



Harford County Smoke Detector Requirements

The primary purpose of this document is to provide basic information regarding smoke detectors to individuals involved in the construction or alteration of one and two family dwellings. The document also contains copies of the code text from Section 314 of the 2018 IRC and Title 9, Subtitle 1 Smoke Detection Systems from the Annotated Code of Maryland, Public Safety Article. It is highly recommended that anyone involved in the construction and or renovation of dwelling units be familiar with the provision of both the Harford County Building Code, the Harford County Electrical Code and the State Fire Prevention code prior to commencing work

Authority:

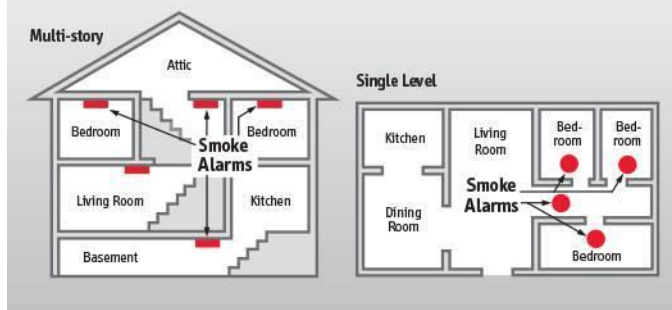
The Harford County Building Code, the Harford County Electrical Code and the State Fire Prevention code each provide requirements for the placement and installation of smoke detectors for new structures, existing structures and existing structures that are undergoing, repairs, alterations and additions that necessitate the issuance of a Building Permit. Based upon the Harford County Building Code which utilizes the provisions found in Section 314 of the 2018 International Residential Code, Harford County Building Inspectors are responsible for determining compliance with location, interconnection and power supply. **This includes existing areas of the dwelling that are outside of the intended work area and scope of the issued permit.** The Harford County Electrical Inspectors will verify compliance with the installation of the power distribution system as applicable to the provisions of the Harford County Electrical Code.



Location:

In new structures and existing structures that are undergoing, repairs, alterations and additions that necessitate the issuance of a Building Permit, smoke detectors shall be located as follows;

Where to place SMOKE ALARMS



1. In each sleeping room
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms. *(Based upon manufacturers installation instructions usually no more than 20 feet from the bedroom door)*
3. On each story of the dwelling including basements and habitable attics.

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County Inspectors are not required to verify smoke detector placement upgrades when permits are issued for work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, the addition of a porch or deck, or the installation, alteration or repairs of plumbing or mechanical systems. This work is specifically exempted from the requirements for upgraded placement.

However as of January 1, 2018 the State Fire Prevention Code does require Smoke Detectors to be in each sleeping area and on each floor.

Interconnection:

Where more than one smoke detector is required to be installed within an individual dwelling unit, the detector must be interconnected so that the actuation of one detector will activate all of the detectors within the individual dwelling unit. Listed wireless detectors may be substituted for the physical interconnection where all of the detectors will sound upon activation of one detector.

Power Supply:

Smoke detectors are required to receive their primary power from the building wiring where such wiring is served from a commercial source and, and must be supplied with a battery backup. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke detectors shall be permitted to be battery operated where installed in buildings without commercial power or where smoke detector upgrades are required based upon the structure undergoing an alteration, repair or addition.

In accordance with Annotated Code of Maryland, Public Safety Article Title 9 Subtitle 1 §9-104 (d)(3) (iii), when battery operated alarms are permitted, only sealed, tamper resistant units incorporating a silence/hush button and using long-life batteries may be used.

Compliance:

Smoke detectors shall be listed in accordance with UL 217 and installed per manufacturers installation instructions. Combination Smoke alarms and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034

Additional Information:

Questions regarding the proper placement and installation of smoke detectors may be directed to:

1. Harford County Building Services Division – (410) 638-3366
2. Harford County Electrical Services Division _ (410) 638-3363

**SECTION R314
SMOKE ALARMS**

1 General.

Smoke alarms shall comply with NFPA 72 and Section R314.

R314.1.1 Listings.

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

R314.2 Where required.

Smoke alarms shall be provided in accordance with this section.

R314.2.1 New construction.

Smoke alarms shall be provided in *dwelling units*.

R314.2.2 Alterations, repairs and additions.

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

Exceptions:

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

R314.3 Location.

Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and *habitable attics* and not including crawl spaces and uninhabitable *attics*. In *dwelling*s or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.

R314.3.1 Installation near cooking appliances.

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

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

R314.4 Interconnection.

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

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

R314.5 Combination alarms.

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

R314.6 Power source.

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

Exceptions:

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

R314.7 Fire alarm systems.

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Fire alarm systems shall be permitted to be used in lieu of smoke alarms and shall comply with Sections R314.7.1 through R314.7.4.

R314.7.1 General.

Fire alarm systems shall comply with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72. Smoke detectors shall be *listed* in accordance with UL 268.

R314.7.2 Location.

Smoke detectors shall be installed in the locations specified in Section R314.3.

R314.7.3 Permanent fixture.

Where a household fire alarm system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner.

R314.7.4 Combination detectors.

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

PUBLIC SAFETY

TITLE 9. FIRE PROTECTION AND PREVENTION

SUBTITLE 1. SMOKE DETECTION SYSTEMS

Md. PUBLIC SAFETY Code Ann. § 9-101 (2017)

§ 9-101. Definitions.

- (a) In general. -- In this subtitle the following words have the meanings indicated.
- (b) Sleeping area. -- "Sleeping area" means a space that includes one or more sleeping rooms and a hall or common area immediately adjacent to any sleeping room.
- (c) Sleeping room. -- "Sleeping room" means an enclosed room with a bed arranged to be used as a bedroom.
- (d) Smoke alarm. -- "Smoke alarm" means a single or multiple station device that detects visible or invisible products of combustion and includes a built-in internal alarm signal.
- (e) Smoke detector. -- "Smoke detector" means a system-connected smoke sensing device tied to a fire alarm control panel or a household fire warning panel.

§ 9-102. Smoke alarms required in sleeping areas.

- (a) Statewide applicability. -- This subtitle applies throughout the State, including Baltimore City.
- (b) In general. -- An automatic smoke alarm shall be provided in each sleeping area within each residential occupancy, including one- and two-family dwellings, lodging or rooming houses, hotels, dormitories, and apartment buildings, as defined in NFPA 101: Life Safety Code as adopted by the State Fire Prevention Commission.
- (c) Requirements. -- Smoke alarms shall:
 - (1) be installed in accordance with NFPA 72: National Fire Alarm Code as referenced by the State Fire Prevention Code;
 - (2) be listed and labeled by a nationally recognized testing laboratory to comply with Underwriters Laboratories (UL) 217, "Standard for safety for single and multiple station smoke alarms";
 - (3) be suitable for sensing visible or invisible products of combustion; and
 - (4) sound an alarm suitable to warn the occupants.
- (d) Regulations. -- Local jurisdictions may adopt smoke alarm regulations that are more stringent than the provisions of this subtitle.

§ 9-103. Smoke alarms required in sleeping areas -- New construction.

- (a) Applicability to construction on or after July 1, 2013. -- This section applies only to new residential units constructed on or after July 1, 2013.
- (b) In general. -- At least one smoke alarm shall be installed in each sleeping room, in the hallway or common area outside of sleeping rooms, and in the hallway or common

area on each level within a residential dwelling unit, including basements and excluding unoccupied attics, garages, and crawl spaces.

- (c) Requirements for two or more alarms. -- If two or more smoke alarms are required within a residential unit, the smoke alarms shall be arranged so that activation of any one smoke alarm causes alarm activation of all other required smoke alarms within the residential unit.
- (d) Power sources. -- Each smoke alarm required by this section shall operate on an alternating current (AC) primary source of electric power with a battery backup or an approved alternate secondary power source.
- (e) Requirements in one- and two-family dwellings. -- In one- and two-family dwellings, a smoke detector installed as a part of an approved household fire alarm system is an acceptable alternative to the AC powered-battery backup smoke alarm required by this section, if the smoke detector is installed and located as specified in subsection (b) of this section.
- (f) Installation as part of approved fire alarm system. -- A smoke detector installed as a part of an approved fire alarm system is an acceptable alternative to the AC powered-battery backup smoke alarm required by this section, if the smoke detector is installed and located as specified in subsection (b) of this section.

§ 9-104. Specific requirements.

- (a) In general. --
 - (1) At least one smoke alarm shall be provided in each residential sleeping area.
 - (2) Smoke alarms required in one- and two-family dwellings constructed before July 1, 1975, shall be battery powered or alternating current (AC) primary electric powered units.
 - (3) Smoke alarms required in one- and two-family dwellings constructed between July 1, 1975, and June 30, 1990, shall be alternating current (AC) primary electric powered units.
 - (4) Smoke alarms required in multifamily residential occupancies including apartments, lodging or rooming houses, dormitories, and hotels shall be alternating current (AC) primary electric powered units.
 - (5) Smoke alarms required in a residential occupancy constructed on or after July 1, 1990, shall be alternating current (AC) primary electric powered units with battery backup or an approved alternate secondary power source.
- (b) Construction on or after January 1, 1989 -- Installation in each level. -- At least one smoke alarm shall be installed in each level of a residential occupancy constructed on or after January 1, 1989, including basements and excluding unoccupied attics, garages, and crawl spaces.
- (c) Construction on or after January 1, 1989 -- Two or more alarms. -- If two or more smoke alarms are required within a residential unit constructed on or after January 1, 1989, the

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smoke alarms shall be arranged so that activation of any one smoke alarm causes alarm activation of all other required smoke alarms within the residential unit.

(d) Upgrades required. --

(1) Subject to paragraph (2) of this subsection, smoke alarm placement in a one- or two-family dwelling shall be upgraded to comply with paragraph (3) of this subsection in existing residential occupancies when any one of the following occurs:

(i) the existing smoke alarms exceed 10 years from the date of manufacture;

(ii) the existing smoke alarms fail to respond to operability tests or otherwise malfunction;

(iii) there is a change of tenant in a residential unit and the residential unit has not previously been equipped in accordance with this subtitle with sealed long-life battery smoke alarms with silence/hush button features within the 10 years preceding the change of tenant; or

(iv) a building permit is issued for an additional residential unit or alteration to a residential unit.

(2) Smoke alarm placement shall be upgraded to comply with paragraph (3) of this subsection in all existing residential occupancies on or before January 1, 2018.

(3) Upgraded smoke alarm placement shall include the following:

(i) a minimum of one smoke alarm on each level of the residential unit, including basements and excluding unoccupied attics, garages, and crawl spaces;

(ii) smoke alarms shall be alternating current (AC) primary powered units with battery backup, except as follows:

1. smoke alarms in one- and two-family dwellings constructed before July 1, 1975, may be battery operated; and

2. smoke alarms required in new locations by this section, if smoke alarms did not previously exist, may be battery operated; and

(iii) if battery operated smoke alarms are permitted, only sealed, tamper resistant units incorporating a silence/hush button and using long-life batteries may be used.

(e) Smoke detectors installed as part of approved household fire alarm system -- One- and two-family dwellings. -- In one- and two-family dwellings, a smoke detector installed as a part of an approved household fire alarm system is an acceptable alternative to the AC powered-battery backup smoke alarms required by this section, if the smoke detectors are installed and located as specified in subsection (a) of this section.

(f) Smoke detectors installed as part of approved household fire alarm system -- In general. -- A smoke detector installed as a part of an approved fire alarm system is an acceptable alternative to the AC powered-battery backup smoke alarms required by this section, if the smoke detectors are installed and located as specified in subsection (a) of this section.

§9-105. Sleeping rooms occupied by deaf or hard of hearing individuals.

(a) In general. -- Each sleeping room occupied by a deaf or hard of hearing individual shall be provided with a smoke alarm suitable to alert the deaf or hard of hearing individual.

(b) Written request; appliance with capability to activate signal. --

(1) On written request on behalf of a tenant who is deaf or hard of hearing, a sleeping room occupied by a deaf or hard of hearing individual shall be provided with an approved notification appliance designed to alert deaf or hard of hearing individuals.

(2) The landlord shall provide a notification appliance that, when activated, provides a signal that is sufficient to warn the deaf or hard of hearing tenant in those sleeping rooms.

(c) Hotels and motels -- Requirements. -- Hotels and motels shall have available at least one approved notification appliance for the deaf or hard of hearing individual for each 50 units or fraction of 50 units.

(d) Hotels and motels -- Permanent sign. -- Hotels and motels shall post in a conspicuous place at the registration desk a permanent sign that states the availability of smoke alarm notification appliances for the deaf or hard of hearing individual.

(e) Hotels and motels -- Refundable deposit for notification appliances. --

(1) Hotels and motels may require a refundable deposit for notification appliances for the deaf or hard of hearing individual.

(2) The amount of the deposit may not exceed the value of the notification appliance.

(f) Reimbursement to landlords. -- A landlord may require reimbursement from a tenant for the cost of a smoke alarm required under this section.

§ 9-106. Enforcement; responsibilities.

(a) Enforcement. -- Smoke alarm requirements shall be enforced by the State Fire Marshal, a county or municipal fire marshal, a fire chief, the Baltimore City Fire Department, or any other designated authority having jurisdiction.

(b) Responsibility of building permit applicant. --

(1) The building permit applicant is responsible for the proper installation of required smoke alarms in residential occupancies constructed on or after July 1, 2013.

(2) If a building permit is not required, the general contractor shall bear the responsibility described in paragraph (1) of this subsection.

(c) Responsibility of landlord or property owner. -- The landlord or property owner is responsible for the installation, repair, maintenance, and replacement of smoke alarms required by this subtitle.

(d) Removal or tampering with smoke alarms prohibited. --

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Occupants of a residential occupancy may not remove or tamper with a required smoke alarm or otherwise render the smoke alarm inoperative.

(e) Occupant responsible for testing; notification of failure or malfunction. --

(1) Testing of smoke alarms is the responsibility of the occupant of the residential unit.

(2) (i) A tenant shall notify the landlord in writing of the failure or malfunction of a required smoke alarm.

(ii) The written notification required under subparagraph (i) of this paragraph shall be delivered by certified mail, return receipt requested to the landlord, or by hand delivery to the landlord or the landlord's agent, at the address used for the payment of rent.

(iii) If the delivery of the notification is made by hand as described in subparagraph (ii) of this paragraph, the landlord or the landlord's agent shall provide to the tenant a written receipt for the delivery.

(iv) The landlord shall provide written acknowledgment of the notification and shall repair or replace the smoke alarm within 5 calendar days after the notification.

(f) Use of battery operated smoke alarms. --

(1) If a residential unit does not contain alternating current (AC) primary electric power, battery operated smoke alarms or smoke alarm operation on an approved alternate source of power may be permitted.

(2) Battery operated smoke alarms shall be sealed, tamper resistant units incorporating a silence/hush button and using long-life batteries.

(g) Smoke alarm combined with carbon monoxide alarm. -- A smoke alarm may be combined with a carbon monoxide alarm if the device complies with:

- (1) this subtitle;
- (2) Title 12 of this article; and
- (3) Underwriters Laboratories (UL) Standards 217 and 2034.

§ 9-107. Property insurance claims

Failure to comply with this subtitle may not be used as a policy defense in the settlement of a property insurance claim.

§ 9-108. Smoke alarm installation order.

(a) In general. -- If the State Fire Marshal or other designated authority with jurisdiction finds the absence of operating, required smoke detectors, the State Fire Marshal or other authority shall issue a smoke alarm installation order to the responsible landlord, owner, or occupant.

(b) Compliance with order. -- The responsible person shall comply with a smoke alarm installation order within 5 calendar days.

§ 9-109. Violation of subtitle

(a) Prohibited. -- A person may not knowingly violate this subtitle.

(b) Penalty. -- A person who violates this section is guilty of a misdemeanor and on conviction is subject to imprisonment not exceeding 10 days or a fine not exceeding \$ 1,000 or both.