



Northville Township Fire Department

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Smoke and Carbon Monoxide (CO) Alarms

The Northville Township Fire Department has prepared this document to summarize the requirements and recommended practices for smoke and carbon monoxide (CO) alarm placement in your home. With the increasing number of smoke and CO alarms available today, fire protection displays at local retailers can leave residents confused about which alarm type and/or features to purchase. The primary types of alarms include smoke, CO and combination smoke and CO. However, current technology includes other features, such as hardwired, interconnected, sealed-10 year battery, ionization and photoelectric, Wi-Fi connected and others. At a minimum, every home should have both smoke and CO alarms installed on every level. Please use the following guide to determine what to look for, the common nomenclature and the use of each type of device.

Alarm types

- **Ionization smoke alarms** are more responsive to flaming fires. These devices utilize a small amount of radioactive material between two electrically charged plates, which ionizes the air and causes the current to flow between the plates. When smoke enters the chamber, it disrupts the flow of ions, thus reducing the current flow and activating the alarm (NFPA).
- **Photoelectric smoke alarms** are more responsive to smoldering fires. These devices aim a light source into a sensing chamber angled away from the sensor. When smoke enters the chamber, it reflects light onto the sensor and triggers the alarm (NFPA).
- **Combination smoke alarms**. Includes both ionization and photoelectric technology in one unit.
- **Combination smoke and CO alarms**. Includes both smoke and CO technology in one unit.

Power type

- Battery operated (requires annual replacement).
- 10 year, sealed unit, lithium ion battery operated. No battery replacement required.
- 120 volt hardwired with battery back-up (replaceable or sealed, 10 year lithium ion).

Interconnectivity

- Hardwired and interconnected (120 volt).
- Wirelessly interconnected (radio frequency).

Where to install

- Every bedroom.
- Hallways outside of each sleeping area.
- Every level of the home including the basement.
- Larger homes may require additional alarms.

DO's

- **DO** Read all the manufacturer's recommended instructions.
- **DO** install devices near stairways to utilize the chimney effect of fires.
- **DO** install an alarm in all areas that someone sleeps including basements, living rooms, etc.
- **DO** install a device near the center of the room so it is close to all areas of the room.
- **DO** mount on the ceiling when possible. Keep devices a minimum of 4" from the side walls.
- **DO** mount the top of the alarm between 4" and 12" from the ceiling when mounted on the wall.
- **DO** install alarms within 3' horizontally and a minimum of 4" from the peak on peaked ceilings.

- **DO** purchase a device with a “hush” or silence feature and/or install a photoelectric alarm in kitchen areas as kitchen alarms are more prone to nuisance alarms.

DON'Ts

- **DON'T** install in the garage. Heat detectors may be utilize in this application. See manufacturer.
- **DON'T** install in areas that are below 40°F or greater than 100°F (attics, garages, etc.)
- **DON'T** install in dusty areas.
- **DON'T** install in humid areas (bathrooms, near showers, etc.).
- **DON'T** install alarms within 3' of bathroom doors that have a bathtub or shower.
- **DON'T** install alarms within 3' of ceiling fan blades, forced air ducts, attic fans, etc.

Other available features

- **Deaf or hard-of-hearing.** Alarms for the deaf or hard-of-hearing include strobe lights, low pitched sounds and/or bed shakers that work with existing smoke/CO alarms in your home.
- **Hallway alarms.** Has a bright LED light that helps to light the hallway or escape path.
- **Bedroom.** May include a voice feature that assists in waking up from sleep.
- **Kitchen.** Normally a photoelectric smoke alarm that utilizes a sensing algorithm to detect real fires faster and reduce false alarms. May also include HUSH or silence button.
- **HUSH/silence button.** A button included on an alarm that may temporarily silence false alarms.
- **Hardwire replacement package.** Includes adapters to connect to the existing wiring harness and connect to the new alarm device.
- **Smart home technology.** There are a variety of products now available that allow you to connect your smoke and/or CO alarm systems to a smart home suite of products. These devices can connect to your Wi-Fi and alert you of an activation via text, email or smartphone app.
- **“Worry-free.”** Brand specific name for devices with a sealed, 10 year, lithium-ion battery. These devices do not require annual battery replacement and chirp to notify you when they reach 10 years.

Replacement, testing, and maintenance

- **Replacement.** Replace all alarms that are 10 years old or older.
- **Batteries.** Devices with replaceable batteries should be replaced every annually.
- **Testing.** Press the test button monthly to verify the device is operating. Remember that this only tests the audible capacity of the device and not the sensing components.

Tips

- **Front loading battery door.** If you do purchase alarms that require battery replacement, purchase one with a front loading battery door to make replacement easier and safer.
- **Know your limits.** Hire a qualified professional to install hardwired smoke alarms.
- **Ladder safety.** Do not operate on a ladder if you do not feel comfortable doing so. Ask a neighbor, friend or family member to help.
- **Help.** Contact the fire department for assistance before putting yourself in an unsafe situation.

Please visit northvilletownshipfire.org, usfa.fema.gov, and nfpa.org/smokealarms for more information or contact us at (248) 348-5807 or via email at firemarshal@twp.northville.mi.us.

Respectfully,

Office of the Fire Marshal