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Harford County Carbon Monoxide Alarm Requirements

The primary purpose of this document is to provide basic information regarding carbon monoxide alarms 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 315 of the 2021 IRC and Title 12, Subtitle 11 Carbon Monoxide Alarms 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 provisions 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 Annotated Code of Maryland each provide requirements for the placement and installation of carbon monoxide alarms 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 315 of the 2021 International Residential Code, Harford County Building Inspectors are responsible for determining compliance with location 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:

Within all new structures and existing structures that are undergoing, repairs, alterations and additions that necessitate the issuance of a Building Permit that contain a fuel-fired appliance or an attached garage with an opening to the dwelling unit, carbon monoxide alarms shall be located as follows;

1. 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)*
2. Within each bedroom containing a fuel-fired appliance.
3. Within each bedroom that contains a bathroom with a fuel fire appliance.

County Inspectors are not required to verify carbon monoxide alarm 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

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repairs of plumbing or mechanical systems. This work is specifically exempted from the requirements for upgraded placement.

Power Supply:

Carbon monoxide alarms 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. Carbon monoxide alarms 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 12 Subtitle 11 §12-1101 (4) (ii) 2, when battery operated alarms are permitted, only sealed, tamper resistant units using long-life batteries of not less than 10 years may be used.

Compliance:

Carbon monoxide alarms shall be listed in accordance with UL 2075 and installed per manufacturers installation instructions. The use of combination smoke detectors and carbon monoxide alarms listed in accordance with UL 2075 and UL 268 are also permitted for use

Additional Information:

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

1. Harford County Building Services Division – (410) 638-3122
2. Harford County Electrical Services Division _ (410) 638-3122

SECTION R315 CARBON MONOXIDE ALARMS

R315.1 General.

Carbon monoxide alarms shall comply with [Section R315](#).

R315.1.1 Listings.

Carbon monoxide alarms shall be *listed* in accordance with [UL](#) 2034. Combination carbon monoxide and smoke alarms shall be *listed* in accordance with [UL](#) 217 and [UL](#) 2034.

R315.2 Where required.

Carbon monoxide alarms shall be provided in accordance with [Sections R315.2.1](#) and [R315.2.2](#).

R315.2.1 New construction.

For new construction, carbon monoxide alarms shall be provided in *dwelling units* where either or both of the following conditions exist.

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

R315.2.2 Alterations, repairs and additions.

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

Exceptions:

1. 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.
2. Installation, *alteration* or repairs of plumbing systems.
3. Installation, *alteration* or repairs of mechanical systems that are not fuel fired.

R315.3 Location.

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

R315.4 Combination alarms.

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

R315.5 Interconnectivity.

Where more than one carbon monoxide alarm is required to be installed within an individual *dwelling unit* in accordance

with [Section R315.3](#), the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual *dwelling unit*. Physical interconnection of carbon monoxide alarms shall not be required where *listed* wireless alarms are installed and all alarms sound upon activation of one alarm.

Exception: Interconnection of carbon monoxide alarms in existing areas shall 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.

R315.6 Power source.

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

Exceptions:

1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Carbon monoxide alarms installed in accordance with [Section R315.2.2](#) shall be permitted to be battery powered.

R315.7 Carbon monoxide detection systems.

Carbon monoxide detection systems shall be permitted to be used in lieu of carbon monoxide alarms and shall comply with [Sections R315.7.1](#) through [R315.7.4](#).

R315.7.1 General.

Household carbon monoxide detection systems shall comply with [NFPA 720](#). Carbon monoxide detectors shall be *listed* in accordance with [UL](#) 2075.

R315.7.2 Location.

Carbon monoxide detectors shall be installed in the locations specified in [Section R315.3](#). These locations supersede the locations specified in [NFPA 720](#).

R315.7.3 Permanent fixture.

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

R315.7.4 Combination detectors.

Combination carbon monoxide and smoke detectors installed in carbon monoxide detection systems in lieu of carbon monoxide detectors shall be *listed* in accordance with [UL](#) 268 and [UL](#) 2075.

**PUBLIC SAFETY
TITLE 12. BUILDING AND MATERIAL CODES;
OTHER SAFETY PROVISIONS
SUBTITLE 11. CARBON MONOXIDE ALARMS**

Md. PUBLIC SAFETY Code Ann. § 12-1101 (2017)

§ 12-1101. Definitions

(a) In general. -- In this subtitle the following words have the meanings indicated.

(b) Carbon monoxide alarm. -- "Carbon monoxide alarm" means a device that:

- (1) senses carbon monoxide;
- (2) when sensing carbon monoxide, is capable of emitting a distinct and audible sound;
- (3) is listed and carries the listing of a nationally recognized testing laboratory approved by the Office of the State Fire Marshal; and
- (4) (i) is wired into an alternating current (AC) powerline with secondary battery backup; or
(ii) for a hotel, a lodging or rooming house, or a rental dwelling unit:
 1. is wired into an alternating current (AC) powerline with secondary battery backup;
 2. is battery-powered, sealed, tamper resistant, and using a long-life battery that has a life of not less than 10 years; or
 3. is connected to an on-site control unit that monitors the carbon monoxide alarm remotely so that a responsible party is alerted when the device activates the alarm signal and receives its primary power from a battery or the control unit.

(c) Dwelling. --

(1) "Dwelling" means a building or part of a building that provides living or sleeping facilities for one or more individuals.

(2) "Dwelling" includes a one or two family dwelling, multifamily dwelling, hotel, lodging or rooming house, or dormitory.

(d) Hotel. -- "Hotel" has the meaning stated in § 9-201 of this article.

(e) Install. -- "Install" means to attach to the wall or ceiling of a dwelling in accordance with:

- (1) the National Fire Protection Association (NFPA) 720 standard for the installation of carbon monoxide warning equipment in dwelling units; and
- (2) the manufacturer's recommendations.

(f) Lodging or rooming house. -- "Lodging or rooming house" has the meaning stated in § 9-201 of this article.

(g) Rental dwelling unit. -- "Rental dwelling unit" has the meaning stated in § 6-801 of the Environment Article.

(h) Sleeping area. -- "Sleeping area" has the meaning stated in § 9-101 of this article.

§ 12-1102. Scope.

This subtitle only applies to:

- (1) a dwelling that:
 - (i) relies on the combustion of a fossil fuel for heat, ventilation, hot water, or clothes dryer operation; and
 - (ii) is a newly constructed dwelling for which a building permit is issued on or after January 1, 2008; or
- (2) a hotel, a lodging or rooming house, or a rental dwelling unit.

§ 12-1103. Combination of carbon monoxide and smoke alarms

A carbon monoxide alarm may be combined with a smoke alarm if the combined device complies with:

- (1) this subtitle;
- (2) Title 9 of this article; and
- (3) American National Standards Institute (ANSI) Underwriters Laboratories (UL) standards 217 and 2034 or ANSI/UL 268 and 2075.

§ 12-1104. Installation of alarms

(a) Areas. -- Except as provided in subsections (b) and (c) of this section, there must be a carbon monoxide alarm installed in a central location outside of each sleeping area within a dwelling subject to this subtitle.

(b) Hotel, lodging, or rooming house. -- For a hotel or a lodging or rooming house, on or after April 1, 2017, there must be a carbon monoxide alarm installed within the dwelling, as follows:

- (1) on the wall inside each guest room that:
 - (i) contains a device that emits carbon monoxide;
 - (ii) is adjacent to a room or area that contains a device that emits carbon monoxide;
 - (iii) is adjacent to an enclosed unventilated attached garage; or
 - (iv) is connected by ductwork to an enclosed unventilated attached garage or room or area that contains a device that emits carbon monoxide; and
- (2) on a wall in each room or area that:
 - (i) contains a device that emits carbon monoxide;
 - (ii) is adjacent to a room or area that contains a device that emits carbon monoxide; or
 - (iii) is adjacent to an enclosed unventilated attached garage.

(c) Rental dwelling unit. -- For a rental dwelling unit, on or after April 1, 2018, there must be a carbon monoxide alarm installed within the dwelling as follows:

- (1) outside and in the immediate vicinity of each separate sleeping area; and

(2) on every level of the unit, including the basement.
(d) Installation of alarm near carbon monoxide producing equipment. -- Notwithstanding subsections (a), (b), and (c) of this section, if there is a centralized alarm system that is capable of emitting a distinct and audible sound to warn all occupants, the owner of a dwelling may install a carbon monoxide alarm within 25 feet of any carbon monoxide-producing fixture and equipment.

§ 12-1105. Rendering alarm inoperable prohibited.

Except as part of routine maintenance, a person may not render a carbon monoxide alarm inoperable.

§ 12-1106. More stringent local laws allowed

This subtitle does not prevent a county or municipal corporation from enacting more stringent laws that relate to carbon monoxide alarms.