

Requirements for Smoke and Heat Detectors New Construction and Resale of Single Family Homes

Massachusetts General Law Chapter 148 Section 26F requires homes be equipped with working smoke detectors and requires inspection for compliance before the home may be sold. Inspections are conducted by the fire department to ensure compliance. If the home is found to be compliant, a certificate is issued to the seller at the time of inspection. This certificate must be presented at closing in order for the sale to be finalized.

There are two detection methods used in smoke detectors, ionization and photoelectric. Ionization type detectors have a current running between two electrodes. Smoke entering the detector interrupts the current and sets off the alarm. Ionization detectors are often faster responding than photoelectric detectors. Ionization detectors however, are unable to differentiate between smoke and steam and are therefore prone to false alarms when steam from a shower or cooking interrupts the current.

Photoelectric detectors emit a beam of light. In the absence of smoke, the beam passes from point to point in a straight line. When smoke crosses the beam, the light is scattered by the smoke particles and the alarm is triggered. Photoelectric detectors are less prone to false alarms from steam or cooking but can take longer than ionization detectors to alarm.

For these reasons, the Commonwealth of Massachusetts has adopted 527 CMR 32.00 requiring both types of detectors, or combination units be installed in certain buildings.

Requirements are as follows:

Homes built prior to 1975 must have smoke detectors, they may be ***battery operated or interconnected and hard wired***. There shall be one located on each level including basements and accessible attics. Levels having an area of 1200 square feet or more must have 1 additional detector remote of the first, one additional detector for each additional 1200 square feet.

Smoke detectors shall be located on the ceiling at the bottom of each stairway leading to the floor above and outside of each sleeping area.

Homes built between July of 1976 and August of 1997 must have smoke detectors that are ***interconnected and hard wired*** to the homes electrical system. The locations of these detectors are the same as those in homes built prior to 1975.

Homes built from September 1997 to December of 2010 must have smoke detectors that are ***interconnected, hard wired*** and have a ***battery back up***. There shall be one located on each level, including basements and accessible attics. In addition, each bedroom shall have a smoke detector interconnected and hard wired to the system. Levels having an

area of 1200 square feet or more must have 1 additional detector remote of the first. (One additional detector is required for each additional 1200 square feet).

Homes built after January 1, 2010 must meet all of the requirements of homes built after September 1997 but are required to use combination photoelectric/ionization type smoke detectors with the following exception:

- “A smoke detector installed within 20 feet of an entryway to a kitchen, or bathroom containing a bath tub or shower, shall not utilize ionization technology to determine an alarm condition.” (527 CMR 32)

Effective April 1, 2010, the requirement for combination photoelectric/ionization type smoke detectors shall be the applicable standard for sellers to comply with the provisions of MGL Ch. 148 Sec. 26F. This is a requirement for the type of detectors; it **does not** require all detectors to be hard wired and interconnected.

Requirements for ***New Construction*** also apply to additions and/or renovations where a bedroom is added or the building is substantially altered. In this case the entire existing home must be brought up to the present standard, regardless of the age of the house. (Massachusetts Building Code 780 CMR)

Heat Detectors are required in attached garages built after 1997 as follows:

- Any integral garage (garage under) or garage attached to the main house. (Detached garages do not require heat detectors).
- Must be ***interconnected and hard wired*** to the residential alarm system where present.
- Installation of heat detectors to comply with Massachusetts Building Code 780 CMR 5313.