



CITY OF NEWPORT BEACH

COMMUNITY DEVELOPMENT DEPARTMENT

LIFE SAFETY SERVICES

GUIDELINES AND STANDARDS

GUIDELINE E.05 – Carbon Monoxide Detection (CO) in New and Existing Buildings

E.05.1 PURPOSE

The purpose of this guideline is to provide information and requirements for Carbon Monoxide (CO) Detection in new and existing buildings. CO detectors shall be installed as per California Fire Code (CFC) Section 915 and Health and Safety Code Section 17926.

E.05.2 SCOPE

This guideline shall apply to buildings in occupancies of I-2, I-4, R, in classrooms in Group E occupancies, and in dwelling units, sleeping units and classrooms located in buildings that contain fuel-burning appliances, fuel-burning fireplaces, a fuel-burning, and forced-air furnaces, or buildings with attached private garages.

See CFC 915.1.4 for requirements for fuel-burning appliances located outside of dwelling unit, sleeping units, and classrooms.

E.05.3 DEFINITIONS

Carbon Monoxide: A colorless, tasteless, odorless gas that interrupts the attachment of oxygen molecules to hemoglobin in blood cells and can cause headaches, confusion and dizziness. At higher concentrations, CO can cause loss of consciousness and eventual death. Exposure above 100 parts/million are dangerous to human health. CO is classified as a flammable gas.

Carbon Monoxide Alarm: A single or multiple-station carbon monoxide alarm intended for the purpose of detecting carbon monoxide gas and alerting occupants by a distinct audible signal comprising an assembly that incorporates a sensor, control components, and an alarm notification appliance in a single unit operated from a power source either located in the unit or obtained at the point of installation.

Carbon Monoxide Detector: A device having a sensor that responds to carbon monoxide gas that is connected to an alarm control unit.

Carbon Monoxide Detection System: A system or portion of a combination system that consists of a control unit, components, and circuits arranged to monitor and annunciate the status of carbon monoxide alarm initiating devices and to initiate the appropriate response to those signals.

Dwelling Unit: A building that contains one or two dwelling units used, intended or designed to be used, rented leased, let or hired out to be occupied for living purposes.

Forced-Air Furnace: A furnace equipped with a fan or blower that provides the primary means for circulation of air.

Fuel-Burning Appliance: A device that burns solid, liquid, or gaseous fuel or a combination thereof.

Single-Station Carbon Monoxide Alarm: A detector comprising an assembly that incorporates a sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation. [72, 2013]

Sleeping Unit: A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

E.05.4 PROCEDURE

Carbon monoxide detection shall be installed in accordance with the manufacturer's published instructions.

Locations of CO detectors in new and existing buildings shall be as follows:

Dwelling Units and Sleeping Units:

1. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
2. On every occupiable level of a dwelling unit, including basements.
3. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, CO detection shall be installed within the bedroom

Sleeping Units:

CO detection shall be installed in sleeping units:

Exception: Carbon monoxide detection shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom does not contain a fuel-burning appliance and is not served by a forced air furnace.

Group E Occupancies:

CO detection shall be installed in classrooms in Group E occupancies. CO alarm signals shall be automatically transmitted to an on-site location that is staffed by school personnel.

Exception: Carbon monoxide alarm signals shall not be required to be automatically transmitted to an on-site location that is staffed by school personnel Group E occupancies with an occupant load of 30 or less.

E.05.5 DETECTION EQUIPMENT

Carbon monoxide detection shall be provided through carbon monoxide alarms or through a carbon monoxide detection system. Combination carbon monoxide/smoke alarms are an acceptable alternative to carbon monoxide alarms

E.05.6 CARBON MONOXIDE ALARM REQUIREMENTS

Carbon monoxide alarms shall comply with the following:

CO alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that require for overcurrent protection.

Exceptions can be found in Section 915.4.1 California Fire Code.

- CO alarms shall be listed in accordance with UL 2034.
- Where more than one carbon monoxide alarm is required to be installed within a dwelling unit or within a sleeping unit in Group R occupancies, the alarms shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit. ***Exceptions can be found in Section 915.4.4 California Fire Code.***
- CO alarms shall be located in areas as referenced in “Procedure” section of this Guideline.
- In buildings containing covered multi-family dwellings, all required CO alarms shall be equipped with the capability to support visible alarm notification in accordance with NFPA 720.

E.05. 7 CARBON MONOXIDE DETECTION SYSTEMS

Carbon monoxide detection systems shall comply with the following:

- CO detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.
- CO detectors shall be located in areas as referenced in “Procedure” section of this Guideline.

E.05.8 MAINTENANCE

Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon detections that become inoperable or begin producing end-of-life signals shall be replaced.

- Combination CO/smoke alarms requirements for listing and approval is by the Office of the State Fire Marshal for smoke alarms.