

Minnesota Department of Public Safety State Fire Marshal Division

Group I-1, I-2, and R Occupancy Carbon Monoxide (CO) Detection-Flow Chart

State Fire Marshal Division Notes

- This flow chart is designed to aid Code Officials, Architects, Design Professionals and similar in the navigation through the Minnesota State Fire Code.
- This flow chart applies to new and existing Group I-1, I-2 and R dwelling and sleeping units.
- **Effective August 01, 2024:** All rooms or areas used for sleeping within a guest room of a hotel shall have a carbon monoxide alarm in accordance with [Minn. Stat. 299F.51](#).
- **Effective August 01, 2024:** To meet the multi-family exception of [Minn. Stat. 299F.51](#), Subdivision 5, only carbon monoxide detectors shall be used.
- **CARBON MONOXIDE ALARM.** A single- or multiple station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.
- **CARBON MONOXIDE DETECTOR.** A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

CO alarm requirements

- CO alarms: Shall only be installed within sleeping and dwelling units.
- Power supply: Hardwired with battery backup.
 - Exception 1: Battery only approved if no commercial power present.
 - Exception 2 (Existing): Battery only approved if CO alarms not required at time of construction.
- Listing: UL 2034.
- Combination alarms: Combination smoke and CO alarms listed to UL 217 and UL 2034 approved.

CO detection system requirements

- CO detectors: Shall be installed in alternate locations in lieu of CO alarms.
- Standard: NFPA 720, CO detectors listed to UL 2075.
- Locations: As specified in MSFC Section 915.2.
- Combination detectors: Listed to UL 268 and UL 2075.



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- Notification appliances shall be installed in the area(s) where the detection devices are installed.
- The system shall annunciate to a constantly attended location or supervising station.

General CO detection location requirements

- Dwelling unit: Within 10 feet of bedrooms **or** within bedrooms containing fuel-burning appliances.
- Sleeping unit: Within sleeping unit.
 - *Alternate 1:* Detector located within 10 feet of sleeping units when units do not contain fuel-burning appliances or are served by forced air fuel-burning appliances.
- In multi-family dwellings without fuel-burning appliances within the dwelling units, carbon monoxide detectors may be placed 15 to 25 feet from the central fuel-burning appliances.

When required and alternate CO detection location requirements

Note: More than one condition may apply

- When a dwelling unit or sleeping unit is served by a forced air fuel-burning appliance.
 - *Alternate:* Single detector approved in first room or area served by the main supply duct from the furnace.
- When a dwelling unit or sleeping unit building containing a fuel-burning appliance.
 - Exception 1: CO detection not required when no communicating openings between the fuel-burning appliance(s) and sleeping/dwelling units.
 - *Alternate 1:* Detector in approved location between the fuel-burning appliance(s) and sleeping/dwelling units.
 - *Alternate 2:* Detector located on the ceiling of rooms containing the fuel-burning appliance(s).
- When a dwelling unit or sleeping unit building has an attached garage.
 - Exception 1: CO detection not required when no communicating openings between garage and sleeping/dwelling units.
 - Exception 2: CO detection not required when sleeping/dwelling units are more than 1-story above or below the garage.
 - Exception 3: CO detection not required when the garage is attached to sleeping/dwelling units by open-ended corridor (breezeway).
 - *Alternate:* Detector in approved location between garage and sleeping/dwelling units.
 - Exempt garages: Open parking garages or enclosed garages complying with Minnesota Building Code Section 406.4.



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Maintenance

- Enclosed garage detection: Maintained in accordance with Minnesota Mechanical Code Section 404.1, manufacturer instructions and listing.
- End-of-life: Devices that become inoperable or sound end-of-life signals shall be replaced.

Multi-family dwelling unit with little or no sources of carbon monoxide

An owner of a multifamily dwelling that contains minimal or no sources of carbon monoxide may be exempted from the requirements of MN Statute 299F.51, 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. For additional information on this subject please follow the link to the [Carbon Monoxide Commissioner Certification of Exemption](#) form.

Please consider when completing the certificate of exemption that the following are common sources of carbon monoxide that can be hazardous to human occupants:

- Gas, oil, wood, coal, kerosene or corn furnaces, heaters, boilers, and stoves
- Gas, charcoal grills allowed within a building
- Gas or oil water heaters
- Gas clothes dryers
- Gas ovens
- Gas kitchen range
- Gas fryers or other gas kitchen appliances
- Portable fuel or gas heaters
- Gas, oil, wood fireplaces
- Other fuel burning appliances
- Attached or tuck-under parking garage

STATE OPERATED FACILITIES

The requirements outlined in MN Statute 299F.51 do not apply to facilities owned or operated by the state of Minnesota.

If you have additional questions or need further information on the carbon monoxide legislation please contact the State Fire Marshal division at 651-201-7221, visit our [website](#) or e-mail your questions to fire.code@state.mn.us.

