

Carbon Monoxide Home Installation

Alberta's Safety System

Alberta Municipal Affairs works in partnership with the Safety Codes Council, municipalities, corporations, agencies, and other organizations, to deliver effective community-focused public safety programs and services to Albertans.

Carbon monoxide (CO) alarms, when properly installed, tested and maintained, are a valuable safety tool that can provide you and your family with warning to the presence of dangerous levels of carbon monoxide in your home. Treat the alarm signal as a real emergency each time.

If the alarm sounds and you are not experiencing any symptoms of CO poisoning, press the reset button. If the alarm continues to sound, call the fire department immediately and leave your home until a professional checks to find the reason why the alarm sounded and any problems are fixed.

Importance of permits

The *Safety Codes Act* requires that permits in Alberta be obtained prior to commencing work on any buildings covered by the Alberta Building and Fire Codes, the Canadian Electrical Code, the Gas Code, or the National Plumbing Code.

Permits are part of a process to access compliance to a minimum standard of construction safety for the benefit of all Albertans. If construction projects are undertaken without required permits, the owner may be subject to penalties and extra costs incurred to bring a project into compliance.

As the property owner, you are responsible to obtain all necessary permits. A contractor can look after this on your behalf; however, you should specify in writing, who will get the required permits. Some jurisdictions may require a letter of authorization before a contractor can apply for permit(s) on your behalf.

What is Carbon Monoxide?

Carbon monoxide (CO) is an invisible, odourless, colourless, tasteless and poisonous gas created when any carbon-based fuel is burned.

Symptoms of CO Poisoning

Common symptoms of CO poisoning include nausea, dizziness, muscle aches, vomiting, general weakness, loss of co-ordination, impaired judgment, confusion, drowsiness, headaches, or even death.

CO in Homes

In the home, heating and cooking equipment are possible sources of CO. Vehicles idling in an attached garage can produce dangerous levels of CO. Back drafting chimneys and flues (common when ventilation fans are used in tightly sealed homes) may also allow combustion gases, including CO, to enter the home.

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CO Home Alarms

The Alberta Building Code recognizes that the only means we have of warning occupants to the presence of CO in the home is by installing CO alarms in every new building that contains a residential occupancy and a fuel-burning appliance or an attached storage garage.

To safeguard against the presence of CO gases that may place your life and the lives of your family at risk, the installation of CO alarms are also highly recommended for all existing homes.

Dual CO/Smoke Alarms

CO alarms do not serve as smoke alarms. However, it is important to note that dual CO/smoke alarms conforming to *CAN/CSA-6.19, "Residential Carbon Monoxide Alarming Devices"* and *CAN/ULC-S531, "Smoke Alarms,"* are acceptable.

Spillage of Combustion Products

The Alberta Building Code addresses the potential for spillage from combustion appliances with requirements for makeup air and CO alarms.

Depressurization caused by the principal ventilation system itself is not an issue in houses with balanced systems. However, appliances can malfunction and venting systems can fail.

Depressurization of the house by the ventilation system or other exhaust devices can cause the spillage of combustion products from certain types of combustion appliances. The types of appliances that are susceptible to pressure-induced spillage are vented through a natural draft chimney rather than through an arrangement of exterior venting which uses a fan to draw the products of combustion out of the house.

The likelihood of entry of CO is also increased if your house is depressurized in relation to the garage. This can readily occur due to the operation of exhaust equipment or to the stack effect created by heating your home when the temperature difference between outside and inside is the greatest.

Benefits of getting a permit

When you get a permit, certified safety codes officers (inspectors) will:

- give you expert advice,
- review your plans to find any potential problems,
- inspect your project, and
- make sure your project meets the Alberta Building Code.

Making changes at the planning stage can save you money, rather than making costly corrections after construction. Certified safety codes officers will give you an inspection report(s) and follow-up on deficiencies to make sure your project is safe and in compliance.

Where do you get a permit?

Permits are available through municipalities that administer the *Safety Codes Act* and through agencies that provide inspection services on behalf of municipalities or the province. If you don't know whether your municipality issues permits, contact the Alberta Safety Codes Authority (ASCA) at 1-888-413-0099 or visit safetycodes.ab.ca/ASCA.

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Even at a relatively low level of depressurization, almost all fireplaces are spillage-susceptible. This also includes fireplaces with “airtight” glass doors and outside combustion air intakes, since most “airtight” doors are not entirely airtight. Even closed-type solid-fuel-burning appliances whose stoking doors are left open, can spill products of combustion into the house when operating in their “die down” or smoldering stages.

IMPORTANT: CO alarms provide a relatively low-cost means to warn occupants when depressurization is causing spillage of toxic combustion gases into a home.

CO Alarm Requirements

The Alberta Building Code states that certified CO alarms are required in every building which contains a residential occupancy and also contains:

- a fuel-burning appliance; and/or
- an attached storage garage.

Labels found on certified CO alarms are your assurance that the alarm was tested and that it conforms to established safety standards.

CO alarms must conform to requirements of the Canadian Standards Association *CAN/CSA Standard 6.19 “Residential Carbon Monoxide Alarming Devices”* as follows: CO alarms must be equipped with an integral alarm that satisfies the audibility requirements of *CAN/CSA Standard 6.19 “Residential Carbon Monoxide Alarming Devices.”*

- CO alarms must be mechanically fixed to a surface at a height recommended by the manufacturer.
- CO alarms must have no disconnect switch between the overcurrent device and the carbon monoxide alarm where the CO alarm is powered by the dwelling unit’s electrical system.

Both battery-operated (CO) alarms and (CO) alarms that are connected to the dwelling unit’s electrical system are acceptable.

There are several models on the market with different features such as power supply back up and indicators to indicate replacement is required. Check your model type to ensure it has the features that you need.

Applying for a building permit

When applying for a building permit, you must submit the following information to your local authority:

- details of the project or occupancy to be covered by the permit.
- details of the land on which the project will be located, including a description that will easily identify and locate the building lot.
- plans, specifications and other documents showing, in detail, the proposed occupancy of all parts of the building, state the value of the proposed project.
- state the names, addresses and phone numbers of the project owner, designer and contractor.

Hire qualified tradespeople

Specific trades such as electricians, plumbers and gasfitters must be certified to work in Alberta. To find out if the tradespeople you are hiring need to be certified in Alberta or to verify an individual’s status, you may contact *The Apprenticeship and Industry Training* office by calling 310-0000.

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Required CO Alarm Locations

1. Where a room contains a solid fuel-burning appliance, a CO alarm conforming to *CAN/CSA-6.19-01, "Residential Carbon Monoxide Alarming Devices,"* shall be mechanically fixed:
 - at the manufacturer's recommended height where these instructions specifically mention solid-fuel-burning appliances; or
 - in the absence of specific instructions related to solid-fuel-burning appliances, on or near the ceiling.
2. Where a fuel-burning appliance is installed in a suite of residential occupancy, a CO alarm shall be installed:
 - inside each bedroom; or if outside the bedroom, within 5 m of each bedroom door, measured following corridors and doorways.
3. Where a fuel-burning appliance is installed in a service room that is not in a suite of residential occupancy, a CO alarm shall be installed:
 - either inside each bedroom, or if outside the bedroom, within 5 m of each bedroom door, measured following corridors and doorways, in every suite of residential occupancy that shares a wall or floor/ceiling assembly with the service room; and
 - in the service room.
4. For each suite of residential occupancy that shares a wall or floor/ceiling assembly with a storage garage or that is adjacent to an attic or crawl space to which the storage garage is also adjacent, a CO alarm shall be installed:
 - inside each bedroom; or if outside the bedroom, within 5 m of each bedroom door, measured following corridors and doorways.

Homes containing a secondary suite must have CO alarms in both the main dwelling and the secondary suite. These must be hard-wired and inter-connected so they will operate in unison.

These brochures may be updated periodically. They have no legal status and cannot be used as an official interpretation of the various bylaws, codes and regulations currently in effect.

More information:

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 Toll-free within Alberta:
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 askasca@safetycodes.ab.ca

Call (or click) before you dig!

Alberta One Call will locate utility lines on your property. Call or click before you start any project that involves digging in your yard. Alberta One Call will locate gas, water, electricity, drainage, telephone and cable TV lines. Allow at least two full working days for Alberta One Call to locate your utility lines.