CARBON MONOXIDE DETECTORS

INCREASINGLY IMPORTANT IN ENERGY EFFICIENT HOMES

Many Canadians are woefully unprepared when it comes to protecting themselves against a potentially fatal threat, and I'd like to see this change. This threat centers around the winter heating season and protecting yourself against it requires less than $100 of simple equipment. Carbon monoxide is the issue, and with cold weather on its way, a carbon monoxide detector is more important than ever. This is especially true if you live in a modern, energy efficient home.

The hazards of carbon monoxide (CO) shouldn't be news to any of us. This odourless, colourless gas is deadly, but what you might not realize is how the carbon monoxide hazard is rising as time goes on. As strange as it sounds, improved homebuilding standards are one reason why.

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Carbon monoxide kills because it's so chemically eager to latch onto oxygen, wherever it exists. When CO enters the body through your lungs, it binds up enough oxygen in the blood stream to starve vital organs. There's not enough pain or discomfort to wake sleeping victims from the slow silent death, and that's the danger. Levels of CO above only 70 parts per million (ppm) can cause headaches, tiredness and nausea in people who are awake. Levels over 150 to 200 ppm will probably kill you.

Leading edge carbon monoxide detectors include built-in, rechargeable battery back up and a screen display that shows CO concentrations. The detector shown here is one of the models Maxwell has been analysing, and it plugs directly into a wall outlet. Lower profile models wire into household circuitry.

Photo credit: Steve Maxwell

As homebuilding standards rise, the amount of natural air leakage in houses is on the way down. Government is mandating these changes, and they're a good thing. Tighter homes mean lower heating bills, and fewer greenhouse gas emissions. But unlike older, leaky houses that have lots of natural ventilation, today's best homes are tight enough to allow negative indoor air pressures to develop under some circumstances. If you over-use exhaust fans, for instance, or if a heat recovery ventilator malfunctions, it's possible that indoor air pressure could drop lower than outdoor pressure. And if this happens while a combustion furnace, water heater or fireplace is operating, you could get deadly amounts of carbon monoxide wafting back into your home through chimneys and vents. Backdrafting of this sort is not a likely scenario, but the

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stakes are high enough that you can't responsibly leave your life to chance, however small it is. That's why I consider CO detectors a necessary no-brainer. It's best to install them in the vicinity of combustion appliances, though no closer than 6 feet to a gas or oil furnace, fireplace, gas or oil water heater or a gas range. Detectors should only be installed in heated areas, and not near ventilation louvres.

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We've had two detectors in our house for 15 years, and once, when the alarms went off after someone closed the fireplace flue too soon, they may have saved our lives. That's one reason I'm a believer. Another is the way CO detectors are getting better. The latest models have features that improve performance over earlier models, and unless you've lived with a detector for a while you might not realize the one feature that makes a big difference.

The main issue in my book is battery back-up. First-generation CO detectors were powered by an AC plug outlet alone, and this meant they offered no protection during power failures – precisely when you need it the most as furnace burner fans and water heater exhaust systems shut down instantly while combustion might still be happening for a short time. The CO detector I have in the highest risk area of my house has a built-in, self-charging battery system that keeps the unit working when the power goes off.

Top of the line CO detectors cost all of about $60, which is probably the best value in home security anywhere. So how come carbon monoxide detectors aren't found in every Canadian house? Part of this is because we're blissfully ignorant of the dangers. Another factor is the fact that governments have tried but failed to legislate widespread and mandatory use of this life-saving equipment. Don't wait for the news media to frighten you into action, nor government legislation to require you to do the right thing. The danger is obvious, protection is simple and the right kind of gear is widely available at low prices. All that's missing is the simplest of decisions next time you go to the hardware store.

Houses aren't as complicated as they seem. Specific bits of hands-on insight translate into a surprising amount of confidence when it comes time to make an offer. A little technical knowledge goes a long way as a resale buyer.

Steve Maxwell, syndicated home improvement and woodworking columnist, has shared his DIY tips, how-to videos and product reviews since 1988. Follow "Canada's Handiest Man" at SteveMaxwell.ca, Facebook or @Maxwells_Tips on Twitter.