

BOROUGH MARKET

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GREEDYGO

Self Service

Self Service

Raspberry

Cupcake

Chocolate

Chocolate

Chocolate

Salted

RED TONGUE

NCASS Guide Gas Safety in Gazebos How does your set up compare?

Use this guide to see how your gazebo set up compares. This will give you a good idea of what a suitable gas set up looks like.

Consider the following “WHAT, WHY, HOW” and whether there is more you need to do to ensure your gazebo set up is gas suitable for the trading season ahead.

The systematic considerations for the gas set up in a gazebo are broken down into:

1. Suitable tented structures
2. Minimal distancing
3. Correct cylinder siting
4. Connecting cylinders to appliances
5. Ventilation



1. Suitable tented structures

WHAT is required:

All gazebos should be of a proven fire performance when being used with gas fired appliances. They should be compliant with certain British Standards e.g. BS 7837:1996 which basically mean they have been sufficiently tested for flammability and can be categorised as fire retardant.

Check that your gazebo has an international fire rating grading certificate of at least B1 which means the material is highly fire-retardant, not completely fireproof (hardly flammable).

WHY is it done this way:

- **Flame resistance** - The material will prevent the rapid spread of flames and will not continue to burn if the ignition source is removed. If a fire should start in or around your gazebo, the flame resistance will give you chance to take appropriate steps to prevent the fire spreading (e.g. isolating the gas supply) or allowing you to escape the structure safely and preventing serious injury or loss of life.
- **Safety Standard** – A B1 rating is widely recognised by local authorities and event organisers for use at events and in public places. Insurers will require that any temporary structure including a gazebo is fit for purpose and meets relevant safety standards.



How it is done:

To verify your gazebo:

- **Check the label** – look for a sewn in label on the canopy roof or side walls which should reference B1 (or EN 13501-1, which is the standard for classification).
- **Manufacturer documentation** – a fire-retardant certificate (ref BS 7837) should have been supplied with the gazebo or should be available upon request from the manufacturer. If you cannot locate a B1 label or certificate, you should contact the manufacturer to confirm.

If buying a new gazebo always check for the B1 classification, as many domestic/leisure and cheaper gazebos are not fire rated.

Your selected gazebo should also be suitable to withstand the rigours of regular use and stowing away. For example, a commercial grade gazebo that will withstand the regular prolonged use and weather conditions, unlike a gazebo designed for infrequent leisure use in the garden. The last thing you want is your gazebo to rip or be blown away in windy weather conditions.

Consider the fact you may need help to assemble/disassemble and stow away large commercial grade gazebos. This is likely to be at least a two person job.

Common mistakes:

Poor quality tented structures used that do not have B1 classification. Underestimating the size and weight of gazebo for single person set-up.



2. Minimal distancing

WHAT is required:

Minimum separation distances must be considered between individual tented structures where gas fired appliances or appliances with open burners/flames are to be sited.

When siting appliances within the gazebo, minimal distances must be considered from combustible materials (e.g. plastic sheeting/ tarpaulin, wooden sheets, furniture, packaging waste etc). Anything within the gazebo that has no indication of its fire retardant/resistance shall be considered a fire risk and extra measures to ensure a minimum distance of 600mm between the appliance(s) and the flammable material be enforced.

WHY is it done this way:

Even a B1 gazebo is not completely fireproof, so extra safety measures must still be considered when siting LPG cylinders and appliances to avoid any potential fire risk and the possibility of the domino effect (fire spreading from one gazebo to the next).



A large bank of appliances and 47Kg cylinders sited too close together and too close to the sides of adjacent gazebo and other combustible materials – no minimum distancing maintained.

How it is done:

To remove the risk:

- Check your set up in relation to other traders and aim to achieve a minimum separation distance of a least 3 metres between your gazebo and the next tented structure.
- Consider placing non-combustible barriers between appliance(s) open flames and any exposed area that could become ignitable where a minimum distance of 600mm between the appliance(s) and the flammable material cannot be guaranteed.
- If it is not possible to place the minimal distance between the sides of the gazebo and the open flames then remove the wall of gazebo.

Common mistakes:

Gazebos sited too close together, leaving no fire separation.
Appliance(s) (open flames) sited too close to the sides of gazebo causing scorching/ burn marks.



A gazebo fire – leaked LPG from an incorrectly connected cylinder ignited, causing the whole gazebo to be engulfed in flames and subsequently exploding the cylinders stored inside.



Adjacent gazebo – The burnt out remains of the gazebo following the fire.

Note: How close the adjacent gazebo was located which has also been destroyed by the fire – the domino effect!

3. Cylinder Siting

WHAT is required:

LPG cylinders (e.g. Propane) for use with appliances in a gazebo, must be stored upright in the open air in a well-ventilated environment (this applies to full and empty cylinders).

If a cylinder is sited inside the gazebo, then this is a single 19Kg propane cylinder connected to single appliance only.

The minimum distances of cylinder(s) from ignition sources and combustible materials shall still apply when safely siting cylinders for use with appliances in a gazebo. Consider the removal of the walls of the gazebo to meet this requirement.

WHY is it done this way:

LPG is highly flammable and explosive. Propane cylinders must only be used outside in the open air.

The regulator connected to the cylinder uses a valve system to control the flow of gas, releasing small amounts of gas into the surrounding area, to prevent the build-up of pressure. This controlled release of gas is why it is so important that propane cylinders are sited outdoors in well-ventilated spaces and are never stored or used in enclosed spaces. Otherwise, the release of gas by the regulator could accumulate indoors and become ignitable.

The safe siting of LPG cylinders is arguably the most important part of any type of gas installation. If the cylinder is sited in an unsafe way, the whole activity is unsafe and could lead to a potentially catastrophic event.



A fully enclosed gazebo with multiple LPG appliances and cylinders in use – resulting in poor ventilation due to the build-up of products of combustion and inadequate fresh make up air.

The siting of cylinders inside the gazebo also increases the risk of flammable explosive gas accumulating in the enclosed space.



How it is done:

To reduce the risk of fire and explosion ensure there is a minimum distance of 1m between LPG cylinders and:

- Ignitable sources e.g., generators and cooking appliances.
- Combustible materials e.g., rubbish and vegetation, sides of gazebo.

The gas is heavier than air so we need to avoid the potential of gas concentrating in pockets below ground which could become ignitable. Ensure there is minimum distance of 2m between LPG cylinders and:

- Un-trapped drains and unsealed rain gullies.
- Openings to lower levels or cellars.

If a single 19Kg cylinder is used inside the gazebo then a dynamic risk assessment is required to ensure:

- Minimum distances to ignitable sources (e.g. the appliance/heat source).
- The cylinder is secured upright and there is readily available access to the cylinder valve.
- The back or sides of the gazebo are removed to allow for adequate ventilation within the gazebo.

Cylinders sited outside of the gazebo should be:

- Secured from toppling over (ideally sited on hard and firm ground but if they are to be on grass try and secure them with a stake of some sort.)
- Secured and properly supervised so they cannot be accessed or tampered with by the public (particularly if they are stored out of direct sight).
- Readily accessible to authorised personnel so they can be isolated (turned off) in the event of an emergency.
- Stored away from walkways and vehicular traffic routes.



An incorrect attempt to store cylinders at the rear of a gazebo – cylinders are not secured upright and are sited too close to combustible materials.



A non-combustible storage cage or locker would be a safer way of storing cylinders associated with a gazebo set up.

It should be lockable to prevent accidental or deliberate tampering, but the keys should remain readily accessible.

Signage shall be displayed to warn of the presence of gas e.g. “No smoking” signage.

The number of cylinders kept at the unit shall be no more than the number needed to meet the maximum offtake requirements of the appliances, plus an equivalent number in reserve. Disconnected, unused and empty cylinders shall be capped/bunged.

Common mistakes:

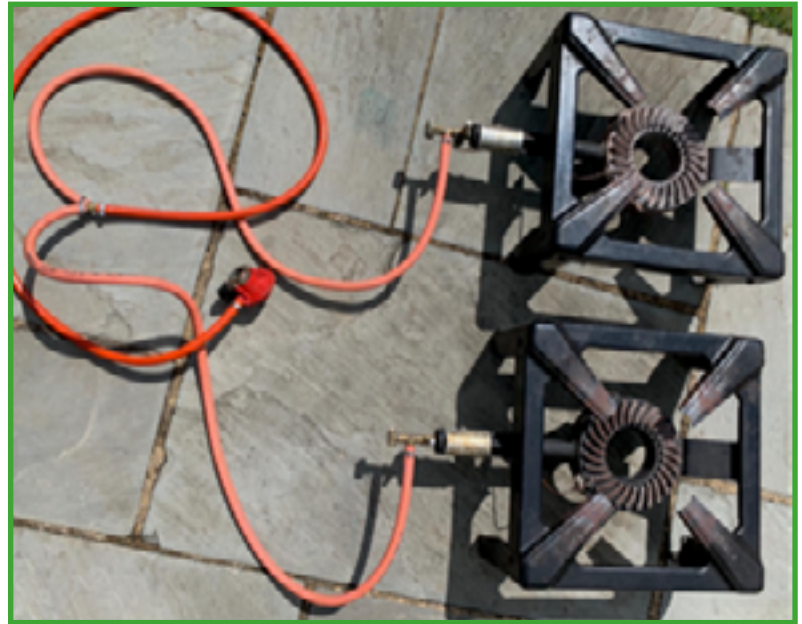
Multiple cylinders in use inside a gazebo individually connected to appliances. Cylinders sited too close to appliances or sides of gazebo increasing fire risk. Too many spare cylinders stored in relation to the gazebo which have not been properly distanced or secured to prevent accidental or deliberate tampering.

4. Connecting cylinders to appliances

WHAT is required:

- Where single appliances are connected via flexible hoses or tubes these are metallic over braided or PVC wrapped or both (not orange hose unless preinstalled by the appliance manufacturer).
- Flexible hose is a maximum of 1.5m in a single length, in good condition and within the manufacturers expiry date as printed on the hose/regulator.
- The connections are crimped or factory swaged. (Jubilee clips or winding straps are not used).
- Multiple appliances in use are connected by a single supply gas line either by a fixed rigid pipework system or the Quick Safe System. (Orange hoses are not used for multiple appliance installations.)
- Where multiple appliances are connected, the appliances have individual isolation valves. Otherwise, the flexible branches must be removable, to isolate appliances independently.
- Where single or multiple appliances are connected to a single cylinder a regulator must be present. An Over Pressure Shut Off (OPSO) Regulator is recommended.
- Where multiple cylinders are supplying gas then an OPSO regulator is required.
- Where multiple cylinders are in use the gas supply can be isolated with one single action – a single acting isolation valve (emergency control valve).
- All joints and connections are leak tested by brushing or spraying with leak detection fluid prior to use. Leak detection fluid is kept readily available as part of the LPG essential safety kit.





Incorrect use of excessive length of flexible orange hoses, connected with jubilee clips.



Metallic over braided hose

OPSO Regulator

PVC Wrapped tube

The Quick Safe Rig - connection of multiple cylinders with the correct hoses and connections in place.

WHY is it done this way:

Using the correct hose and connection methods is essential to prevent potentially dangerous gas leaks and to enable the best flow of gas to the appliances (efficiency).

PVC wrapped or metallic over braided hoses and tubes are hard wearing and will better withstand the rigours of continuous use and being repeatedly set up and then packed away, are less likely to split resulting in dangerous gas leaks and will last longer than orange hosing, saving money in the long run.

A regulator **MUST** be fitted onto all installations – it does an important job of reducing the pressure.

Incorrect connections such as jubilee clips, string, cables ties and tape, cannot guarantee a gas tight connection and may cause splits and cracks in the hosing, creating gas leaks.

Hose lengths need to enable the minimum 1m distance between cylinders and ignition sources but should not exceed 1.5m in length. Excessively long hoses can lead to pressure loss, making the appliance work harder and increasing the risk of incomplete combustion (Carbon Monoxide). It can also cause a trip hazard, and if the hose is accidentally pulled out of the connection with the cylinder, then ignitable gas suddenly escapes, which could lead to a fire or explosion.

HOW is it done:

Check all flexible hoses and regulators are in good condition and within the manufacturers expiry date as printed on the hose/regulator (e.g. flexible hoses – 5-year expiry, regulators – 10-year expiry). Ensure they are visually checked before connecting and replaced when showing evidence of damage (e.g. splits and cracks).



A manufacturer fitted hose showing signs of cracking and splitting. This hose must be replaced. Hoses showing significant wear and damage are considered a risk to the user should they continue to use them.



Check your installation for incorrect connections and orange flexible hoses. You are advised to replace these at the earliest opportunity. Seek advice from a Gas Safe Registered Engineer competent in LPG. Do not attempt to change hoses etc yourself.

Ensure all joints and connections are leak tested by brushing with leak detection fluid prior to use. (Leak detection fluid should be kept readily available as part of the LPG essential safety kit.

Complete the NCASS Gas Safety Checklist or refer to the NCASS Fire Risk Assessments for LPG in gazebos, to check which measures are outstanding and then work with your gas engineer to implement these.

Common mistakes:

Excessively long orange hoses, connected with jubilee clips. Multiple cylinders “in use” inside a gazebo individually connected to appliances (multiple emergency control valves requiring isolation in an emergency). No regulator fitted or incorrectly sized regulator in use.

5. Ventilation

WHAT is required:

Gazebos must not be kept fully enclosed when appliances are lit and in use. Instead, some or all sides of the gazebo must be removed to aid ventilation. In a gazebo, ventilation should be provided on opposing sides to promote air changes. This can be achieved with the half panel display open at the front which guarantees a supply of fresh air. In addition to this by removing the back panel in its entirety this creates a path of cross ventilation (makeup air/purge air).

Removing the side panels of the gazebo can also help with achieving the minimum 1m distance between cylinders and ignition sources and facilitated unhindered access to the cylinders and the creation of an emergency fire exit.

Air Quality is the most important thing when using large gas fired appliances in small, confined spaces and it is the one thing in street food that is free! So don't close up the sides of your gazebo, instead utilise the free air and trade safely.

WHAT is required:

We fire up cooking appliances by mixing gas, air and a spark to create the flame. That flame stays alive by burning the oxygen in the air (combustion). The gas fired appliances are subsequently taking the same oxygen that you need to breath comfortably from within the working space. Meanwhile you are breathing in the Products of Combustion (POCs) e.g. Carbon dioxide (CO₂) and other impurities, especially if you burn the food!

A blue flame on an appliance is a good thing! It indicates that the appliance is receiving the right amount of air/ventilation to enable complete combustion and for the flame to remain lit.

A yellow and wispy or an orange and angry flame can be an indication that there is insufficient ventilation to support combustion and vitiation of the air may be occurring.



A yellow wispy flame due to insufficient air.



A blue flame, sitting correctly on the burner – an indication that the appliance is correctly ventilated.

HOW it is done:

To ensure adequate ventilation inside the gazebo remove the back panel of the gazebo and have the front panel at least half down for service, this will ordinarily provide you with a free flow of air.

You can further improve ventilation and air quality by additionally removing the side panels of the gazebo or adjusting them to a halfway position.

Being able to fold the side panels into halfway position can still allow for a protective boundary around the trading area whilst allowing for further ventilation. If the sides of your gazebo will not fold into a halfway position and you still need to provide a protective boundary to your trading areas, then you could still remove the gazebo sides and in their place use some lower height portable barriers to cordon off the sides. This will allow additional air into the gazebo making it more comfortable to breathe.



Good examples of well-ventilated gazebo set ups



An example of a gazebo with the back and side panel removed and the front panel half down for service.

This trader has created a suitable low level barrier on the side, without hindering the free flow of fresh air.



A gazebo set up with the side panel folded providing some wind protection to the trader area, whilst providing additional high and low ventilation to improve air quality management.

How to counteract the wind:

Strong winds can be problematic. They can result in gas flame being blown out, knocking out the gas supply to an appliance, or sweeping away the heat from a cooking vessel creating longer cooking times and less efficiency.

Avoid the temptation to close the gazebo sides or wrap the appliance in aluminium foil to prevent the flame going out. Instead install a suitable wind deflector to the appliance.

Gas appliance wind deflectors (also known as windscreens, windshields or flame guards) work by creating a physical barrier around a burner that breaks up gusts, stabilises the flame, and concentrates heat.

There are a range of sizes and fits depending on the appliance type and they are relatively low cost to purchase (approx. £20-£60). Using a wind deflector with appliances means you will be counteracting the wind without starving the appliance of air.



Avoid wrapping burners in aluminium foil as this will starve the appliance of available air, causing incomplete combustion, and harbouring a build up of carbon and grease from cooking.





Windshields fitted to protect burners from strong winds.



A Foker Europa stainless steel windshield.

Common mistakes:

Yellow wispy flames appearing on appliances due to insufficient ventilation. Appliances heavily wrapped in aluminium foil. Enclosed gazebos set ups with multiple appliances lit and in use.



More information

For more useful advice and information check out the “[LPG Safety in the Spotlight](#)” articles on the NCASS Gas Hub.

Check out our free guides on the NCASS Gas Hub Free Resources area. <https://www.ncass.org.uk/gas-safety-week-resources/>

For further training - NCASS Safe Use of LPG in Mobile and Outside Catering <https://www.ncass.org.uk/training/health-safety-courses/lpg-gas-safety/>

Check out the NCASS member resources - Gas Safety Checklist and Fire Risk Assessment templates which are inclusive of the NCASS Safety Management System.

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