



CARBON MONOXIDE DETECTORS – RESIDENTIAL UNITS

Carbon monoxide (CO), known as the *Invisible Killer*, is a colorless, odorless, poisonous gas that results from incomplete burning of fuels such as natural gas, propane, oil, wood, coal, and gasoline. Exposure to carbon monoxide can cause flu-like symptoms and can be fatal.

Residential buildings that contain fossil burning fuel equipment (i.e., oil, gas, wood, coal, etc.) or contain enclosed parking are required to have carbon monoxide detectors.



What are the symptoms of CO poisoning?

CO poisoning victims may initially suffer flu-like symptoms including nausea, fatigue, headaches, dizziness, confusion and breathing difficulty. Because CO poisoning often causes a victim's blood pressure to rise, the victim's skin may take on a pink or red cast.

How does CO affect the human body?

When victims inhale CO, the toxic gas enters the bloodstream and replaces the oxygen molecules found on the critical blood component - hemoglobin, depriving the heart and brain of the oxygen necessary to function.

- **Mild exposure:** Often described as flu-like symptoms, including slight headache, nausea, vomiting, fatigue.
- **Medium exposure:** Severe throbbing headache, drowsiness, confusion, fast heart rate.
- **Extreme exposure:** Unconsciousness, convulsions, cardio respiratory failure, death.

Many cases of reported carbon monoxide poisoning indicate that while victims are aware they are not well, they become so disoriented, that they are unable to save themselves by either exiting the building or calling for assistance. Young children and household pets are typically the first affected.

If you think you have symptoms of carbon monoxide poisoning or your CO alarm is sounding, contact the Fire Department (911) or University Operations Center (5-5560) and leave the building immediately.



When will the CO detector alarm?

Underwriters Laboratory (UL) approved carbon monoxide detectors will alarm under the following conditions

- The sensor is adjusted not to detect CO levels below 30 PPM and will not alarm when exposed to constant levels of 30 PPM for 30 days.
- It will alarm at the following levels under 30% to 70% relative humidity:

Carbon Monoxide Levels	Duration of Exposure
400 PPM CO	4 and 15 minutes
150 PPM CO	10 and 50 minutes
70 PPM CO	60 and 240 minutes.

Carbon monoxide alarms are intended to alarm at carbon monoxide levels below those that cause a loss of ability to react to the danger of carbon monoxide exposures.

Some carbon monoxide detection systems are monitored and will alarm to a central fire alarm or the University Operations Center.

Where are CO alarms located?

In most residences, carbon monoxide alarms are required to be located on every level of a home or dwelling unit including habitable portions of basements and attics. **On levels with sleeping areas, the alarms must be placed within ten feet of the bedroom doors.**

CO alarms do not go inside garages, but in the adjacent living areas.

Alternative Compliance Option

This option allows for the “cocooning” of carbon monoxide generating equipment with carbon monoxide monitoring devices in the rooms containing carbon monoxide generating equipment and adjacent spaces. This type of monitoring is typically used in a building that may have a single source of CO generating equipment (such as a natural gas hot water heater) while the building is heated with supplied steam from a central plant with no carbon monoxide generating equipment located in the building.

All areas or rooms containing centralized fossil fuel burning equipment and adjacent spaces shall employ carbon monoxide alarm protection meeting UL 2034 or UL 2075, and shall be monitored in accordance with NFPA 720, 5.3.9.



Tenants should learn to recognize the difference between the smoke detector and the carbon monoxide alarms. If there are any problems with the carbon monoxide detector, report it immediately to the landlord/building manager.

Landlord Responsibilities

Landlords must install CO alarms in each dwelling unit. Landlords also must inspect, test and maintain the CO alarms at least once a year or at the beginning of any rental period (such as lease renewal). Batteries are required to be replaced once a year.

The Massachusetts Board of Fire Prevention Regulations has adopted the regulation (527 CMR 1.00 based on the 2012 edition of NFPA 1), which details the specific requirements of the law including the type, location, maintenance and inspection requirements for the alarms.