Smoke Alarms: The Basics

Since the introduction of smoke alarms to the residential market in 1971, many advances have been made to the technology, features and effectiveness of these devices. The array of choices now available to consumers can be somewhat confusing and may cause them to turn to their fire department for answers. The following are some of the most commonly asked questions about smoke alarm operation and features.

(For additional questions and answers, refer to: *Smoke Alarm Requirements for Dwelling Units under Section 2.1.3.3 of the Fire Code*

Where should I install smoke alarms?

The Manitoba Fire Code requires that smoke alarms be installed on every level and outside all sleeping areas. Because smoke rises, smoke alarms should be installed on the ceiling. If this is not possible, or if frequent nuisance alarms are a concern, install them high up on a wall, according to the manufacturer's instructions. Avoid placing alarms near bathrooms, heating appliances, windows or close to ceiling fans.

What does it mean when my smoke alarm "chirps"?

It's time to install a new battery. Underwriters Laboratories of Canada (ULC) requires that all smoke alarms have a low battery warning device that emits an intermittent signal (often a "chirp") when the battery power is low. The warning signal itself will eventually stop after a few days, so smoke alarms should be tested when occupants return from an extended absence. It should also be noted that many smoke alarms with a pause feature chirp intermittently when in pause mode. The chirping will stop after a few minutes, when the alarm resets itself.

How often should I replace the battery?

Conventional smoke alarm batteries should be replaced annually, and when the low-battery indicator sounds. When replacing batteries, ensure the replacements are compatible with the manufacturer's recommendations.

Smoke alarms are also available with long-life batteries that last up to ten years. When the battery wears out, simply replace the entire smoke alarm unit with a new one.

How do I know if I installed the battery correctly?

Standard 9V batteries used in many smoke alarms require snapping the battery's terminals into tight-fitting connectors. This can sometimes be awkward or difficult. Alarms with spring-metal terminal contacts provide much easier battery installation, but increase the possibility of installing the battery backward. Individuals installing batteries in smoke alarms must ensure the positive and negative terminals are correctly connected. Correct installation can be confirmed by pressing the test button until the alarm sounds.

How often should I test my smoke alarms?

It is recommended that smoke alarms be tested every month. Pressing and holding the test button located on the face of the unit until the alarm sounds will test the alarm feature of most smoke alarms.

Do smoke alarms need to be cleaned?

The inside of battery-operated smoke alarms should be cleaned at least once each year by using the soft brush attachment of the vacuum cleaner. Test the unit when finished. For electrically-connected smoke alarms, shut off the power to the unit and vacuum the outside vents only. Restore power and test the unit when finished. Do not paint any part of a smoke alarm.

What does the pause feature on smoke alarms do?

Pause or 'hush' buttons allow occupants to silence nuisance alarms, such as those caused by burning toast or opening smoky ovens, and not affect the operation of the alarm. Without this feature, many occupants will inappropriately disable the alarm by disconnecting or removing the batteries.

Smoke alarms with the pause feature can be temporarily silenced in the event of a nuisance alarm. The pause will last for approximately eight minutes, after which time the alarm will automatically return to normal operation. Smoke alarms with this feature discourage the dangerous practice of removing batteries or otherwise disabling the units. Whenever possible, fire departments should recommend that residents purchase smoke alarms with pause features, especially if they will be installed near kitchens or bathrooms. It should be noted that many alarms with a pause feature chirp intermittently while in pause mode. The chirping will stop once the alarm resets itself.

How do I know whether to buy photoelectric or ionization alarms?

Smoke alarms commonly use one of two different types of technology in detecting smoke: ionization or photoelectric.

Ionization-type smoke alarms have a small amount of radioactive material that ionizes the air between two electrically charged plates, causing a measurable current to flow between the plates. When smoke enters the chamber, it disrupts the flow of current, which activates the alarm.

Photoelectric-type smoke alarms aim a light source into a sensing chamber at an angle away from the sensor. Smoke entering the chamber reflects light onto the sensor, which triggers the alarm.

Ionization vs. photoelectric: Both ionization and photoelectric alarms are tested to the same product standard (CAN/ULC – S531). Photoelectric alarms respond slightly faster to smouldering type fires; ionization alarms respond slightly faster to flaming type fires. Some manufacturers offer smoke alarms that use both sensor systems, for optimal protection.

It is often recommended that alarms installed near kitchens be photoelectric to minimize the incidence of nuisance alarms.

How can I find out about alarms for the hearing impaired?

Smoke alarms that employ high-decibel alarms and strobe lights are available for the deaf, deafened or the hard-of-hearing. Visit the Canadian Hearing Society's website at www.chs.ca for information about these smoke alarms.

Does my smoke alarm ever need to be replaced?

Like other appliances, smoke alarms wear out and become less effective over time. In addition, new technology and features are continually being integrated. Smoke alarms need to be replaced every ten years.

Does my smoke alarm detect carbon monoxide?

Smoke alarms should not be confused with carbon monoxide alarms. Carbon monoxide alarms are designed to detect dangerous levels of carbon monoxide resulting from incomplete combustion from fuel burning appliances, such as gas- or oil-fired furnaces or wood burning stoves, or from carbon monoxide gas that may enter a home from an attached garage. Some manufacturers do offer alarms that detect both smoke and carbon monoxide. (An information sheet about carbon monoxide is included in the *Program Resources* section.)