

## 780 CMR (7th Edition)

### 5313 Life Safety Systems

#### 5313.2.9 Smoke Detector Required Locations within the dwelling unit.

Smoke detectors shall be installed in the following locations (also refer to Board of Building Regulations and Standards Official Interpretation No. 49-98):

1. In each bedroom (sleeping room).
2. Outside each separate bedroom (sleeping room) in the immediate vicinity of the bedroom (sleeping room).
3. Near the base of all stairs where such stairs lead to another occupied floor.
4. On each additional story of the dwelling, including basements and cellars but not including crawl spaces and unoccupied attics.
5. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke detector 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.
6. For each 1,200 square feet of area or part thereof.

#### 5313.2.10 Smoke Detector Required Locations in Common Areas of Two-family Dwellings.

In addition to the requirements of 780 CMR 5313.1.9.1 through .4., two-family dwellings that contain common areas such as basements, hallways and/or interior stairways that serve both dwelling units, but are not within the dwelling units, shall also be provided with smoke detectors and/or heat detectors, as required, in the following locations:

1. Smoke detectors—In all common basements.
2. Smoke detectors—In all common hallways.
3. Smoke detectors—In all common stairways on each level outside the dwelling unit doorways.
4. When common area smoke detectors are of the single/multiple-station type they shall be interconnected with listed compatible heat detectors containing a sounding device within

each dwelling unit. Said heat detectors shall be on every level within each dwelling unit and shall meet the audibility requirement of 780 CMR 5313.2 .4.

5. When common area smoke detectors are of the system type, there shall be at least one system-type alarm notification device that meets the requirements of 780 CMR 5313.2 .4 on each level within each dwelling unit
6. Dwelling unit smoke detectors shall only sound within the dwelling unit.

#### 5313.2.11 Photo-electric Smoke Detectors.

Any smoke detector located within 20 feet of a kitchen or a bathroom shall be a photo-electric type smoke detector.

Photo-electric type smoke detectors shall be allowed to be located closer than three feet horizontally from a kitchen or a bathroom door when hallway or other room size restricts detector mounting options.

Exception: A bathroom not containing a tub, shower, Jacuzzi or steam room.

#### 5313.2.12 Smoke Detector Placement.

Photoelectric type smoke detectors and combination photoelectric/ionization type smoke detectors shall be installed in accordance with the manufacturer's specific installation requirements. In the absence of manufacturer's recommendations, smoke detectors shall be mounted on the ceiling at least four inches from a wall or on a wall with the top of the alarm not less than four inches nor more than 12 inches below the ceiling.

**Exception:** Smoke detector placement for solid joist or beam construction or for high, sloped, shed or peaked ceilings all shall be in accordance with manufacturer's recommendations and NFPA 72.

### 5313.3 Heat Detectors.

#### 5313.3.1 Required Heat Detectors.

A single heat detector listed for the ambient environment shall be installed in:

1. Any integral garage ("garage under") or attached garage to the main house (detached garages do not require a heat detector).

2. A new addition attached garage to an existing dwelling shall require a single heat detector installed in the garage in accordance with all applicable criteria of 780 CMR 5313.
3. If the existing house contains a fire detection system that is compatible with the garage heat detector, then said garage heat detector shall be interconnected to the existing dwelling fire detection system. Where the dwelling-proper existing fire detection system is not compatible with the garage heat detector, the garage heat detector shall be connected to a sounder (occupant notification appliance) or compatible heat detector containing a sounding device, located in the dwelling proper and within 20 feet of the nearest door to the garage from the dwelling-proper. The required garage heat detector is not required to incorporate audible alarm notification nor is any audible notification device required in the garage.

#### 5313.3.2 Heat Detector Placement. For flat-finished ceilings.

The single heat detector shall be placed on or near the center of the garage ceiling; for sloped ceilings having a rise to run of greater than one foot in eight feet, the single heat detector shall be placed in the approximate center of the vaulted ceiling but no closer than four inches to any wall.

#### 5313.3.3 Heat Detector Interconnection.

The required single heat detector shall be listed for and required to be interconnected to all smoke detectors of the required household fire alarm system, such that the activation of the heat detector will activate all of the audible alarms of

### 5313.4 Carbon Monoxide Detectors.

Note: Also refer to 527 CMR 31.00 and 248 CMR as carbon monoxide detector required locations set forth in 527 CMR 31.00 and 248 CMR must also be satisfied.

#### 5313.4.1 General.

Carbon monoxide detectors shall either be: listed, interconnected 120V or shall be part of a listed low-voltage combination system or wireless system as defined in NFPA 720.

**5313.4.1.1 Secondary power to CO alarms:** All CO alarms shall have secondary (standby) power supplied from monitored batteries in accordance with NFPA 72.

For fire alarm control units (panels), the panel battery shall serve as the source of secondary electrical power. For wireless systems, the panel battery shall serve as the source of secondary electrical power.

#### 5313.4.2 Carbon Monoxide Detector Listing and Installation Requirements.

All carbon monoxide detectors shall be UL 2034 listed or UL 2075 listed, as applicable, and installed in accordance with the provisions of 780 CMR 51.00 through 99.00, the manufacturer's instructions, the listing criteria, 527 CMR 12.00 and NFPA 720. Required carbon monoxide detectors are not required to be interconnected to the required household fire alarm system but, where interconnection is desired, such carbon monoxide detectors shall be compatible with all interconnected fire devices and fire alarms shall have precedence over carbon monoxide alarms.

***Smoke Detectors Save Lives!***

### 5313.4.3 Carbon Monoxide Detector Required Locations.

One carbon monoxide detector shall be installed on each story of a dwelling unit, including basements and cellars (but not including crawl spaces and uninhabitable attics) in accordance with the manufacturer's instructions and the applicable requirements of NFPA 720. When mounting a carbon monoxide alarm on a story with a bedroom, the alarm, at a minimum, shall be located outside the bedroom. A carbon monoxide alarm shall be installed no more than ten ft. outside any bedroom door these requirements do not alter the fact that all bedrooms must be equipped with smoke detectors/alarms but if a combination appliance is utilized, note that for CO only purposes a CO alarm is required no more than ten feet from a bedroom door and outside of the bedroom per 527 CMR 31.00.

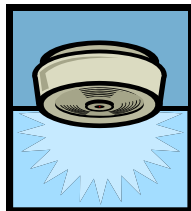
### 5313.4.4 Alarm Intensity.

All alarm-sounding appliances shall have a minimum rating of 85 dBA at ten feet.

### 5313.4.5 Maintenance.

It shall be the responsibility of the owner to properly maintain the carbon monoxide detectors in accordance with the manufacturer's instructions and NFPA 72.

Life safety systems are not required in any crawl spaces of unoccupied attics.



### Existing Buildings

#### 9304.8 Smoke, Heat Detection and Carbon Monoxide Alarm Systems and CO Detection and Alarm.

When one or more sleeping rooms are added or created in existing dwellings, the entire existing building shall be provided with smoke detectors, heat detector and carbon monoxide detectors designed, located and installed in accordance with the provisions for new construction, 780 CMR 5313, as applicable.

If a garage is created under an existing dwelling or attached to an existing dwelling, a heat detector, conforming to the requirements of the code for new construction shall be installed in the garage; such requirement is not applicable for detached garages (see 780 CMR 5313.2). If the dwelling undergoes complete reconstruction such that all walls and ceilings are open to framing, then the entire existing building shall be provided with smoke detectors, heat detector and carbon monoxide detectors designed, located and installed in accordance with the provisions for new construction (see 780 CMR 5313 inclusive and as applicable). In an existing two family dwelling, if one or more sleeping rooms are added or created in only one of the two dwelling units, the dwelling unit acquiring new sleeping rooms shall be provided with smoke detectors, heat detector and carbon monoxide detectors, as applicable, designed, located and installed in accordance with the provisions for new construction. In an existing two-family dwelling, if, during a repair/reconstruction event, one or more sleeping rooms are added or created in both of the two dwelling units, the entire building shall be provided with smoke detectors, heat detector and carbon monoxide detectors, as applicable, designed, located and installed in accordance with the provisions for new construction for two-family buildings

### Building Permit Application Submittal Check-List

- Smoke Detector in Basement\*
- Smoke Detector on each level at the base of each stairway leading to another occupied level\*
- Smoke Detector in each sleeping room\*
- Smoke Detector outside sleeping rooms\*
- Smoke Detector for each 1,200 Sq ft. per floor or portion thereof.\*
- Heat Detector in attached garages
- For 2 family dwellings with common areas one Smoke Detector on each level of common stairways and one Smoke Detector per 1,200 square feet or portion thereof of common basement connected to a Heat Detector with a built in horn in each dwelling unit to act as a sounding device
- CO Detector on each level including basements

CO detector within 10 feet of all bedroom doors

***\*Any Smoke Detector or Combination Smoke /CO Detector located within 20 feet (6096 mm) of a kitchen or a bathroom containing a tub, Jacuzzi, shower or steam room shall utilize photo-electric type smoke detector.***

**For further information please contact the Franklin Fire Department at 508-528-2323**



## Life Safety\* System Requirements For New And Renovated One and Two Family Dwellings

**\*(Smoke Detectors, Carbon Monoxide Detectors and Heat Detectors)**