Fax: 803-896-9806
Email: senns@llr.sc.gov

South Dakota Fire Marshal's Office

<http://www.state.sd.us/dps/fire/>

Regulations/Standards

Smoke detectors required. Each sleeping room of a lodging establishment, as defined in subdivision (7) of SDCL 34-18-1, shall contain smoke detectors installed in accordance with the manufacturer's instructions. In new construction, smoke detectors shall receive their primary power from the building wiring and shall be equipped with a battery backup. The detector shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than those required for over current protection. Smoke detectors may be solely battery-operated when installed in existing lodging establishments.

61:15:01:14. 18 SDR 107, effective January 1, 1992; 23 SDR 32, effective September 11, 1996.

For more information please visit: <http://legis.state.sd.us/rules/DisplayRule.aspx?Rule=61:15:01:14>

Installation

General guidelines for smoke alarm placement:

Smoke detectors required in multifamily residences. Each family living unit of a multifamily residence which houses six or more families shall contain at least one smoke detector installed in accordance with the manufacturer's instructions and this section. Smoke detectors shall be located on the ceiling or wall of the main room or sleeping room in each dwelling unit of an existing multifamily residence.

Guidelines for connecting the smoke alarm:

Smoke detectors shall receive their primary power from the building wiring. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection. If a violation of this section is found, a written notice confirming such findings shall be issued and served upon the owner, operator, or other person responsible for the violation...

61:15:01:15. 18 SDR 107, effective January 1, 1992; 18 SDR 224, effective July 13, 1992; 23 SDR 32, effective September 11, 1996; 27 SDR 75, effective February 7, 2001.

For more information please visit: <http://legis.state.sd.us/rules/DisplayRule.aspx?Rule=61:15:01:15>

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Contact:

Allen Christie, Fire Marshal
118 West Capitol Avenue
Pierre, SD 57501
Tel: 605.773.3562
Fax: 605.773.6631
E-Mail: fireinfo@state.sd.us

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Tennessee State Fire Marshal's office

<http://www.state.tn.us/commerce/sfm/>

Regulations/Standards

The Tennessee Fire Marshal's Office strongly recommends the installation of smoke alarms in every home to provide early warning of a fire. They should be located in every sleeping room; outside of sleeping areas, such as hallways; and at least one should be on every floor, including basements.

There are two types of smoke alarms available to homeowners: ionization and photoelectric. Ionization alarms are quicker to sense a flaming, fast moving fire. An example is a trash bin with burning paper. Photoelectric alarms are quicker to sense smoldering, smoky fires. An example is a burning cigarette left on a piece of furniture or mattress.

Because both types of detectors perform better for differing conditions, and a homeowner never knows how or when a fire will start, the Tennessee Fire Marshal's Office recommends installing combination smoke alarms that utilize both types of detection.

Installation

General guidelines for smoke alarm placement:

Install smoke alarms on every level of your home, including the basement. Many fatal fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

For more information please visit: http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/

Guidelines for connecting the smoke alarm:

To remain reliable, smoke alarms must be maintained by regularly changing the battery—even hardwired smoke alarms. This will prevent the battery from being removed when it begins to “chirp”, putting the home at risk. The best times to change the batteries are when we “spring forward” and “fall back” for daylight savings. Alarms also need to be cleaned regularly. Follow the manufacturer's directions. Many recommend using the hose attachment of a vacuum cleaner to remove built up dust.

For more information please visit: <http://www.state.tn.us/commerce/sfm/>

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Contact:

State of Tennessee - Department of Commerce and Insurance
Division of Fire Prevention/ Administrative Services Section
Third Floor - 500 James Robertson Parkway
Nashville, Tennessee 37243
Tel: (615) 741-2981
Fax: (615) 741-1583
Email: Fire.Prevention@TN.Gov

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Texas State Fire Marshal's Office

<http://www.tdi.state.tx.us/fire/index.html>

Regulations/Standards

There are many different brands of smoke alarms available on the market but they fall under two basic types: ionization and photoelectric.

Ionization alarms sound more quickly when a flaming, fast moving fire occurs. **Photoelectric alarms** are quicker at sensing smoldering, smoky fires. There are also combination smoke alarms that combine ionization and photoelectric into one unit, called **dual sensor smoke alarms**.

Because both ionization and photoelectric smoke alarms are better at detecting distinctly different yet potentially fatal fires, and because homeowners cannot predict what type of fire might start in a home, the USFA recommends the installation of both ionization and photoelectric or dual sensor smoke alarms. In addition to the basic types of alarms, there are alarms made to meet the needs of people with hearing disabilities. These alarms may use strobe lights that flash and/or vibrate to assist in alerting those who are unable to hear standard smoke alarms when they sound.

Installation

General guidelines for smoke alarm placement:

Smoke rises

Place your smoke detector on or near the ceiling. Make sure you place your detector at least three feet away from any air vents so smoke doesn't get blown away before the detector can sense it.

Check your batteries

Test your detector once a month, and replace your batteries once a year. To test most detectors, you either push a button or shine a light. It may be helpful to connect this with a regular event such as payday. Pick an annual event, like New Year's Day or daylight savings time, to replace your batteries - even if they still work. Never disconnect your smoke detector or "borrow" the batteries for something else.

Again, follow the manufacturer's directions. If your detector "chirps" it's probably time to replace the batteries. If you rent, ask your landlord how to check the batteries and maintain the detector when you move in.

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Put at least one detector in each sleeping area

One detector per sleeping area is the absolute minimum. If all the bedrooms in your home share a single hallway, place the smoke detector in the hall outside the rooms. You should have an additional detector outside every bedroom that doesn't share a common hallway. If you sleep with the door closed, put another detector inside the bedroom. On floors without bedrooms, place detectors in or near living areas.

A good place for a smoke detector in a two-story house is at the top of the stairs since smoke from downstairs will rise along that path. Follow the manufacturer's directions. The instructions will show you exactly where and how to install your smoke detector.

Guidelines for connecting the smoke alarm:

If your smoke alarms are hard wired, that is wired into the electrical system, you will need to have a qualified electrician do the initial installation or install replacements. For battery powered smoke alarms, all you will need for installation is a screw driver. Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed.

For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.

Some smoke alarms are considered to be "hard-wired." This means they are connected to the household electrical system and may or may not have battery backup. It's important to test every smoke alarm monthly and replace the batteries with new ones at least once a year.

For more information please visit: <http://www.tdi.state.tx.us/fire/fmcoalarms.html>

Contact:

Paul Maldonado State Fire Marshal
Texas Department of Insurance
State Fire Marshal's Office
P.O. Box 149221
Austin, TX 78714-9221
Tel: 512-305-7900
Fax: 512- 305-7910
Email: Fire.Marshall@tdi.state.tx.us

Utah State Fire Marshal's Office

<http://publicsafety.utah.gov/firemarshal/>

Regulations/Standards

Fire deaths – no smoke alarms or no working smoke alarms

Working smoke alarms save lives and should be installed and maintained in every home. Roughly two-thirds of home fire deaths result from fires in homes with no smoke alarms at all or no smoke alarms that work.

Installation

- Utah law requires smoke alarms be installed outside each sleeping area and on every level of the home, including the basement. Larger homes may require additional smoke alarms to provide a minimum level of protection.
- For better protection, install smoke alarms in every sleeping room, outside each separate sleeping area, and on every level of the home.
- For the best protection, interconnect all smoke alarms throughout the home. When one sounds, they all sound. Wireless battery-operated interconnected smoke alarms are now available.
- An ionization smoke alarm is generally more responsive to flaming fires and a photoelectric smoke alarm is generally more responsive to smoldering fires. For the best protection or where extra time is needed to awaken or assist others, both types of alarms or combination ionization and photoelectric alarms are recommended.
- Choose a smoke alarm that has the label of a recognized testing laboratory.
- Smoke alarms should be installed away from the kitchen to prevent false alarms. Generally, they should not be closer than 10 feet to a cooking appliance.

Testing

- Test smoke alarms at least once a month using the test button.
- Make sure everyone in your home knows the sound of the smoke alarm.

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Deaf or hard of hearing

- Smoke alarms are available for people who are deaf or hard of hearing. These alarms use strobe lights to wake the person. Vibration equipment (pillow or bed shakers) can be added to these alarms.

Older Adults

- Recent research has shown that as people age, their ability to hear high-pitched sounds decreases. A smoke alarm with a “swoop” noise that changes pitch or use of a smoke alarm accessory now available that has a low pitched sound that is more effective for all age groups is recommended.

Voice alarms

- Smoke alarms that include a recordable voice announcement in addition to the usual alarm sound may be helpful in waking children with the use of a familiar voice.

Battery replacement

- Smoke alarms with non-replaceable batteries are designed to remain effective for 10 years. If the alarm chirps, warning that the battery is low, replace the entire smoke alarm right away. For smoke alarms with any other type of battery, replace batteries at least once a year. If that alarm chirps, replace only the battery.

Smoke alarm replacement

- Replace all smoke alarms when they are 10 years old or sooner if they do not respond properly when tested.

For more information please visit: <http://publicsafety.utah.gov/firemarshal/smokealarms.html>

Contact:

Ron L. Morris, State Fire Marshal
State Fire Marshal's Office
5272 South College Drive Suite #302
Murray, Utah 84123
Tel: (801) 284-6350
Email: ronmorris@utah.gov

Monica Colby, Public Education Specialist
Tel: (801) 256-2481
Email: monicacolby@utah.gov

Deanne Mousley, Fire Protection Engineer
Tel: (801) 284-6357
Email: DMOUSLEY@utah.gov

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Vermont Division of Fire Safety

<http://www.dps.state.vt.us/fire/>

Regulations/Standards for Residential Public Buildings

NFPA 101 Life Safety Code As Amended by the 2006 Vermont Fire and building Safety Code

[9.6. 9.2] Power for Smoke alarms: All newly installed smoke alarms in one & two family dwellings, multiple unit dwellings, lodging or rooming houses, hotels and dormitories shall be directly wired to a non-dedicated electrical branch circuit for the building and by battery.

[9.6.2 11] Photoelectric Smoke Alarms: All newly installed smoke alarms in dwelling units, lodging or rooming houses, hotels and dormitories, shall be the photoelectric-only-type.

[24.3.4] Detection, Alarm, and Communications Systems. Smoke alarms or a smoke detection system shall be provided in accordance with either 24.3.4.1 or 24.3.4.2 as modified by 24.3.4.3.

[24.3.4.1] Smoke alarms shall be installed in accordance with 9.6.2.10 in the following locations:

- (1) All sleeping rooms in other than existing one-and two-family dwellings.

A person who constructs a single-family dwelling is required to install photoelectric-only-type smoke detectors in the vicinity of any bedrooms and on each level of the dwelling. Any single-family dwelling when transferred by sale or exchange is required to contain photoelectric-only-type smoke detectors in the vicinity of any bedrooms and on each level of the dwelling installed in accordance with the manufacturer's instructions. The requirement in this act for the installation of "photoelectric-only-type" smoke detectors does not prohibit and does not discourage the additional use of separately powered ionization or photoelectric/ionization combination smoke detectors.

There are two different types of smoke alarms in general use today.

- **Ionization** - Ionization smoke alarms respond faster to flaming fires, such as those involving paper or flammable liquids.
- **Photoelectric** - Photoelectric smoke alarms respond faster to smoldering fires, such as those involving upholstered furniture or bedding materials.

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Smoke alarms save lives, prevent injuries, and minimize property damage by alerting people to a fire when a fire is still small. Smoke alarms need to be properly installed, maintained and replaced when needed.

Many existing Vermont homes currently have old, outdated ionization smoke alarms installed. These old alarms need to be replaced. The Division recommends that when you are replacing alarms that you update to a photoelectric smoke alarm.

No home should be without smoke alarms. Ionization alarms should continue to be used until a home can be equipped with new photoelectric alarms.

Installation

General guidelines for smoke alarm placement:

Alarms that are hard-wired into the home electrical system should be installed by a qualified electrician.

Choose smoke and carbon monoxide alarms that bear the label of Underwriters Laboratories or another nationally recognized testing laboratory.

Read and follow the manufacturers' instructions that are supplied with each alarm.

Install photoelectric-only smoke alarms in the vicinity of any bedrooms and on each level of a dwelling including the basement.

Install smoke alarms in each bedroom for additional protection and interconnect smoke alarms together so if one sounds an alarm, they all sound an alarm, to make sure the alarm is heard.

Mount smoke alarms on flat ceilings no closer than 4" from the adjoining wall surface. Mount smoke alarms on walls no closer than 4", and not further than 12", from the adjoining ceiling surface. Do not install a smoke alarm within 36" of a ceiling suspended fan, a supply register or the door to the bathroom or kitchen.

Guidelines for connecting the smoke alarm:

A single-family dwelling constructed before January 1, 1994 may contain smoke detectors powered by the electrical service in the building or by battery, or by a combination of both. In a single-family dwelling newly constructed after January 1, 1994 that is provided with electrical power, smoke detectors shall be powered by the electrical service in the building and by battery.

For more information please visit: <http://www.dps.state.vt.us/fire/smoke/index.html> and the Vermont Act No. 180

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Contact:

Michael Greenia, Fire Safety Education Coordinator

1311 U.S. Route 302

Berlin, Suite 600

Barre, VT 05641-2351

Tel: 802.479-7561 or 802-479.7587

Fax: 802.479.7562

Email: mgreenia@dps.state.vt.us

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Virginia State Fire Marshal

http://www.vafire.com/state_fire_marshall/index.html

Regulations/Standards

Residents are not required to have a specific type of smoke alarm installed in their homes. The state of Virginia enforces smoke alarms to be placed in newly constructed homes with the exemption of old homes. The International Building Code 2006 has been adopted for residents to follow.

Installation

General guidelines for smoke alarm placement:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping 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.

Guidelines for connecting the smoke alarm:

There are separate regulations for connecting smoke alarms in new and existing homes. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

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For existing building the requirements are: **907.3.2.3 Power source.** In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where 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 interconnection without the removal of interior finishes.

For more information please see: The International Fire Code, 2006

Contact:

Charles E. Altizer, P.E., Fire marshal

Email: ed.altizer@vdfp.virginia.gov

statefiremarshal@vdfp.virginia.gov

Jim Reed, Code Enforcement

1005 Technology Park Drive

Glen Allen, VA 23059-4500

Tel: (804) 371-0220

Fax: (804) 371-3444

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Washington Office of the State Fire Marshal

<http://www.wsp.wa.gov/fire/firemars.htm>

Regulations/Standards

Smoke alarms sense smoke and/or heat and sound an alarm to warn residents of a fire. Almost every day a smoke alarm saves somebody's life. A smoke alarm can cut your risk of dying in a home fire nearly in half.

Smoke Alarm Types

Be sure the smoke alarms you buy carry the UL label. This tells you that a representative sample of the smoke alarm has been evaluated by Underwriters Laboratories Inc. (UL) and meets nationally recognized requirements. Several types of alarms are available. Some are battery powered and some use household electrical current. All will offer protection provided they are installed and maintained properly. Smoke alarms are readily available at hardware stores.

Ionization: When smoke enters an ionization detector, ionized air molecules attach to the smoke particles and reduce the ionizing current, triggering the alarm.

Photoelectric: When smoke enters a photoelectric detector, light from a pulsating light source is reflected off the smoke particles onto a light sensor, triggering the alarm.

Combination: Combination smoke detectors that feature both photoelectric and ionization technology are also available.

Lithium powered: Lithium powered smoke alarms have non-removable power cells that last for ten years and provide a solution to the problem of missing or dead batteries in smoke alarms.

Installation

General guidelines for smoke alarm placement:

Smoke Alarm Maintenance

- **INSTALL** smoke alarms near each sleeping area and on each level of your home. Read and follow the manufacturer's installation and maintenance instructions.
- **TEST** your smoke alarm each month. This ensures it is working and familiarizes your family to the alarm sound.

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- MAINTAIN -The batteries should be changed annually. One suggestion is to change them in the fall when you change your clock time. When an alarm is “chirping” this indicates that the battery is low and needs to be replaced. Clean your smoke alarm using a vacuum and/or dust brush without removing the alarm’s cover.
- REPLACE any smoke alarm that is more than 10 years old.

Guidelines for connecting the smoke alarm:

The Fire Emergency

Knowing what to do to save life and property in the event of fire may be the most important protection you can provide. A balanced home fire protection plan should include installing and maintaining smoke alarms, making and practicing a home escape plan.

- Make sure everyone is familiar with the sound of the smoke alarm.
- Plan and practice a home fire escape plan with your family. Know at least two ways out of each room and plan a meeting place outside.
- When the alarm sounds, go directly to the meeting place and call the fire department from a neighbor’s phone.
- Never go back inside a burning building.

References: Underwriters Laboratory at http://www.ul.com/fallsafety/smoke_alarms.html; National Fire Protection Association <http://www.nfpa.org/Education/index.asp>;

For more information please visit: http://www.wsp.wa.gov/fire/docs/prevention/library/smoke_alarms.pdf

Contact:

Mike Matlick, State Fire Marshal
PO Box 42600
Olympia, WA 98504-2600
Tel: (360) 596-3901

Anjela Pimentel, Assistant State Fire Marshal
Prevention
Tel: (360) 596-3903

Street Address:
General Administration Building
210 11th Street, Olympia WA 98504
Tel: (360) 596-3902
Fax: (360) 596-3934
E-mail: firemarsh@wsp.wa.gov

West Virginia State Fire Marshal's Office

<http://www.firemarshal.wv.gov/Pages/default.aspx>

Regulations/Standards

29-3-16a. Smoke detectors in one-and two-family dwellings: ...in residential units; penalty. (a) On or before the first day of July, one thousand nine hundred ninety-one, an operational smoke detector shall be installed in the immediate vicinity of each sleeping area within all one- and two-family dwellings, including any "manufactured home" as that term is defined in subsection (j), section two, article nine, chapter twenty-one of this code.

The smoke detector shall be capable of sensing visible or invisible particles of combustion and shall meet the specifications and be installed as provided in the national fire protection association standard 72, "Standard for the Installation, Maintenance and Use of Household Fire Warning Equipment", 1996 edition, and in the manufacturer's specifications. When activated, the smoke detector shall provide an alarm suitable to warn the occupants of the danger of fire.

(b) The owner of each dwelling described in subsection (a) of this section shall provide, install and replace the operational smoke detectors required by this section. So as to assure that the smoke detector continues to be operational, in each dwelling described in subsection (a) of this section which is not occupied by the owner thereof, the tenant in any dwelling shall perform routine maintenance on the smoke detectors within the dwelling.

For more information please visit:

<http://www.firemarshal.wv.gov/Documents/CHAPTER%2029%20ARTICLE%203.pdf>

Installation

General guidelines for smoke alarm placement:

11.6.5. The following requirements apply to apartments.

- 11.6.5.1. Apartment buildings having 12 or more units or 4 or more stories in height shall have a fire alarm system. Smoke detectors shall be placed a maximum of 15 feet from the ends of corridors and walls and 30 feet on centers. This applies to both existing and new buildings with interior corridors.
- 11.6.5.2. All existing apartments shall have approved self-contained smoke detectors located at the entrances to bedrooms.

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- 11.6.5.3. All new apartments shall have an approved self-contained smoke detector hard wired in accordance with NFPA 72, National Fire Alarm Code.
- 11.6.5.4. All new apartment buildings having 12 or more units or 4 or more stories in height with direct exiting to the exterior shall have manual pull stations every 75 feet on the exterior wall with a minimum requirement of one pull station per building.

Guidelines for connecting the smoke alarm:

11.1.3. All fire alarm systems shall be tied in ahead of the main power disconnect, unless a secondary power source is provided.

For more information please visit: <http://www.firemarshal.wv.gov/Documents/87-01%20State%20Fire%20Code%2006.pdf>

Contact:

Sterling Lewis Jr., State Fire Marshal

Carol Nolte, Deputy State Fire Marshal
WV State Fire Marshal's Office/Public Education Division
1207 Quarrier St, 2nd Floor
Charleston, WV 25301
Tel: 304-558-2191, Ext. 53223
Email: Carol.E.Nolte@wv.gov

Joe Leake, Deputy State Fire Marshal for the Fire Safety Inspection and Plans Review Division
Tel: 304-558-2191 ext. 53213
Email: Clarence.J.Leake@wv.gov

Wisconsin Department of Commerce

<http://www.commerce.state.wi.us/SB/SB-FirePreventionProgram.html>

Regulations/Standards

Wisconsin law requires owner-occupied homes, rental homes and other residential buildings to be protected by smoke alarms or a smoke detection system. Owners must install and maintain them, and tenants must inform the owner of any smoke alarm problems. The requirements differ between those for one and 2-family dwellings and those for multi-unit housing, which includes hotels and motels and apartment buildings. The requirements also differ for buildings depending on the date a building permit or state plan approval was applied for. In addition, there may be local or special occupancy requirements, such as for community-based residential facilities (CBRFs), hospitals and nursing homes. For more details, consult the applicable statutes (Ch. 101) and codes (Comm 21, 28, 61 to 65) and your local building inspection or fire department.

Why are smoke alarms necessary?

People in Wisconsin die because of not being warned of fires that they cannot see. Working smoke alarms have been shown to reduce by half the risk of death by fire. Most fire deaths are caused by smoke inhalation, not by burns. Hundreds of Wisconsinites are seriously and painfully injured each year. Also, smoke alarms protect property by providing early warning for the need to call help.

Installation

General guidelines for smoke alarm placement:

Where must smoke alarms be installed?

For one- and 2-family dwellings built before December 1, 1994, owners must install at least one smoke alarm on each floor level of each unit, including the basement. For multi-unit housing built before April 1, 2000, the owner must install at least one smoke alarm in the following locations:

- In the basement.
- At the head of stairs at each floor level. (If the stairs are enclosed, then place the smoke alarm in front of the door leading to the stairs.)
- Either in each sleeping room or elsewhere in the unit within 6 feet of each sleeping area, provided the location is not in a kitchen. After the above dates, additional locations may be required. (See table on back.) Although not always required, the following are recommended:

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- Place smoke alarms between each sleeping area and the rest of the dwelling, and above the base of any stairs on other floor levels within a dwelling.
- Locate a smoke alarm outside each sleeping area and inside each bedroom, and keep the bedroom doors closed for additional protection.

How should smoke alarms be installed?

Install smoke alarms according to manufacturers' instructions. Typical requirements include:

- Mount on the bottom of any exposed basement ceiling joists.
- Place at least 4 inches from the wall when installing on the ceiling. The center of the room is best. **(See illustration below.)**
- Place between 4 to 12 inches from the ceiling when installing on a wall. Be sure it is out of the dead air space where the ceiling and wall meet. (See illustration below.)
- Install within 3 feet of the highest part of a peaked or sloped ceiling.
- Place at least 3 feet away from any window, door or air register where drafts could prevent smoke from reaching the alarm.
- Mount away from kitchens where cooking could cause false alarms and subsequent disconnection.
- Do not install where there are extreme temperatures, excess humidity or heavy dust such as in bathrooms, unheated garages or attics. It is recommended that tamper-resistant smoke alarms or smoke alarms wired to the building electrical system be installed if there is a problem with battery disconnection. In older manufactured homes, mount smoke alarms only on interior walls and not on ceilings or exterior walls.

What maintenance is required?

Smoke alarms cannot save lives if they are not working!

- Change batteries at least once a year, or more often, if the low-battery warning activates. A good idea is to choose the same day or week each year to replace batteries. Mark the battery with the installation date. (There are smoke alarms with 10-year batteries available.)
- Change photo-electric bulbs when trouble indicators activate.
- Test the alarm monthly by using the test button, or as required by the manufacturer. If the alarm doesn't work, replace any battery. If it still doesn't work, replace the smoke alarm.

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- Open the cover and vacuum the unit regularly.
- Replace older smoke alarms – typically after 10 years – as recommended by manufacturer.

If the smoke alarm instructions are unavailable, there is some basic information, including the manufacturer's identification address, on the smoke alarm itself. Renters must inform landlords in writing of smoke alarm problems, such as a dead battery. The landlord has 5 days to correct the problem.

Do you have an escape plan?

Although functional smoke alarms usually give an early warning, it is important to have an adequate escape plan:

- Look for sources of fires on your property and eliminate or reduce them.
- Have at least two ways to escape a fire and an outside meeting location for everyone in the household.
- Call the fire department after you're outside.

Check smoke alarms today!

Guidelines for connecting the smoke alarm:

What kind of smoke alarms are required?

All smoke alarms used in Wisconsin must be Underwriters Laboratories (UL) listed, or equivalent, and must be either of the ionization or photo-electric types. (Heat detectors, which respond slower, may only be used in addition to smoke alarms.) In common areas of multiunit housing, a smoke detection system shall be installed per NFPA 72. For multi-unit housing built before January 1, 1982, and for one- and 2-family dwellings built before April 1, 1992, the smoke alarms may be self-contained and battery-operated. After the above dates, additional features may be required. (See table on back.)

Although not always required, the following are recommended:

- Interconnect all of a living unit's smoke alarms and have them powered by both a building circuit and batteries to ensure audible operation in all situations.
- Connect building-powered smoke alarms onto regular lighting circuits, ahead of any switch, so the loss of power to the alarm is likely to be noticed because the lights don't work.

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- Include strobe lights with alarms for the hearing impaired. (Besides those required in common use areas, strobes may be required in some individual living units.)
- In multi-unit housing, smoke alarms in living units may not require interconnection with the rest of the building's alarms, even though the common area smoke alarms need to be interconnected. This is to minimize potential false alarm problems.
- Locate a smoke alarm outside each sleeping area and inside each bedroom, and keep the bedroom doors closed for additional protection.

For more information please visit: <http://commerce.wi.gov/SBdocs/SB-SmokeAlarmBroch8282.pdf>

Contact:

Joseph Hertel, Program Manager
Post Office Box 2689, Madison, WI 53701
608-266-5649
Fax: 608-264-8795
Email: joe.hertel@wisconsin.gov

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Wyoming State Fire Marshal

<http://wyofire.state.wy.us/>

Regulations/Standards

State smoke alarm requirements for Wyoming can't be provided at the moment. However residents can follow The International Building Code 2006 below.

Installation

General guidelines for smoke alarm placement:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping 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.

Guidelines for connecting the smoke alarm:

There are separate regulations for connecting smoke alarms in new and existing homes. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

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For existing building the requirements are: **907.3.2.3 Power source.** In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where 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 interconnection without the removal of interior finishes.

For more information please see: The International Fire Code, 2006

Contact:

Lanny Applegate, State Fire Marshal
State Fire Marshal's Office
Herschler 1 West
Cheyenne, WY 82002
Tel: 307-777-7288
Fax: 307-777-7119
Email: lapple@state.wy.us