



City of Mansfield

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SAFETY FIRST!



SMOKE ALARMS SAVE LIVES!

For residential occupancies, the Building Code has a unique provision that requires smoke alarms to be retrofitted in existing dwelling units. Residential fire deaths far exceed those of any other building use. Most fire fatalities in residential buildings occur between 2 a.m. and 6 a.m. - while most people are sleeping.

A common misconception is that smoke will awaken you if a fire does break out. In fact, the toxic smoke may actually put you into a deeper sleep, making a safe escape impossible. Additionally, more than one-half of the fire deaths among all buildings have occurred because of a delay in detection due to the occupants being asleep at the time of the fire. Smoke from a residential fire can quickly kill any occupants, while a smoke alarm could easily save those lives.

U.S. Department of Commerce - National Institute of Standards and Technology (NIST) Technical Note 1455-1 (December 2007 Revision) states that both types of commercially available home smoke alarms, consistently provide people enough time to escape most residential fires. It stressed the need for immediate response to an activated alarm and showed that individuals caught in a flaming fire (as opposed to a smoldering fire) have an average of three minutes from an alarm's first warning to escape.

For this reason, smoke alarms are required to be installed not only in new residential construction, but also existing, when any addition, alteration, or repair causes a permit to occur. This provision is intended to speed up the installation of smoke alarms in residential buildings, as they have proven to be very effective in the reduction of fire deaths.

Tips on Smoke Alarms and Carbon Monoxide Alarms

- Test the devices once a month. All alarms have a test button that can be used to test the alarm. Certain alarms can be tested with a flashlight. If the alarm does not test properly, replace the alarm immediately
- Do not paint the alarm devices.
- Install and test the alarm devices in accordance with the manufacturer's installation instructions.
- Replace the batteries once per year. Pick a date.....birthday, January 1st, daylight savings time, etc. to annually replace the batteries. If your alarm is chirping or flashing, it may be time to change the battery. Read the manufacturer's installation instructions and test the alarm accordingly.

required automatic residential fire sprinkler system is intended to be installed within a building with four or more dwelling units or a dwelling in another R-3 occupancy using this code, the system shall be designed and installed in accordance with Section 2904, NFPA 13, NFPA 13R or NFPA 13D as referenced in Chapter 44 of this code.

313.2 One-, two- and three-family dwellings automatic fire systems. An automatic residential fire sprinkler system is not required to be installed in one-, two-, or three-family dwellings.

313.2.1 Design and installation for non-required systems. When an automatic residential fire sprinkler system is intended to be installed, it shall be designed and installed in accordance with Section 2904, NFPA 13, NFPA 13R or NFPA 13D as referenced in Chapter 44 of this code.

313.3 Design and installation of non-required fire sprinkler systems. Any full or partial fire sprinkler system not required by this code shall be permitted to be installed for partial or complete protection provided that such system meets the requirements of this code to the extent of the intended installation.

SECTION 314 **SMOKE ALARMS**

314.1 General. Smoke alarms shall comply with the household fire warning equipment provisions of NFPA 72 and Section 314.

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

314.1.2 Technologies. On each level within each dwelling unit smoke alarms utilizing photoelectric and ionization technologies shall be installed. Separate or dual-sensing smoke alarms may be used. A smoke alarm located in accordance with section 314.3(2) shall include photoelectric technology.

Exception: A system meeting the requirements of Section 314.7 is not required to include both technologies.

314.2 Where required. Smoke alarms shall be provided in accordance with this section.

314.2.1 New construction. Smoke alarms shall be provided in dwelling units

in the locations described in Section 314.3.

314.2.2 Alterations, repairs and additions. Where alterations, repairs or additions requiring an approval occur, smoke alarms shall be installed, as required for new construction, as follows:

1. When alterations or repairs are made to spaces described in items 1 and 2 of Section 314.3, smoke alarms shall be provided in those areas.
2. When one or more sleeping rooms are added to or created in existing dwelling units, the new sleeping rooms and the immediate vicinity outside each sleeping room shall be equipped with smoke alarms.

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.

314.3 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 *sleeping rooms*.
3. On each additional story of the dwelling, including basements and habitable attics and 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.
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 this section.

314.3.1 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 314.3.

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.

314.4 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section 314.3, 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 and labeled 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 the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.

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

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

314.7 Fire alarm systems. Fire alarm systems shall be permitted to be used in lieu of smoke alarms and shall comply with Sections 314.7.1 through 314.7.4.

314.7.1 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.

314.7.2 Location. Smoke detectors shall be installed in the locations specified in Section 314.3.

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

Exception. *Where separate smoke alarms are provided meeting all other requirements of this section, the fire alarm system is not required to be a permanent fixture of the occupancy or owned by the homeowner.*

314.7.4 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.

SECTION 315 **CARBON MONOXIDE ALARMS**

315.1 General. Carbon monoxide alarms shall comply with Section 315.

315.1.1 Listings. Carbon monoxide alarms shall be listed *and labeled* in accordance with UL 2034 *and shall be installed in accordance with the manufacturer's instructions.* Combination carbon monoxide and smoke alarms shall be listed *and labeled* in accordance with UL 2034 and UL 217.

315.2 When required. Carbon monoxide alarms shall be provided in accordance with Sections 315.2.1 and 315.2.2.

315.2.1 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

315.2.2 Alterations, repairs and additions. *In existing dwelling units, having fuel-fired appliances or an attached garage, where an application for approval is required for work involving any of the following areas or systems within that dwelling unit, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings:*

1. The addition or creation of a new sleeping room
2. An alteration of a sleeping room
3. An alteration in the immediate vicinity outside of a sleeping room;
4. An addition of, or an alteration to, an attached garage;
5. An addition, alteration, repair or replacement of a fuel-fired appliance.

315.3 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.

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

315.5 Interconnectivity. *Deleted*

315.6 Power source. *Deleted*

315.7 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 315.7.1 through 315.7.4.

315.7.1 General. Household carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed *and labeled* in accordance with UL 2075.

315.7.2 Location. Carbon monoxide detectors shall be installed in the locations specified in Section 315.3. These locations supersede the locations specified in NFPA 720.

315.7.3 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.

Exception. *Where separate carbon monoxide alarms are provided meeting all other requirements of this section, the carbon monoxide detection system is not required to be a permanent fixture of the occupancy or owned by the homeowner.*

315.7.4 Combination detectors. Combination carbon monoxide and smoke detectors installed in carbon monoxide detection systems in lieu of carbon monoxide detectors shall be listed *and labeled* in accordance with UL 2075 and UL 268.

SECTION 316 **FOAM PLASTIC**