

CHICOPEE FIRE DEPARTMENT

SMOKE DETECTOR GUIDELINES

2010

This document was created to assist members of the Chicopee Fire Department with smoke detector inspections. It has been revised due to a change in the state law. All members should become familiar with this material. It should be understood that we might be required to inspect a property that may have a slightly different floor plan than what we are accustomed to. Members should view this material as a minimum standard and with your knowledge of smoke travel within a building you will be able to make qualified decisions regarding smoke and heat detector placement in buildings. **Your primary objective is to ensure that all occupants of the building have a reasonable opportunity of being notified that a fire problem exists somewhere in the building.**

Dispatchers will forward to the Fire Prevention Office all requests for inspections of 6 families or greater. Fire Prevention will make appointments and Engine and or Ladder companies will assist on these inspections if needed.

When dispatchers receive an inspection request, they are to ask if it is a re-inspection, and forward the information to the company doing the inspection. Company members will then check the non-compliance forms.

Members shall have a copy of the guidelines during an inspection.

Members shall make building owners aware that copies of these guidelines are available in the office.

Owners or their designee are responsible for knowing how to test the system.

Should you fail an owner of a property, advise the owner what needs to be corrected and complete a noncompliance form.

Dispatchers shall advise the person requesting an inspection that payment for the certificate can only be made by check or money order.

Massachusetts General Law, chapter 148 section 26F

Mandates that upon the sale or transfer of certain homes, the seller must install approved smoke detectors. These requirements apply to residences that were built or modified prior to creation of the Massachusetts State Building Code (January 1, 1975). If a building has undergone renovation, addition or modification after Jan. 1, 1975, the date of the building permit determines the smoke detector requirements of that building code.

*The transfer law applies to residences with **five or less** residential units.*

Smoke Detector Requirements

In general, the requirements for smoke detectors vary depending on when the residence was constructed. For example, some residences may require battery-powered detectors, others might need interconnected hard-wired detectors only or a combination of both. Others might need interconnected hard-wired detectors with battery backup. On April 5, 2010, a significant change in the Massachusetts' smoke detector requirements will become effective for all residences subject to **MGL c. 148, s. 26F** upon sale or transfer. Now, all smoke detectors installed within 20 feet of kitchens or bathrooms (containing a bathtub or shower) will be required to be photoelectric detectors. The risk of nuisance alarms from steam and cooking is lower with photoelectric only detectors. All installed smoke detectors outside of 20 feet of kitchens or bathrooms (containing a bathtub or shower) must utilize either:

- **A DUAL detector** (containing both ionization and photoelectric technologies); OR
- **Two separate detectors** (one photoelectric and one ionization).

In residences not subject to **MGL c. 148, s. 26F (built after Jan. 1975)**, the smoke detector upgrade is recommended, but is not required by law.

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Definitions

Hardwired - A permanently wired and directly connected to an AC primary source of power. Either 110 volt or a low voltage (24-volt) fire protection system.

Interconnected - If more than one smoke or heat detector is required to protect an area, activation of any one detector will require all detectors to sound an alarm in:

a) Each dwelling unit

OR

b) In the common areas and basement

Secondary power source - 9-volt battery located in the detector for new construction or remodeling **OR** 24-volt batteries located in the annunciator panel in fire protection systems (Buildings with 6 dwelling units or more).

Photoelectric detectors - Any smoke detector located within 20 feet of an entryway to a kitchen or a bathroom containing a tub or shower is required to be a photoelectric detector. The 20-foot measurement shall include and extend into common areas of a multi-family dwelling, if applicable.

Additions and alterations - When one or more sleeping rooms are added or created in existing dwellings, the entire building shall be provided with smoke detectors designed and located as required for **new** construction.

Wall mounted detectors - Detectors shall be installed not less than 4 inches nor more than 12 inches from the ceiling and not less than 4 inches from a sidewall. Measurements are from the ceiling to the top of the detector.

Enclosed rear porches (Buildings with 2 or more dwelling units) - Porches on the first and second floor that are completely **enclosed** with glass or wood (screens are not included); that are connected by an **enclosed** stairway; and this area is a means of egress for more than one dwelling unit is required to have detection. Heat detectors located on each porch interconnected with smoke detectors in front or side exit way on each level and in the cellar. (The reason heat detectors are required on enclosed rear porches versus battery operated smoke detectors in an enclosed rear stairway is temperature. The temperature in the stairway which is within the building footprint should remain above 40 degrees. There are not battery operated heat detectors available, and newer codes require that electric detectors be interconnected.)

Owner's meter - Buildings with 3 or more dwelling units are to have the common area smoke and heat detectors on a meter that is controlled by the owner.

Hardwired Detectors- Hardwired detectors must be maintained. (No battery detector in place of a hardwired detector.)

Automatic fire department notification - Required in buildings with 13 or more dwelling units. This can be accomplished in two ways, (1) A Fire Department Master Box located on the building or (2) the fire protection system for the common areas of the building is monitored by a private company which notifies the fire department when this system is activated.

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SMOKE DETECTOR GUIDELINES

NEW CONSTRUCTION of 1 and 2 DWELLING UNITS and ADDITIONS and ALTERATIONS of EXISTING STRUCTURES

1. All detectors are to be hardwired, interconnected, with a secondary source of power.
2. Detectors are to be located;
 - ❖ In all bedrooms
 - ❖ Outside each separate sleeping area
 - ❖ At the base of the cellar stairs
 - ❖ At base of stairs leading to the floor above
 - ❖ On each level of habitation

NOTE: A smoke detector located within 20 feet of a kitchen or bathroom containing a tub or shower is required to be a photoelectric smoke detector.

EXISTING STRUCTURES

1 – Dwelling Unit

1. Detectors may be battery operated or electric depending on when the building was constructed. If the building has hardwired detectors, they must be maintained. Battery operated detectors may be used to supplement the existing hardwired system.
2. Detectors are to be located;
 - ❖ Outside each separate sleeping area **
 - ❖ At the base of the cellar stairs
 - ❖ At the base of the stairs leading to the floor above
 - ❖ On each level of habitation

** If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

2 – Dwelling Units

1. The requirement for an existing 2 – unit dwelling is the same as an existing 1 – unit dwelling, with one exception, if the building has enclosed rear porches that are used as a common means of egress from the building detection is required in this area.
2. Buildings **without** enclosed porches detectors are to be located;
 - ❖ Outside each separate sleeping area**
 - ❖ At the base of the cellar stairs
 - ❖ At the base of the stairs leading to the floor above
 - ❖ On each level of habitation

** If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.
3. Buildings **with** enclosed porches detectors are to be located;
 - ❖ Heat detectors are to be located on each porch and they are to be interconnected with hardwired smoke detectors in the front or side entrance and basement. The heat detectors must be equipped with a sounding device or horn strobes will be required.

AND

Battery operated detectors will be allowed in each dwelling unit at the following locations;

- ❖ Outside each separate sleeping area**
 - ❖ At the base of the stairs leading to the floor above
 - ❖ On each level of habitation
- ** If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

3 to 5 Dwelling Units

1. Smoke detectors are required to be hardwired and interconnected in common hallways, stairways, and cellar.
 2. If the rear porches and their attached stairways are enclosed and are a common means of egress for more than 1 dwelling unit heat detectors are required to be interconnected with the smoke detectors in the common areas. The heat detectors must be equipped with a sounding device or horn strobes will be required. See definition of enclosed porch.
 3. Battery operated smoke detectors are allowed in each dwelling unit in the following locations;
 - ❖ Outside each separate sleeping area**
 - ❖ At the base of the stairs leading to the floor above
 - ❖ On each level of habitation
 4. Owners meter required.
- ** If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 5 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

6 – 12 Dwelling Units

1. Buildings have 6 or more dwelling units and having common hallways, cellars, or stairways are required to have a **low voltage (24 volt)** fire protection system which includes an **annunciator panel** at grade level, **horn strobes**, and manual **pull stations** within 5 feet of all exits.
2. Fire protection system detectors are required to be hardwired, interconnected, and have a secondary source of power (24 volt batteries located in the annunciator panel) in common hallways, stairways, cellar and if the building has enclosed porches, heat detectors on porches. See definition of enclosed porch.
3. Because low voltage smoke and heat detectors are not equipped with sounding devices, horn strobes are a required part of the fire protection system. **A horn strobe should be located in the cellar and on alternating floors of the front and rear exits.** Example: cellar, and 1st and 3rd floor front exit and 2nd and 4th floor rear exit. The rear exit may be an open porch, we require that horn strobe(s) be located on open porches.
4. Battery operated smoke detectors are allowed in the apartments. However, if the units are equipped with hardwired detectors they must be maintained and the unit supplemented with battery operated detectors. Smoke detectors are to be located;
 - ❖ Outside each separate sleeping area**
 - ❖ At the base of the stairs leading to the floor above
 - ❖ On each level of habitation** If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

13 or More Dwelling Units

The fire protection system for properties of this size is the same as for buildings that have 6 to 12 unit dwellings, with one exception. Buildings of this size are required to have **automatic fire department notification**. See definition of automatic fire department notification.

Common scenarios

A **two story** 3 dwelling unit building with two front doors. One door only accesses the first floor unit. The other front door accesses a stairway that leads to the 2nd and 3rd units. Hardwired interconnected smoke detectors would be required: in the cellar, in the first floor unit living area (this is the only way they would be notified of a fire anywhere else in the building), and the common stairway for the 2nd and 3rd units. If there are no doors or obstructions between the front door and the top of the stairs for the 2nd and 3rd units the detector at the base of those stairs may be eliminated. If this was a 3 story building a hardwired interconnected smoke detector would be added to the third floor landing.

A building having business(es) on the first floor and dwelling unit(s) above or attached. The first floor business(es) is required to have hardwired heat detector(s), the basement(s) must have a hardwired smoke detector and a hardwired smoke detector must be located either in the apartment or in an enclosed exit way for the apartment. These detectors must be interconnected.

An existing two story, 2 dwelling unit building with one front door and an open porch and stairway in the rear that is used as an exit for both units. This building is allowed to be equipped with battery operated smoke detectors throughout. However, this same building but the rear porches and stairway are enclosed. This building would require hardwired heat detectors on each enclosed rear porch interconnected to hardwired smoke detectors in the cellar, and front entrance (1st and 2nd floors).
