Building and Technical Standards Advisory

Promoting construction of safe, healthy, habitable buildings

Carbon Monoxide and Smoke Alarms – Saskatchewan Regulation

Are carbon monoxide and smoke alarms required in my building?

Effective July 1, 2022, both carbon monoxide (CO) and smoke alarms will be required in all buildings in Saskatchewan which contain a residential occupancy. The design of the building will dictate the number and location of CO and smoke alarms.

According to the National Building Code of Canada (NBC) 2015 definitions, a residential occupancy is defined as “the occupancy or use of a building or part by persons for whom sleeping accommodation is provided”.

Typical examples of buildings identified as a residential occupancy include a dwelling or house, semi-detached houses, row houses, townhouses, boarding houses and other multi-unit residential buildings (MURB) such as apartments and condominiums along with hotels and motels.

Part 1 - Carbon Monoxide Alarms

What do I need to know about CO?

CO is an invisible, odourless and tasteless gas that can build up to lethal concentrations in an enclosed space without the occupants being aware of it. CO is most commonly produced by malfunctioning fuel-fired appliances (furnace, water heater, etc.) or car exhaust.

Exposure to CO can cause flu-like symptoms such as headaches, nausea, dizziness, and more serious effects such as confusion, drowsiness, loss of consciousness and death.

CO poisoning is a threat to Saskatchewan residents. Between 2018 and 2020, an average of 1,200 CO incidents were reported annually to SaskEnergy. Between 2015 and 2019, the Saskatchewan Coroners Service reported 16 deaths attributed to CO poisoning.

What are the common sources of CO in a building?

CO forms during combustion where an appliance coverts fuel to heat. Examples of fuel-fired appliances are natural gas furnaces, cooking appliances, fireplaces, clothes dryers, water heaters with a draft hood and oil furnaces with barometric dampers. Solid fuel-fired appliances also convert fuel to heat and are a potential source of CO. Such appliances include wood or pellet furnaces, fireplaces and stoves.

The new regulation requires that all buildings with residential occupancies containing a fuel-burning appliance and/or an attached parking garage require CO alarms. This is due to the potential formation of CO gas due to fuel-burning appliance operation or vehicle exhaust emissions.

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Why are building owners being required to install CO alarms?

The NBC 2015 specifies that CO alarms are required in all new buildings which contain a residential occupancy. However, the effects of carbon monoxide are not limited to the residents of new buildings only. Since the health, welfare and safety of residents in their home is a priority in building safe communities, the Government of Saskatchewan now requires all residential buildings to have a working CO alarm installed to ensure you and your family are better protected against this dangerous gas.

What types of CO alarms are acceptable?

All CO alarms must conform to CAN/CSA 6.19 "Residential Carbon Monoxide Alarming Devices" and fastened at a height recommended by the manufacturer. In the absence of manufacturer's recommendations, the CO alarm can be installed on or near the ceiling.

In houses, only tamper-proof CO alarms, combination CO/smoke alarms or CO plug-in alarms with a 10-year integrated battery are permitted. They should be tested regularly following manufacturer's instructions.

- Tamper-proof CO alarms
  CO alarms are required to operate for a minimum of 10 years and be equipped with a tamper-proof battery. The alarm's expiry date (or date of manufacture) will be found on the back of the alarm.

- Combination CO/smoke alarms
  When correctly located, a combination CO/smoke alarm will serve a dual purpose of detection and warning. It can also provide cost savings where two separate devices can be replaced by a single combination device. A typical location for a combination CO/smoke alarm would be in the corridor or hallway adjacent to bedrooms. In this location, the CO/smoke alarm combination would satisfy the requirement for a CO alarm for the particular floor due to potential CO hazards and also the requirement for a smoke alarm on the floor level.

- CO plug-in alarms with 10-year integrated battery
  Another acceptable type of CO alarm is an electrically-powered device that can be plugged directly into an electrical outlet. This type of CO alarm must have a 10-year life cycle and include a battery back-up. The electrical outlet providing the power to the CO alarm cannot be on an electrical circuit that has a switch between the CO alarm and the circuit's electrical breaker.

What should be done with existing CO alarms which currently exist in a house?

A CO alarm will have a manufacturer's date referenced on the back of the device. Some devices may also have an end of life date or an expiry date.

If on July 1, 2022, your CO alarm has not exceeded the manufacturer's life cycle or expiry date, it will be permitted to remain until it has reached the expiry date. You will need to ensure that your CO alarm(s) are installed in the correct locations in your house (see table below). You may need to install additional devices or you may need to relocate your existing non-expired CO alarms.

If your CO alarms have reached their expiry date or have exceeded 10 years from the date of manufacturer on July 1, 2022, they are past their end of life. These alarms must be replaced with a tamper-proof CO alarm with a 10-year integrated battery.

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The following table provides the minimum requirement and location of CO alarms in a house. You may also wish to look at the illustration **House Plan View #1** at the end of this advisory to view their locations.

CO Alarm Location	CO Hazard Source	CO Alarm Required
Main Level Minimum		
CO alarm required on the main level within 5 m (16 ft.) of each bedroom measured following corridor or hallway	Attached parking garage Fuel-fired gas fireplace Fuel-fired gas range Fuel-fired gas furnace Fuel-fired water heater	Minimum one (1) CO alarm
Basement Level Minimum		
CO alarm required on the basement floor level within 5 m (16 ft.) of bedroom door measured following corridor or hallway	Fuel-fired gas furnace Fuel-fired water heater	Minimum one (1) CO alarm

What are the areas of a multi-unit residential building (MURB), such as a condominium or apartment, which require the installation of CO alarms?

CO alarm locations in a MURB depend on the CO hazard locations identified in a condominium or apartment. CO hazard locations include:

- An attached parking garage, typically the lowest level of the building.
- The service room in the building where the fuel-fired central heating system is located.
- Fuel-fired appliance such as a natural gas range or fireplace located within a suite. (The terminology "suite" is often referenced when describing a dwelling unit within an apartment or condominium.)

Where condominium or apartment suite(s) are served by an attached parking garage, CO alarm(s) are required only in the suite(s) that share a common wall, ceiling or floor with the attached parking garage. You can either install a CO alarm in each bedroom of the suite or install a single CO alarm in the corridor or hallway outside the bedrooms as long as the alarm is within 5 m (16 ft.) of the bedroom door.

In condominiums or apartment buildings that have a centrally-located fuel-fired heating system in a service room, CO alarm(s) are required only in the suites which share a common wall, ceiling or floor with the service room. You can either install a CO alarm in each bedroom of the suite or install a single CO alarm in the corridor or hallway outside the bedrooms as long as the alarm is within 5 m (16 ft.) of the bedroom door. The service room, where the central heating system is located, will also require a CO alarm.

CO alarm(s) must also be installed in condominium or apartment suites that have a fuel fire appliance such as a natural-gas range or fireplace. You can either install a CO alarm in each bedroom of the suite or install a single CO alarm in the corridor or hallway outside the bedrooms as long as the alarm is within 5 m (16 ft.) of the bedroom door.

The following table provides the minimum requirement and location of CO alarms in a MURB. You may also wish to look at the illustration **MURB Cross-Section View #2,** found at the end of this advisory to view their locations.

CO Alarm Location	CO Hazard Source	CO Alarm Required
Within Suite of MURB		
CO alarm required in the suite outside the bedroom(s) within 5 m (16 ft.) of each bedroom measured following corridors or hallway	Fuel-fired gas fireplace Fuel-fired gas range Service room* Attached parking garage**	Minimum one (1) CO alarm in suite
Within Service Room of MURB		
CO alarm required on the basement level within the service room	Central fuel-fired heating system	Minimum one (1) CO alarm in service room

Notes to table above:
***CO alarm required only in the suites which share a wall, ceiling or floor with the service room.**
****CO alarm required only in the suites which share a wall, ceiling or floor with the attached parking garage.**

PART 2 – Smoke Alarms

Why are smoke alarms required in a house?

As a primary life safety device, working smoke alarms installed correctly in a building play a vital role in reducing fire deaths and injuries. If there is a fire in a house, smoke spreads fast. You need an advance warning system, provided by smoke alarms, to alert you to get out.

The number one ignition source in all preventable house fires is cooking equipment (stoves) that causes clothing, cooking oil or other flammable liquids to burn. Cigarette smoking is also a potential source of fire.

With respect to locations within a house, fires are most likely to start in the kitchen, a bedroom or a living room.

Why are smoke alarms included in the new regulation?

The NBC 2015 specifies that smoke alarms are required in new buildings which contain a residential occupancy. However, the effects of smoke and fire are not limited to new buildings only. Annually, fire departments across Saskatchewan respond to numerous fires in houses.

Nationwide, 4,000 house fires occur annually in Canada resulting in an average of 377 deaths and 3,048 injuries per year. According to SGI Canada, 21 out of 100 preventable residential fires are fatal. SGI Canada adds that in fatal, preventable house fires, more than one-third of the houses did not have a working smoke alarm.

What type of smoke alarms are acceptable in a house?

All smoke alarms must comply with CAN/ULC-S531, “Smoke Alarms”. Smoke alarms shall be installed on or near the ceiling in the room, corridor or hallway where they are required.

In houses, only tamper-proof smoke alarms or combination CO/smoke alarms with a 10-year integrated battery are permitted. They should be tested regularly following manufacturer’s instructions.

- Tamper-proof smoke alarms
  Houses that have a hard-wired and interconnected smoke alarm system are permitted to supplement the existing system with a tamper-proof, 10-year integrated battery-operated smoke alarm. If you decide not to mix and match devices, you can expand your existing hard-wired and interconnected smoke alarm system in order to comply with the regulation.

- Combination CO/smoke alarms
  The regulation requires that the combination CO/smoke alarm have a tamper-proof 10-year integrated battery. A typical location for a combination CO/smoke alarm would be in the corridor or hallway adjacent to bedrooms. In this location, the CO/smoke alarm combination would satisfy the requirement for a CO alarm for the particular floor due to potential CO hazards and also the requirement for a smoke alarm on the floor level.

- Wireless smoke alarms
  Wireless smoke alarms are tamper-proof and come with a 10-year integrated battery. These devices are capable of sending a signal to trigger all wireless smoke alarms to sound when only one is activated. The advantage of a wireless smoke alarm system is that it provides a level of protection for the entire house, similar to an interconnected system.

What areas of a house require a smoke alarm?

Smoke alarms are required in each bedroom and in the corridor or hallway that serves those bedrooms. In addition, smoke alarms are required on all storeys of a house, including the basement, to warn occupants of smoke that may be present on another floor.

The following table provides the minimum requirement and location of smoke alarms on the main floor level and basement level of a house. You may also wish to look at the illustration **House Plan View #1** at the end of this advisory to view their locations.

Smoke Alarm Location	Smoke Hazard	Smoke Alarm Required
Main Level Minimum		
Smoke alarm required on main level within each bedroom	Advanced warning for main level bedrooms where sleeping occurs and bedroom door may be closed.	Minimum two (2) smoke alarms
Smoke alarm required on main level outside the bedrooms in the corridor or hallway	Advanced warning for the main floor level and the area immediately outside the bedrooms.	Minimum one (1) smoke alarm
Basement Level Minimum		
Smoke alarm required in basement level within each bedroom	Advanced warning for basement level bedrooms where sleeping occurs and bedroom door may be closed.	Minimum two (2) smoke alarms
Smoke alarm required in basement level outside of the basement bedrooms in the corridor or hallway	Advanced warning for the basement level and for the area immediately outside the bedrooms.	Minimum one (1) smoke alarm

What should be done with existing smoke alarms currently in a house?

A smoke alarm will have a manufacturer's date referenced on the back of the device. Some devices may also have an end of life date or expiry date.

If on July 1, 2022, your smoke alarm has not exceeded the manufacturer's life cycle or expiry date, it is permitted to remain until it has reached the expiry date. You will need to ensure that your smoke alarm(s) are installed in the correct location in your house (see table above or the illustration **House Plan View #1**). You may need to install additional devices or you may need to relocate your existing, non-expired smoke alarms.

If your smoke alarms have reached their expiry date or exceed 10 years from the date of manufacturer on July 1, 2022, they are past their end of life. They must be replaced with a new tamper-proof smoke alarm with a 10-year integrated battery.

What are the areas of a MURB, such as a condominium or apartment, which require the installation of smoke alarms?

The location of smoke alarms in a suite located in a condominium or apartment building are similar to a house.

- A smoke alarm is required within each bedroom.
- A smoke alarm is required in a location between the bedroom and the remainder of the suite, usually the corridor or hallway.
- If the suite has multiple storeys, a smoke alarm is required on each storey within the suite.

The following table provides the minimum requirement and location of smoke alarms in a suite located in a MURB. You may also wish to look at the image **MURB Cross-Section View #2,** found at the end of this advisory that illustrates these smoke alarm locations.

Smoke Alarm In A Suite	Smoke Hazard	Smoke Alarm Required
Smoke alarm required within each bedroom	Advanced warning for bedrooms in suite where sleeping occurs and bedroom door may be closed	Minimum one (1) smoke alarm
Smoke alarm required outside of bedrooms in adjacent corridor or hallway	Advanced warning for main level of suite and immediately outside of the bedrooms	Minimum one (1) smoke alarm
Smoke alarm required on all levels of a multi-storey suite	Advanced warning required on all levels of the suite.	Minimum one (1) smoke on each level of suite

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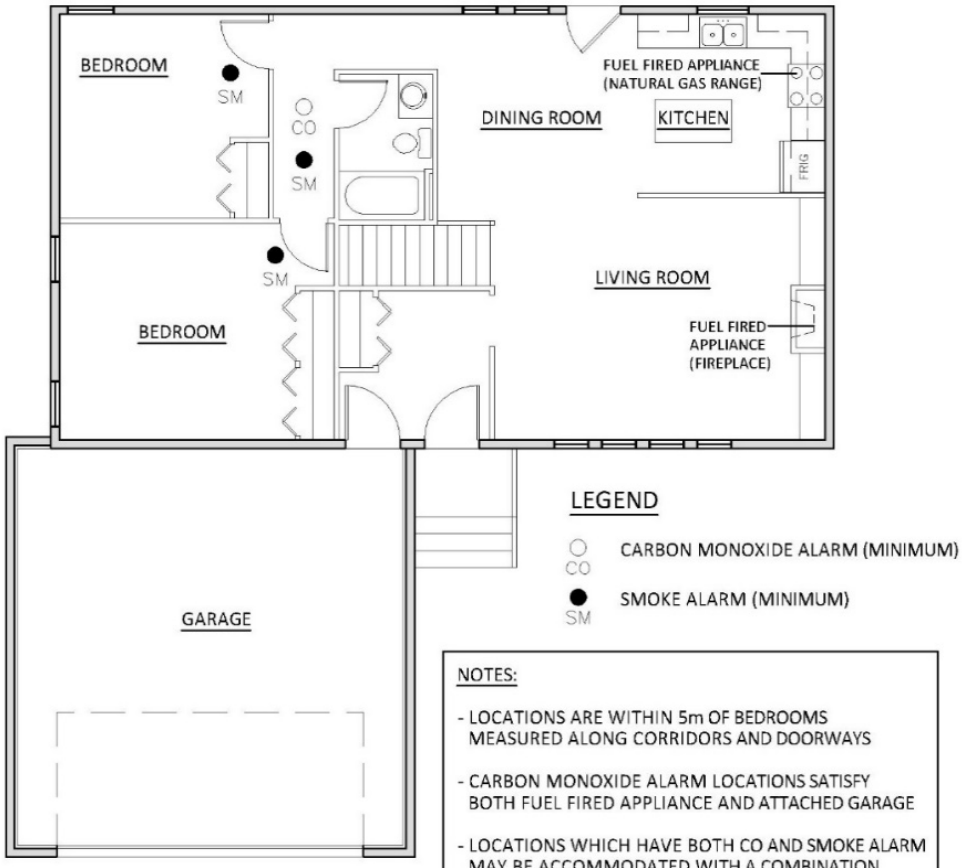
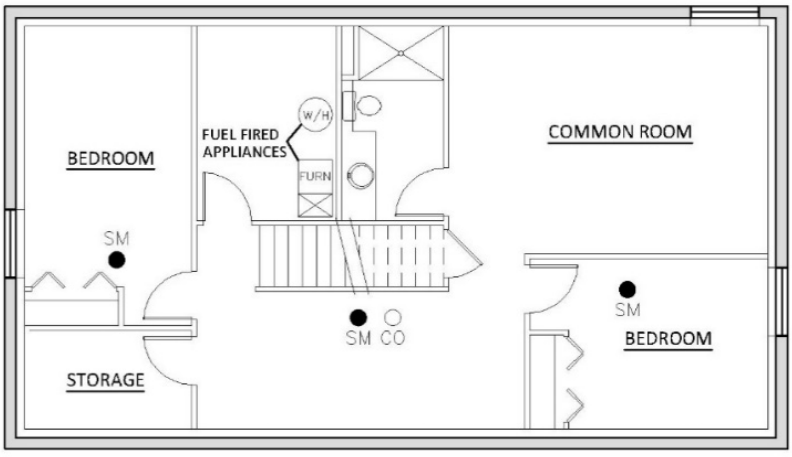
HOUSE PLAN - VIEW #1



MAIN FLOOR LEVEL



BASEMENT LEVEL

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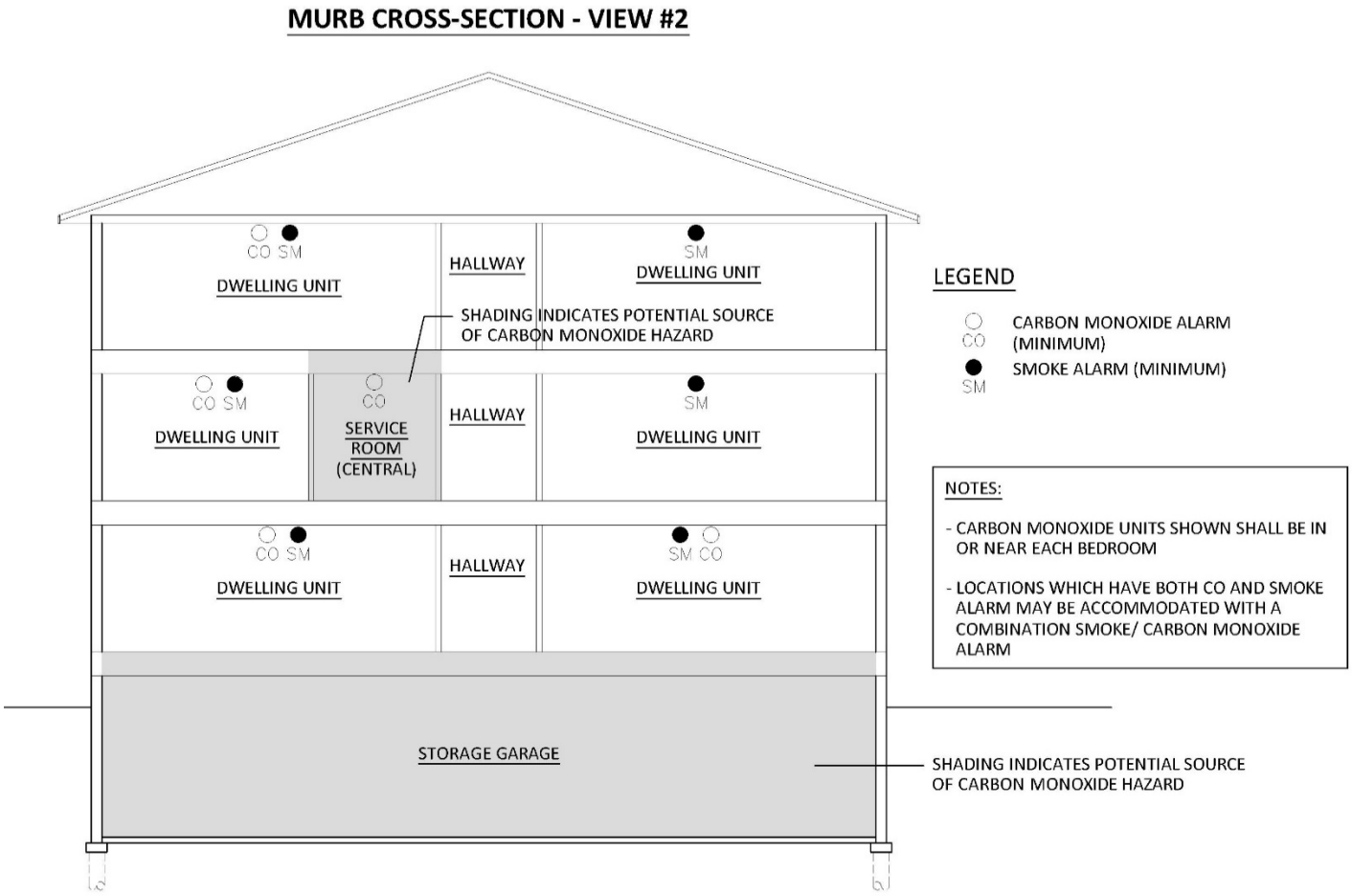

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Building Standards Advisory
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October 2021

Original approved and signed by:
Chief Building Official