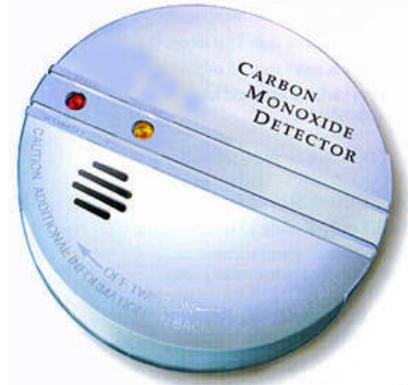


Carbon Monoxide Detectors

Advice & Information on the use of Carbon Monoxide Detectors.



What is carbon monoxide and why is it a problem?

Carbon monoxide (CO) is a colourless, odourless, tasteless, poisonous gas produced by incomplete burning of carbon-based fuels, including gas, oil, wood and coal. Carbon-based fuels and appliances are safe to use if correctly installed and maintained. It is only when the fuel does not burn properly that excess CO is produced, which is poisonous. When CO enters the body, it prevents the blood from bringing oxygen to cells, tissues, and organs.

You can't see it, taste it or smell it but CO can kill quickly without warning. HSE Statistics* show every year around 14 people in the UK die from CO poisoning caused by gas appliances and flues that have not been properly installed, maintained or that are poorly ventilated. Levels that do not kill can cause serious harm to health if breathed in over a long period. In extreme cases paralysis and brain damage can be caused as a result of prolonged exposure to CO. Increasing public understanding of the risks of CO poisoning and taking sensible precautions could dramatically reduce this risk.

*HSE Statistics also show a yearly average in the UK of 134 Carbon Monoxide poisoning incidents per year figures 2004 to 2009 Source: RIDDOR (The Reporting of Injuries, Diseases and Dangerous Occurrences)

Which Carbon Monoxide detector should I buy and where should I purchase one from?

Audible* Carbon Monoxide detectors come in many varieties and are manufactured by a wide range of companies.

They are also sold in many retail outlets including DIY/Hardware stores, online sales, supermarkets and trade retail stores. The prices can range from £15 to £30 each.

*Audible detectors give an instant warning of dangerous Carbon Monoxide levels the use of "Black Spot Labels/Cards" is not recommended.

Do I need a detector and is it a legal requirement?

The Building Regulations Northern Ireland have required the installation of Carbon Monoxide Detectors from the 31st October 2012.

Section 2.51 Technical Booklet L Combustion Appliances States:

Where a new or replacement combustion appliance*, not designed solely for cooking purposes, is installed in a dwelling, a carbon monoxide detector/alarm should be provided in the room where the appliance is located.

This is not a retrospective requirement for existing installations (unless a replacement appliance is being fitted) however HSENI strongly recommends the use of audible Carbon Monoxide (CO) alarms as a useful back-up precaution.

They must not be regarded as a substitute for proper installation and maintenance of gas appliances by a Gas Safe Registered engineer.

*A combustion appliance is any equipment that burns fuel such as wood, oil, coal or gas (both natural and LPG)

You can be particularly at risk from CO poisoning when you are asleep, because you may not be aware of early CO symptoms until it is too late.

Having an audible CO alarm could wake you and save your life.

What should I look for when buying a detector?

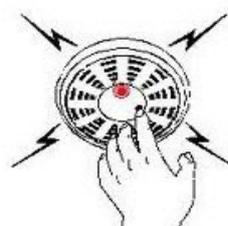
Before purchasing a CO alarm, always ensure it complies with British Standard EN 50291 and carries a British or European approval mark, such as a CE and preferably with a third party quality mark such as the BS Kitemark.

CO alarms should be installed, checked and serviced in line with the manufacturer's instructions. Particular attention should be made of the life span of the unit which can range from 3 to 10 years or more dependant on the manufacturer and the expected life span of the batteries, some have replaceable/removable batteries others are sealed in for the life of the unit.

What should I do once the detector is fitted?

Routine procedures recommended by the manufacturer (including testing) should be in the instructions supplied with the unit and should always be followed. Any detectors failing a routine test should be returned to the installer or supplier, or be replaced.

Never cover or paint over detectors once installed.



Always Test Your Carbon Monoxide Alarm to the manufacturers instructions!

Where should I fit the detector?

Always read the manufacturers instructions for the correct and safe location for installation of the detector.

It is not possible to give specific guidance in this document on the exact location of a detector/s which suits all types of premises and their usage. Further guidance can be found in the British Standard EN 50292 CO Alarm Location examples of which are given below.

It should also be noted that Carbon Monoxide is slightly lighter than air therefore fitting CO detectors at low level is not recommended.

Which Room?

Ideally CO Detectors/Alarms should be fitted in every room where a fuel burning appliance is installed. Further Detectors/Alarms may be fitted in other rooms to ensure adequate warning is given to occupants such as;

- Areas that are frequently occupied but may not hear a remote alarm.
- All rooms where people sleep.

However, if there is a fuel burning appliance in more than one room and the number of detectors is limited, the following points should be considered when deciding where best to put the detectors:

- fit the detector in a room containing a flueless* or open-flued* appliance, and
- locate detectors in a room where the occupant(s) spend most time.

If the domestic premises is a bed sit or studio apartment (a single room serving as both sitting and bedroom) then the detector should be located as far away from the cooking appliances as possible but close to where people sleep.

If the appliance is in a room not normally used (for example a hot press or cupboard), the detector should be put just outside the compartment so that the alarm may be heard more easily should it sound.

Alternatively, some detectors can be fitted with remote alarm sirens or interlinked (wired and wirelessly) so that should a detector alarm other detectors are activated to alert people in other areas.

Where in the room?

It should be possible to see any lights or flashing indicators on the detector when in the room.

As previously stated it is not possible to give specific guidance on the exact location of a detector which suits all types of room and their usage.

** Flueless appliances and open-flued appliances are equipment that both draw air from the area they are located in for correct combustion and operation of the appliance and MUST have correctly sized permanent vents fitted to supply air.*

The following points should be taken into consideration when determining an optimum location for any appropriate situation:

Detectors located in the same room as a fuel-burning appliance if the detector is located on a wall:

1. it should be located close to the ceiling;
2. it should be located at a height greater than the height of any door or window.

A ceiling mounted detector should be at least 300 mm from any wall, and for a wall mounted detector it should be at least 150 mm from the ceiling.

The detector should be at a horizontal distance of between 1 metre and 3 metres from the potential source of Carbon Monoxide e.g. The fuel burning appliance.

If there is a partition in a room, the detector/alarm should be located on the same side of the partition as the potential source.

Carbon Monoxide detectors/alarms in rooms with sloped ceilings should be located at the high side of the room.

Detectors located in sleeping rooms and in rooms remote from the fuel-burning appliance should be located relatively close to the breathing zone of the occupants.

Where not to install the detectors!

The detectors should not be installed:

- in an enclosed space (for example in a cupboard or behind a curtain);
- where it can be obstructed (for example by furniture);
- directly above a sink;
- next to or above a door or window;
- next to an extractor fan;
- next to an air vent or other similar ventilation openings;
- in an area where the temperature may drop below -10 °C or exceed 40 °C, unless it is designed to do so;
- where dirt and dust may block the sensor;
- in a damp or humid location;
- in the immediate vicinity of the cooking appliance.

Tobacco/Cigarette smoking

Smoking produces a significant concentration of carbon monoxide and can lead to false alarms from detectors.

Types of detectors

Many types of detectors are available ranging from portable battery operated units to fixed hard wired types which can be interlinked with fire alarm systems and each other to give greater flexibility and notification to occupants in the event of an alarm.

As previously mentioned detectors can now also be purchased with wireless interlinking capabilities to sound alarms remote from the source detector.

Whatever the type chosen great care should be taken not to damage them during installation, be checked regularly for correct operation and attention paid to expiry dates and replaced when needed.

What preventative measures can I take against carbon monoxide exposure?

- Ensure that any work carried out in relation to gas appliances in domestic or commercial premises is to be undertaken by a Gas Safe Registered engineer, competent in that area of work.
- HSENI strongly advises that gas appliances and/or flues are installed and serviced regularly for safety by a Gas Safe Registered engineer. If you live in rented accommodation, your landlord has a legal duty to carry out an annual gas safety check and maintain gas appliances. They must provide you with a copy of the completed gas safety check certificate.
- Always make sure there is enough fresh air in the room containing your gas appliance. If you have a chimney or a flue, ensure it is not blocked up and also ensure that vents are not covered.
- If you plan to install a gas fire in a bedroom, use a Gas Safe Registered engineer as there are legal requirements for installations in this area; do not use flueless appliances like gas cabinet heaters.
- Get your chimney swept from top to bottom at least once a year by a qualified sweep.
- If you have appliances that use other fossil fuels such as paraffin, seek advice from and make sure they are serviced and maintained by a competent person.

What are the symptoms of carbon monoxide poisoning?

Early symptoms of Carbon Monoxide (CO) poisoning can mimic many common ailments and may easily be confused with food poisoning, viral infections, flu or simple tiredness. Symptoms to look out for include:

! Headaches	breathlessness
! Nausea	dizziness
! Collapse	loss of consciousness
! Tiredness	drowsiness
! Vomiting	pains in the chest
! stomach pains	erratic behaviour
! visual problems	(Blurred or impaired vision)

If you or your family experience any of the above symptoms and you believe CO may be involved, you must seek urgent medical advice from either your GP or an accident and emergency department. You should ask for a blood or breath test to confirm the presence of CO. Be aware, CO quickly leaves the blood and tests may be inaccurate if taken more than four hours after exposure has ceased.

How do I know if I am at risk from carbon monoxide?

Although carbon monoxide (CO) is a colourless, odourless and tasteless gas, some of the signs that may indicate incomplete combustion is occurring, resulting in the production of CO, include:

- Yellow or orange rather than blue flames (apart from fuel effect fires or flueless appliances which are designed to display this colour flame check your manufacturers instructions for these units to ensure safe operation).
- Soot or yellow/brown staining around or on appliances.
- Pilot lights that frequently blow out.
- Increased condensation inside windows.
- Odours not usually present these can be from un-burnt products of combustion and could contain CO.

What should I do if I think my appliance is leaking or spilling carbon monoxide?

- Switch off the appliance and do not reuse until remedial action has been taken.
- Shut off the gas supply at the meter control valve (if you know where it is). If you have a Natural Gas supply contact Northern Ireland Gas Emergency Freephone Number: **0800 002 001**.
- If you have a Liquefied Petroleum Gas (LPG) supply then call your gas providers emergency number. You must discuss emergency arrangements with your LPG supplier and agree what action to take in case of a gas escape or emission of carbon monoxide from any LPG appliance.
- Open all doors and windows to ventilate the room - do not sleep in it.
- Visit your GP urgently and tell him/her that you believe your symptoms may be related to carbon monoxide poisoning and request either a blood and/or breath sample.
- Contact a Gas Safe Registered engineer to carry out a safety check and make repairs.

Further information

For more advice on using a Gas Safe Registered Installer you can go to the Gas Safe Register website at:

www.gassaferegister.co.uk

Or by ringing: **0800 408 5500**.

Free leaflets giving further advice on gas safety can be downloaded from HSENI website:

www.hсени.gov.uk

select Gas from the drop down topics at our home page and follow the link "Resources for this topic can be downloaded here".

For further information contact:

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Fax: 028 9023 5383

Email: gassafety@hсени.gov.uk

This guidance is issued by the Health and Safety Executive Northern Ireland. Following the guidance is not compulsory and you are free to take other action.. This guidance draws on several documents and sources including the HSE (GB) and British Standards for its content.

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