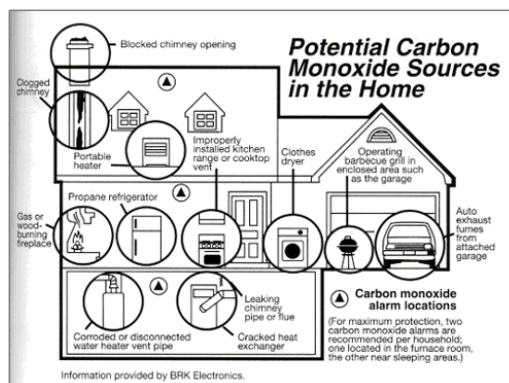


# CARBON MONOXIDE ALARMS



COMMUNITY  
PLANNING  
DEPARTMENT  
507-537-6773

[www.ci.marshall.mn.us](http://www.ci.marshall.mn.us)



Carbon monoxide (CO) is a toxic, colorless, odorless gas that is formed as a product of incomplete combustion of natural gas, diesel, oil, kerosene, propane, or any other carbon compound. CO is found in fumes produced any time you burn fuel in cars or trucks, small engines, stoves, lanterns, grills, fireplaces, gas ranges, natural gas heaters, furnaces or any other fuel burning appliance. CO can build up indoors and poison people and animals who breathe it. The most common symptoms of CO poisoning are headache, dizziness, weakness, upset stomach, vomiting, chest pain, and confusion. CO symptoms are often described as “flu-like.” If you breathe in a lot of CO it can make you pass out or kill you. People who are sleeping or drunk can die from CO poisoning before they have symptoms. Everyone is at risk for CO poisoning. Infants, the elderly, people with chronic heart disease, anemia, or breathing problems are more likely to get sick from CO. Each year, more than 400 Americans die from unintentional CO poisoning not linked to fires, more than 20,000 visit the emergency room, and more than 4,000 are hospitalized. The best way to protect yourself is to install CO detectors in your home as required by the Code.

Carbon monoxide alarms are required by the Minnesota Building Code in new construction and ***whenever there is a building permit issued for an addition or interior work, including windows and doors replacement, in an existing dwelling unit or townhouse that contains a fuel-fuel fired appliance or an attached garage.***

In existing dwellings, any time a building permit is issued for any house construction work, excluding mechanical work, reroofing, residing, or deck addition, carbon monoxide alarms must be installed.

Carbon monoxide alarms must be installed on each floor containing sleeping rooms within ten feet of each bedroom. One CO alarm may serve more than one bedroom if installed within required distance. The Minnesota Building Code permits either single station alarms or approved systems.

*Before calling for a final inspection,* it is your responsibility to ensure that all detectors are properly placed, as they will be checked as a part of that inspection. Permit applicants are responsible for compliance.

## The text from the 2020 Minnesota State Building Code follows:

### R315.1 General.

Carbon monoxide alarms shall comply with Section R315.

#### R315.1.1 Listings.

Carbon monoxide alarms shall be *listed* in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be *listed* in accordance with UL 2034 and UL 217.

### R315.2 Where required.

Carbon monoxide alarms shall be provided in accordance with Sections R315.2.1 and R315.2.2.

#### R315.2.1 New construction.

For new construction, every one-family dwelling unit, each unit in a two-family dwelling unit, and each townhouse dwelling unit shall be provided with an approved and operational carbon monoxide alarm where one or both of the following conditions exist.

1. The *dwelling unit* contains a fuel-fired *appliance*.
2. The *dwelling unit* has an attached garage with an opening that communicates with the dwelling unit.

#### R315.2.2 Alterations, repairs, and additions.

An individual *dwelling unit* shall be equipped with carbon monoxide alarms located as required for new *dwellings* where:

1. Alterations, repairs (including installation or replacement of windows or doors), or additions requiring a building permit occur; or
2. One or more sleeping rooms are added or created in existing dwellings.

#### Exceptions:

- > 1. Work involving the exterior surfaces of *dwellings*, such as the replacement of roofing or siding, the addition of an open porch or deck, or chimney repairs.
- 2. Installation, alteration, or repairs of plumbing, electrical, or mechanical systems.

### R315.3 Location.

Carbon monoxide alarms in *dwelling units* shall be installed outside of and not more than 10 feet (3048 mm) from each separate sleeping area or bedroom. Alarms shall be installed on each level containing sleeping areas or bedrooms. Where a fuel-burning *appliance* is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

### R315.4 Combination alarms.

Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

### R315.5 Interconnectivity.

Where more than one carbon monoxide alarm is required to be installed within an individual *dwelling unit* in accordance with Section R315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual *dwelling unit*. Physical interconnection of carbon monoxide alarms shall not be required where *listed* wireless alarms are installed and all alarms sound upon activation of one alarm.

**Exception:** Interconnection of carbon monoxide alarms in existing areas shall not be required where *alterations* or *repairs* do not result in removal of interior wall or ceiling finishes exposing the structure.

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### R315.6 Power source.

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

#### Exceptions:

1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Carbon monoxide alarms installed in existing areas shall be permitted to be battery powered provided any alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.

In addition to the Building Code requirements for CO alarms, there is also a state statute passed by the Minnesota Legislature that applies to all dwellings in the state. It is more restrictive than the state building code. It requires **all** dwellings regardless of age and construction activity to have carbon monoxide alarms. The statute has some unique requirements that differ from the Building Code. CO alarms are required whether or not a permit is ever obtained. The statute requires CO alarms in all dwellings even if there are no fuel burning appliances or attached garages. Also, the statute only recognizes single station detectors and not systems.

The text from the Statute follows:

### **Minnesota Statutes 299F.50**

#### **[299F.50] DEFINITIONS.**

Subdivision 1. **Scope.** As used in sections 299F.50 to 299F.52, the terms defined in this section have the meanings given them.

Subd. 2. **Installed.** "Installed" means that an approved carbon monoxide alarm is hard-wired into the electrical wiring, directly plugged into an electrical outlet without a switch, or, if the alarm is battery-powered, attached to the wall of the dwelling.

Subd. 3. **Single and multifamily dwelling.** "Single and multifamily dwelling" means any building or structure which is wholly or partly used or intended to be used for living or sleeping by human occupants.

Subd. 4. **Dwelling unit.** "Dwelling unit" means an area meant for living or sleeping by human occupants.

Subd. 5. **Approved carbon monoxide alarm.** "Approved carbon monoxide alarm" means a device meant for the purpose of detecting carbon monoxide that is certified by a nationally recognized testing laboratory to conform to the latest Underwriters Laboratories Standards (known as UL2034 standards).

Subd. 6. **Operational.** "Operational" means working and in service.

**EFFECTIVE DATE.** This section is effective January 1, 2007, for all newly constructed single family and multifamily dwelling units for which building permits were issued on or after January 1, 2007; August 1, 2008, for all existing single family dwelling units; and August 1, 2009, for all multifamily dwelling units.

#### **[299F.51] REQUIREMENTS FOR CARBON MONOXIDE ALARMS.**

Subdivision 1. **Generally.** Every single family dwelling and every dwelling unit in a multifamily dwelling must have an approved and operational carbon monoxide alarm installed within ten feet of each room lawfully used for sleeping purposes.

Subd. 2. **Owner's duties.** The owner of a multifamily dwelling unit which is required to be equipped with one or more approved carbon monoxide alarms must:

- (1) provide and install one approved and operational carbon monoxide alarm within ten feet of each room lawfully used for sleeping; and
- (2) replace any required carbon monoxide alarm that has been stolen, removed, found missing, or rendered inoperable during a prior occupancy of the dwelling unit and which has not been replaced by the prior occupant prior to the commencement of a new occupancy of a dwelling unit.

Subd. 3. **Occupant's duties.** The occupant of each dwelling unit in a multifamily dwelling in which an approved and operational carbon monoxide alarm has been provided and installed by the owner must:

- (1) keep and maintain the device in good repair; and
- (2) replace any device that is stolen, removed, missing, or rendered inoperable during the occupancy of the dwelling unit.

Subd. 4. **Battery removal prohibited.** No person shall remove batteries from, or in any way render inoperable, a required carbon monoxide alarm.

Subd. 5. **Exceptions; certain multifamily dwellings and state-operated facilities.**

(a) In lieu of requirements of subdivision 1, multifamily dwellings may have approved and operational carbon monoxide alarms installed between 15 and 25 feet of carbon monoxide producing central fixtures and equipment provided there is a centralized alarm system or other mechanism for responsible parties to hear the alarm at all times.

(b) An owner of a multifamily dwelling that contains minimal or no sources of carbon monoxide may be exempted from the requirements of subdivision 1, provided that such owner certifies to the commissioner of public safety that such multifamily dwelling poses no foreseeable carbon monoxide risk to the health and safety to the dwelling units.

(c) The requirements of this section do not apply to facilities owned or operated by the state of Minnesota.

**EFFECTIVE DATE.** This section is effective January 1, 2007, for all newly constructed single family and multifamily dwelling units for which building permits were issued on or after January 1, 2007; August 1, 2008, for all existing single family dwelling units; and August 1, 2009, for all multifamily dwelling units.