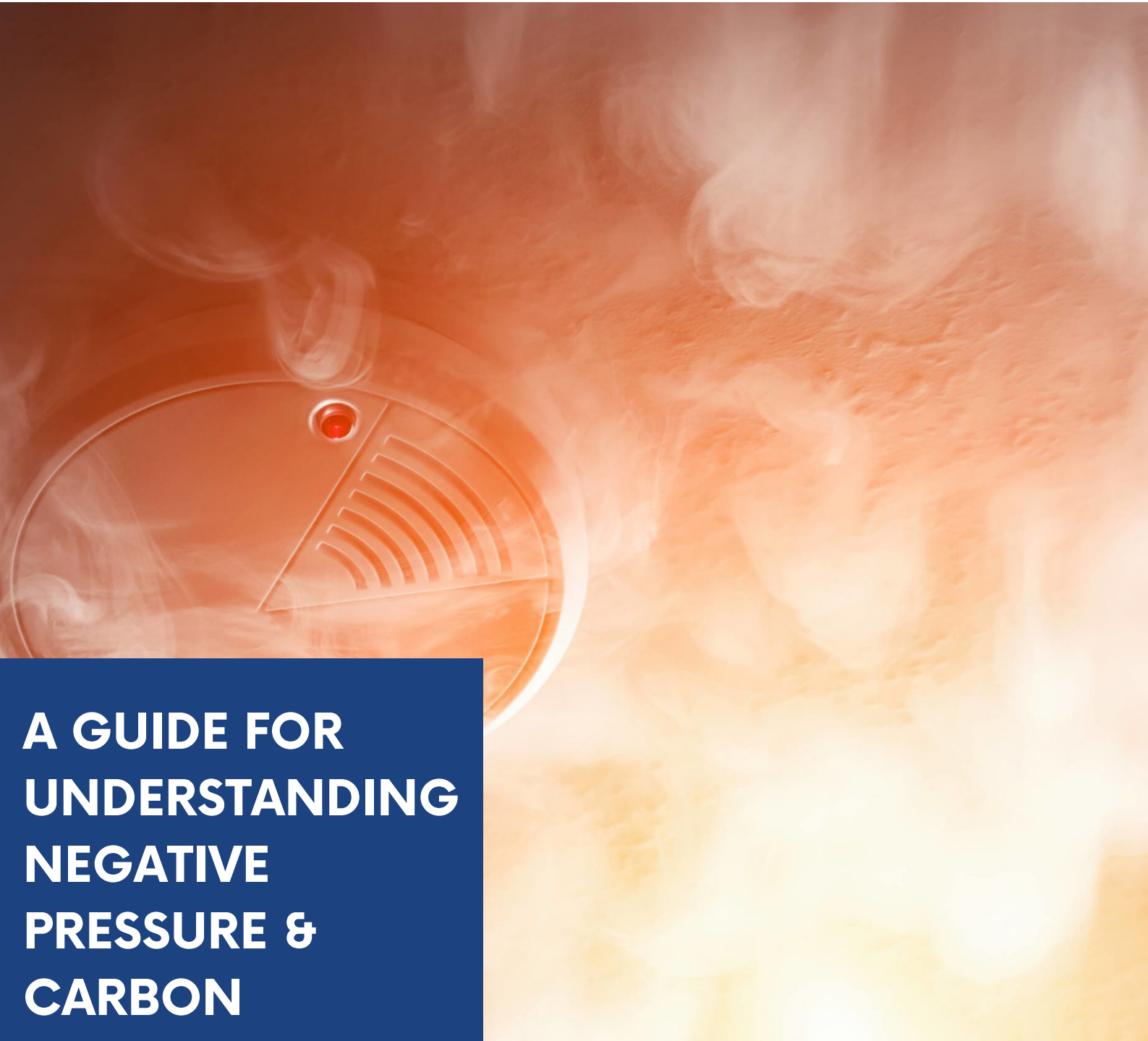




UNDERSTANDING NEGATIVE PRESSURE



**A GUIDE FOR
UNDERSTANDING
NEGATIVE
PRESSURE &
CARBON
MONOXIDE**

Where would we be without Gas?

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WHAT IS NEGATIVE PRESSURE?

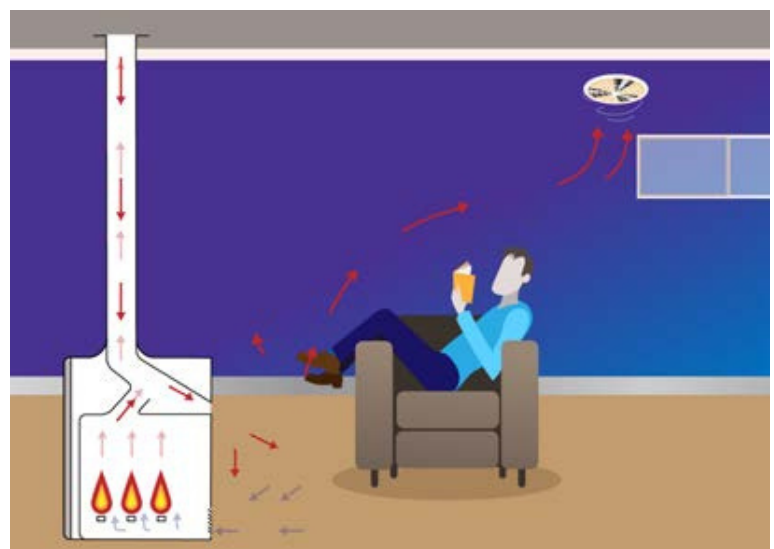
Negative air pressure within a building is typically caused by systems (such as ventilation fans, HVAC etc.) exhausting more air than being drawn into the building by outside air vents.

When fans such as rangehoods/extractor fans, ventilation systems (e.g. HRV) or heat transfer units are installed and used in the same room as solid fuel fires (e.g. a Gas fireplace) negative pressure can occur.

When an extractor fan is used it draws air from any external opening in a room/building, which is typically an open door or window. However when the weather is cold and all doors and windows are closed this can cause air to be drawn in via the flue or chimney of a Gas appliance.

If a Gas appliance is open flued, and especially if it is not working optimally it can draw toxic gases such as carbon monoxide (CO) into the room via the flue or chimney. Carbon Monoxide is incredibly dangerous as it can cause fatal poisoning if inhaled, and as it is odorless, tasteless and colorless it can be hard to detect without an alarm.

When installing new Gas appliances, Gasfitters are required to check that a negative pressure environment cannot be caused by the use of an extractor fan, and test this using all extractor fans at once. If a negative pressure is caused then the Gasfitter must take steps to ensure enough ventilation to prevent the negative pressure, or not connect the Gas appliance until it is resolved.



HOW TO PREVENT NEGATIVE PRESSURE

If you have open-flued Gas appliances in the home you can take the following steps to reduce any negative pressure or the likelihood of Carbon Monoxide being drawn into your home.

- **Do not use exhaust fans when also running a gas heater** – If a Gas appliance is being used at the same time as a rangehood, bathroom extractor fan etc. it can create negative pressure and draw Carbon Monoxide into the room.
- **Get your Gas appliances serviced on a regular basis** – Every 1 – 2 years (depending on how frequently it is used), servicing your Gas appliances ensures that they are working efficiently and safely. This is also a great time to check for any negative pressure in the home.
- **Never use outdoor Gas appliances inside** – Patio heaters, BBQ's etc. release carbon monoxide into the surrounding atmosphere. This can easily disperse outside and therefore not pose a health risk, however if used inside where there is poor ventilation they can become fatal.
- **Increase ventilation where possible** – Ventilation is important to ensure Carbon Monoxide is not drawn into the room/home and will also improve the efficiency of the Gas appliance in use. This can include slightly opening a window or door.
- **Do not leave a Gas heater on overnight** – this also includes leaving a Gas heater running for extended periods of time as this can increase the build up of Carbon Monoxide if there is negative pressure.
- **Do not use Gas hobs or cookers as heaters**
- **Install a Carbon Monoxide alarm** – Proper installation and maintenance of a Gas appliance is essential, however a Carbon Monoxide alarm is a safe back-up measure incase there is a build up of Carbon Monoxide to keep you and your family safe.



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CARBON MONOXIDE

Carbon Monoxide Alarms

To ensure a Carbon Monoxide alarm is suitable, there are a few points to consider before purchasing one:

- It will comply with either UL2034 (US) or EN50291 (EU). These are internationally recognised design standards which ensure it meets certain criteria in function and performance.
- It provides a visual and audible alarm which indicates when the sensor or battery has expired so that you can rely on it performing efficiently at all times.
- Do not install the alarm near cooking appliances as this may result in the alarm being triggered unnecessarily.

The dangers of Carbon Monoxide

As Carbon Monoxide has no taste or smell it is incredibly hard to detect, making it incredibly dangerous as it can cause fatal poisoning if undetected. Unfortunately there have been a number of deaths in NZ due to undetected Carbon Monoxide.

Common reasons for NZ deaths relating to Carbon Monoxide poisoning include using outdoor gas appliances inside, a lack of maintenance on gas appliances and appliances used in confined spaces. The basic causes for these are:

- Improper combustion
- Poor ventilation'

Gasfitters are required to install Gas and Gas appliances to a property ensuring they meet the requirements set out in AS/NZS 5601 which will reduce the likelihood of any Carbon Monoxide build up. However, following an installation it is possible that other modifications made to a room or building then make the Gas appliance dangerous regarding negative pressure and Carbon Monoxide (e.g. covered the ventilation, installed a rangehood etc.)