
Unsafe Gas Work Leads to Fire and Explosion in Richmond Strata Complex

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Residents of a Richmond strata complex were lucky to escape without serious injury following an explosion and fire this summer. According to provincial safety regulator Technical Safety BC, the incident was caused by unsafe work practices during the replacement of a fireplace.

While ultimately it is the responsibility of the licensed contractor to do work safely, home owners, building managers and strata corporations that oversee multi-unit buildings should be aware of the risks presented by this activity – and know what questions to ask and action they can take to prevent it.

What happened?

The incident took place on the second floor of a four-story apartment complex, where a homeowner had hired licensed gas contractors to replace an older natural draft gas fireplace with a new more energy-efficient direct vent variety. Natural draft fireplaces/appliances require a chimney/vent to remove combustion gases and air supply is provided directly from outdoors or indoors, drawing air from the apartment suite whereas direct vent fireplaces have both a chimney/vent and a separate duct that supplies air directly to the fireplace from outdoors.

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Due to the differences between the two fireplace types, the original fireplace had a single exhaust/vent duct extending to the roof, while the new fireplace incorporated an additional air supply duct that directly connected to the fireplace. Based on these separate styles, the new fireplace had different dimensions and required additional space to accommodate its install.

Natural gas supply in the building is distributed through a gas piping system in the lower level parkade, which is then branched to a number of vertical gas pipes known as risers which provide gas to the individual suites, including the fireplaces.

Each of the fireplaces in the building is connected to the gas riser using a narrow copper pipe known as a “whip”, attached to a T-fitting in the riser. To accommodate the configuration of the new fireplace, the contractors working on the fireplace retrofit turned the gas riser pipe and T-fitting and pushed them out of the way. This caused the copper whips attached in the third and fourth floor suites to break/crack.

Because the gas fitters had not turned off the gas supply serving the riser, gas then leaked out of the broken/cracked whips and was ignited by a fireplace pilot light in a suite on the fourth floor, resulting in an explosion in suites on the third and fourth floor.

Luckily no one was seriously injured but the building had to be evacuated while the fire department extinguished the fire and there was significant damage to several suites and to common areas of the building.

Regulations & Codes

The *Safety Standards Act*, gas safety regulations and related Codes require that the gas supply be isolated and turned off when modifying gas piping systems or replacing gas appliances. The gas fitters working on this retrofit should have turned off the gas at the risers before replacing the natural gas fireplace. By turning off the gas and also doing proper pressure testing after the pipe adjustment before turning the gas back on, the leak should have been detected, likely avoiding this unfortunate outcome.

While doing work safely and legally is the responsibility of the gas fitter, the homeowner and strata corporation and building manager also have important roles to play around preventing unsafe circumstances from arising. While turning off natural gas in an entire building (or section of) may be slightly inconvenient for residents, it is certainly preferable than putting residents at risk.

“There are a number of circumstances that can lead to the unsafe practice of doing gas work on ‘live’ systems,” says Technical Safety BC’s Eric Lalli, Incident Investigations Leader. “These can include gas contractors wanting to save time, being unaware of regulatory requirements and safe work practices, or simply being unaware of the risks this practice can present.”

The bottom line? Always hire reputable, licenced contractors and be aware that natural gas must be turned off before any replacement work is done. Have a dialogue with your contractor and make it clear you want work done safely, under the appropriate permits and done to Code with no shortcuts.

Want to learn more about this particular incident? View the Technical Safety BC incident investigation at www.technicalsafetymc.ca/richmond-incident-investigation.

Tips for strata managers:

- Insist that condo residents inform the strata *before* any gas-related work is done in their suite.
- If coordinating retrofits in your strata building, ensure that proper permits where applicable have been pulled before work has started by checking with Technical Safety BC or your local municipality. Technical Safety BC research has shown that work performed without a permit is four times more likely to result in a significant safety hazard than work performed under a permit.
- Be aware that *all* gas work done in strata properties must be done by Technical Safety BC licensed contractors. Unlike in single family homes where a homeowner can complete certain types of gas work under a Homeowner Permit, owners of a strata, non-strata duplex or home with legal suites, and those operating a business from their home, cannot obtain homeowner permits and must hire a licensed contractor to perform legal, permitted work.
- Consider how you can incorporate risk management into your planning processes. Be aware that by pressuring contractors not to disturb other tenants, you may run the risk of having a contractor that will take shortcuts that could have unsafe results.
- In recent years several fireplace models have been recalled. Check the Health Canada website to ensure fireplaces in your building are not impacted. In addition, Luxor Fireplace products from Canadian Firehearth Mfg. Inc. and Luxor Mfg. Inc. are not certified and must be removed from operation immediately. Contact Technical Safety BC for details.