

Carbon Monoxide Detectors are Required By State and Local Laws

The Alaska State Legislature passed House Bill 351 in 2004 that requires installation of a carbon monoxide detector in most dwelling units in Alaska as of January 1, 2005 (AS 18.70.095(a)). The City and Borough of Juneau (CBJ) has adopted carbon monoxide detector regulation as part of its building code adoption in Title 19.03.907.2.24 and 19.04.R324. Additional Alaskan State Fire Marshal (SFM) carbon monoxide detector and alarm requirements included with their adoption of the 2006 International Building Code (13 AAC 50.20 Building Code (30)) is included in the requirements stated in this handout. Specifically, the additional SFM requirements apply to institutional occupancies Group I-1 (group homes, congregate care facilities, etc.) and Group I-2 (hospitals, nursing homes, etc.) as well as all other types of residential occupancies that contain or are serviced by a combustion appliance; or has an attached garage or carport; or is adjacent to other vehicle parking within 25 feet of any direct opening.

Carbon monoxide can be produced inside a home containing appliances which burn carbon-containing fuels including coal, wood, charcoal, natural or propane gas, kerosene and fuel oil. It is produced by incomplete combustion or poor ventilation of fuel-burning appliances such as oil or gas furnaces, gas cooking appliances, water heaters, room heaters (such as Monitor® and Toyo® Heaters), fireplaces, wood stoves, generators and any apparatus that burns fuel. Carbon monoxide is the same toxic gas that comes out of the tail pipe of your car.

Remember that smoke detectors do not detect carbon monoxide, just as carbon monoxide detectors do not detect smoke or products of combustion. There are now detectors on the market that do detect both smoke and carbon monoxide. They are specifically advertised as combination units.

Buildings that have one, two, or three dwelling units must comply with CBJ laws that require carbon monoxide detector installation per the manufacturer's recommendations. Additional specific recommendations can be found at the end of this handout.

Minimum CBJ Requirements: (after January 1, 2007) per CBJ regulations and State House bill 351

- The number of CO Alarms will depend on the size and layout of your house.
- At least one A/C or D/C Carbon Monoxide (CO) Alarm is required on each level of dwelling unit.
- Must be installed per manufacturer's installation instructions.
- Place a CO Alarm on story above and story below and adjacent to any room that contains a boiler, water heater, furnace or other carbon-based heating appliance.
- Place CO Alarm inside the dwelling near the door attached to garage, carport, or adjacent parking space.

The following Alaska State Fire Marshall regulations effective September 13, 2007 apply to **buildings with greater than 3 dwelling units or that are classified as occupant Groups I-1 or I-2:**

Carbon Monoxide Detectors and Alarms. These provisions shall apply to Occupant Groups Institutional-1, Institutional-2, and all Residential occupancies. At least one carbon monoxide detector or alarm shall be installed on each floor level. If a floor level contains bedrooms or sleeping rooms, at least one detector shall be located in the immediate vicinity of the sleeping area, outside of the bedrooms or sleeping rooms. Carbon monoxide detectors and alarms shall be installed in accordance with their listing. The alarm shall be clearly audible in all sleeping rooms, even if the intervening doors are closed.

Interconnection. In new construction, all carbon monoxide detectors and alarms located within a single dwelling unit shall be interconnected in such a manner that actuation of one alarm shall activate all of the alarms within the individual dwelling unit. Combination smoke and carbon monoxide devices are recommended but not required.

Power source. In new construction, carbon monoxide detectors and alarms shall receive their primary power from the building wiring if the wiring is served from a commercial source, and shall be equipped with a battery backup. Wiring shall be permanent and without a disconnecting switch other than what is required for over current protection. In existing construction, carbon monoxide detectors and alarms may be powered by battery or a cord-and-plug with battery backup.

Recommended Actions to Protect Your Family from Carbon Monoxide Poisoning:

Install Carbon Monoxide Detectors

1. **Install carbon-monoxide detectors.** Place one within 15 feet of each sleeping area, on each level of the building, in family rooms, near but not closer than 15 feet from each fireplace, furnace, and any other fuel-burning appliance and near but not closer than 15 feet from attached garages, carports and adjacent parking spaces. Place them where there is free airflow, not near corners or behind objects. Do not place them in areas of high humidity such as bathrooms or in unheated areas. Select a detector that has Consumer Product Safety Commission and Underwriters Laboratories' seals of approval and follow the manufacturer's installation and operating instructions.
2. **If you live in or inhabit a cabin, RV, or boat,** installation of a CO alarm is highly recommended if CO-producing appliances or vehicles are nearby.
3. **If a carbon-monoxide detector activates, call the fire department and leave the building.** The fire department has sensing equipment to determine where dangerous levels of carbon monoxide are located. Since home detectors are made to alert before the environment is hazardous, this gives the homeowner a chance to contact appropriate service personnel to "fix" the problem.
4. **Transport to medical care.** If any person in the area when the alarm sounds has an extreme headache, nausea, fatigue, shortness of breath, flu-like symptoms, disorientation, or bright red skin condition, they should be transported to the nearest emergency care facility and checked for carbon monoxide poisoning.
5. **Open doors and windows.** If a carbon monoxide detector activates and no one has flu-like symptoms, open doors and windows to ventilate the house and **turn off all fuel burning equipment** while awaiting the fire department or service personnel.
6. **Test and replace your carbon monoxide detectors** as recommended by the manufacturer. These devices rely on chemical reactions and the chemicals have a limited life. Usually this life is no more than 5 years. They should be tested monthly and batteries changed as per manufacturer's recommendation.

Inspect and Maintain Your Fuel Burning Appliances

7. **Check your equipment.** Have your boiler, furnace or room heater checked and adjusted by a professional to be sure the burner and vent systems are operating properly and that the heat exchanger has no cracks. A professional inspection of all fuel burning equipment in your home could save your life and the lives of your loved ones.
8. **Check air supply.** Visually inspect the area around your fuel burning appliances to make sure there is enough airflow for the burner to bring in fresh air. These appliances should not be in a tightly sealed space.
9. **Check chimneys.** Inspect chimneys or flues for internal obstructions or leaks around the joints.
10. **Test gas water heaters.** Test a gas water heater while the burner is on by holding a lighted match under the draft hood. A match that flickers downward or goes out may indicate an exhaust backflow. The flame of the match should burn upward toward the flue.

Safely Use Fuel Burning Appliances and Equipment

11. **Open fireplace dampers.** Always burn fireplaces or wood stoves with the damper open so that all combustion gases will flow to the outside.
12. **Never use a gas cooking stove for room heating.**
13. **Do not warm-up gas engines near homes.** Do not leave an automobile or lawn mower running in a closed building, especially an attached garage or near an open window. CO can drift into the home.
14. **Follow safety precautions and directions** when using combustion equipment in a home. Problems arise as a result of improper installation, maintenance, or inadequate ventilation.