Installing gas in your campervan can be daunting and dangerous Therefore, you must follow the **BS EN 1949:2021** campervan gas regulations, guidelines and procedures to ensure you and your occupants are safe.

A copy of the **BS EN 1949: 2021** gas regulations is available to buy here.

However, there's a lot of outdated, misleading and untrustworthy information out there. And when it comes to installing gas, you need **information you can trust!**.

This post incorporates the current campervan gas regulations and qualified gas engineer knowledge. Undoubtedly, an informative and reliable source of information for anyone installing gas to their campervan.

The regulations are available to anyone but, unfortunately, come at a **hefty price tag** of a couple of hundred pounds.

So, they're not easily accessible to anyone installing gas themselves who are still required to comply with them. Therefore, to ensure you're compliant and safe, we've detailed the **campervan gas regulations below**.

Moreover, we have taken out the relevant information for campervans and put it into easy to absorb chunks.

Testing

- The gas system must be tested to 5x the working pressure using a manometer (air pressure tester). So, the testing pressure for campervans (30 mbar) systems will be 150 mbar.
- A maximum pressure loss of 5 mbar is acceptable.
- All isolation valves should be open and all appliances turned off to ensure the entire system is tested.
- Test procedure
    - Pressurise the gas system to 150 mbar
    - Leave it for 5 minutes so the air temperature evens out (the temperature will alter the state of the air in the pipes).
    - After another 5 minutes, compare the reading. The maximum pressure drop is 10 mbar; anything more and further investigation is required.
- The high-pressure filling and regulator hoses can be tested using leak detection spray at working pressure. Bubbles will form around the joint if there is a leak. There should be no leaks within 30 seconds of applying.

Cylinder Compartment

- Gas cylinders must be stored in a sealed compartment from the living space.
- A maximum of 2 cylinders of not more than 11 kg each.
- The compartment must have a 50mm upstand at low level, so the door must not go to the floor. This is to ensure any leaked gas is contained.
- The cylinder(s) must be upright and fixed inside the compartment at high and low levels using a cylinder base and/or straps.
- All methods for securing the cylinders must be undoable without using a tool.
- You must be able to replace the LPG cylinders without disturbing the LPG installation and equipment.
- The cylinder position must not obscure the regulator, isolation valves or drop-out vents.

- The cylinder must be a safe distance from the vehicle's exhaust system. The exhaust system should be no closer than 250mm when viewed from above and at least 300mm from underneath (outside) the vehicle. Alternatively, you can use a thermal heat shield that is not smaller than 25mm and maintains the compartment ventilation. The exhaust can cause heat through the floor and into the cylinder, increasing the pressure inside.
- Cables can be routed through the compartment, but there must be no exposed joints in the cable. Additionally, there must be no joins in conduit or trunking that route through the compartment.
- Gas supply control can use ELV (extra low voltage) wiring only.
- Any holes in the compartment, except for ventilation holes, must be sealed.
- Cylinder compartments can be accessible from inside the living space as long as they are sealed when closed to ensure no gas can leak into the camper.

Cylinder Compartment Ventilation

- For low-level ventilation only – The free area must be equivalent to 2% of the floor area of the compartment. A typical 50mm drop-out vent will provide 800mm² of free area.
- For high and low-level ventilation – The free area must be equivalent to 1% of the floor area of the compartment.
- A cylinder less than 7kg can use a 20mm drop-out vent (internal access compartment only).

Working Pressure And Regulation

- The fixed working pressure of campervan gas systems must be 30 mbar. The maximum flow rate for a 30 mbar regulator is 1.5kg/hr.
- Pressure regulators can be fitted directly to the cylinder, wall-mounted or slide-out tray. Also, they must be installed inside the compartment with the cylinder.
- The maximum length of high-pressure hoses is 400mm and should be routed to avoid stress on the joints. High-pressure hoses are used between the filling point to the cylinder and the cylinder to the regulator.
- The gas system must have clear markings of the pressure in the system. Typically, regulators have a sticker on them stating their pressure.
- High-pressure cylinder hoses must be clearly marked with their pressure rating (high-pressure LPG), colour-coded, and tested for LPG resistance.
- Replace any hose that's damaged or showing signs of wear, stiffness, or cracking.
- Rubber hoses should be replaced every 5-10 years.

Pipework

- The gas pipe between the regulator and the appliances must be rigid and made from copper or steel.
- All fixed appliances must be connected to rigid pipework. A continuous rigid pipe from the regulator to the appliance is acceptable.

Flexible Hoses

- A flexible hose can be used for non-fixed appliances, e.g. a camping stove connected to a gas bottle that can be stored in a cupboard.
- This flexible hose must be less than 750mm in length.

- A shut-off valve must be installed before the start of the hose.
- The flexible hose must meet current LPG standards.
- It must be accessible for inspection so it cannot be routed behind cupboards or areas where it's concealed, like under floors.
- Replace a flexible hose that's damaged or showing signs of wear, stiffness, or cracking.
- Flexible hoses should be replaced every 5-10 years.

Gas Pipe Fittings

- Campervan gas pipes must be made from copper, steel or stainless steel and protected from corrosion where necessary. External pipes require a plastic coating to protect them from corrosion.
- Plastic pipe fittings must not be used.
- Permitted gas pipe fittings are cutting ring type, capillary, flare, compression and threaded fitting for nozzle.
- PTFE tape must be used on threaded fittings.
- PTFE tape must not be used on compression fittings. The thread does not seal a compression fitting, so applying PTFE tape could cause a leak.

Installation Design

- LPG pipes must be kept clear of electrical cables and components where possible. Alternatively, the minimum space between them in a parallel path is 30mm and 10mm anywhere they cross.
- Pipework and fittings must be installed so they're accessible for testing and maintenance purposes.
- There must be no undue strain on the system, especially at joints, as they're the weak points.
- Pipework and fittings must be protected against mechanical damage by installing them in a safe location and protecting them from vibration or user damage.
- Plug-in gas outlets must be installed outside the vehicle, be protected from road dirt and water, not contain any electrical connections and be labelled 'LPG outlet only'.
- Copper pipework must be clipped to the surface with a maximum distance of 500mm between each clip. Whereas steel and stainless steel pipework require a maximum distance of 1 metre. Put as many clips as necessary for it to be secure.

Rubber coated metal clips should be used as they're strong and won't damage the pipework.

Shut Off Valves And Isolation

- All pipe joints, hose connections, valves and isolators must be easily accessible and identifiable.
- Each appliance must have a gas shut-off valve for isolation. The shut-off valve of the cylinder/tank can be used if a single appliance is installed.
- The shut-off valve must be clearly labelled as 'gas' and the appliance it controls. Typically, the handle colour for gas fittings is yellow.
- It must be obvious what's on/off. Typically, on is when the handle is in line with the valve and off is when it's at a right angle to it.
- A safety closing device (excess flow valves (EFV) or crash sensor activation valves (CS)) must be installed on appliances that will be used while the vehicle is in motion to prevent the uncontrolled release of LPG in an accident.

- If an over-pressure relief valve is utilised, it should release the gas into the cylinder/tank compartment or outside the vehicle.
- Shut-off valves and isolators must be positioned so they're protected from road debris and dirt. Alternatively, a cover must be used as protection.

Appliances

- Must be suitable for use in a campervan and have relevant instructions.
- Cookers and hobs must have secure burner caps.
- LPG appliances must be of the room-sealed type. So, the combustion (inlet) air must come from outside, and the exhaust (outlet) must vent outside. They must not use air from inside the vehicle for combustion.
    - Space heaters have two air ducts routed to outside the vehicle.
    - 3-way fridges have exterior side vents in the vehicle.
- Space heating must be provided by room-sealed appliances.
- Plug-in gas sockets are for external gas appliances only.
- Non-fixed/portable cooking appliances that need to be stored whilst driving:
    - Must have a shut-off valve positioned before the flexible hose to the appliance;
    - The flexible hose must:
        - Be accessible. Therefore, it can't be installed under floors, above ceilings or behind walls.
        - Be less than 750mm in length.
        - Not touching hot surfaces is liable to damage the hose.
        - Be protected from stress and damage.
- If the appliance incorporates a plug-in socket for disconnection. The fitting must be able to close automatically when the appliance is disconnected.

Flue Terminals And Locations

- Flue pipes and accessories must be suitable for their purpose and appliance. Also, they must be installed as per manufacturer instructions.
- The entire flue system must be accessible for periodic inspections. Using a tool to access the flue is acceptable.
- A flue outlet must be at least 500mm from the gas filling point.
- A wall or roof flue outlet cannot be directly underneath or within 300mm of an opening window or vent. This prevents flue gases from being drawn into the vehicle. However, the flue must be installed underneath an opening window. In that case, an automatic shut-off valve must be installed to turn off the appliance when the window is open.
- Flexible flue pipes must be continuous and contained inside an air duct.
- Campervan flues must be secured to ensure they won't move or come loose while the vehicle is in transit.
- Suppose the vehicle has a flat underside with chassis members (e.g. Luton vans). In that case, drop-out vents and the flue outlet must not be in the same 'channel' because flue gases could collect and enter the vehicle.

Installation Of LPG Tanks/Cylinders

- Permanently fitted gas tanks/cylinders must have an auto cut-off of 80% so they can't be overfilled.
- They must also have a manual indicator, pressure release valve and overflow regulator.

- The tank/cylinder and its components must be fitted so that only the gas is extracted. Therefore, cylinders cannot be on their side, and the regulator must be fitted above the tank/cylinder. Otherwise, liquid may get drawn from the tank/cylinder.
- A warning label must be installed close to the tank/cylinder stating, ‘All appliances are to be manually isolated before refuelling the cylinder’.
- The tank filling point must be installed outside the vehicle and at least 500mm from a vent, opening window and flue outlet.

Labels

- A label stating that ‘all gas appliances must be turned off in case of refuelling (LPG, diesel and petrol)’ must be inside the vehicle where it’s easily seen.
- A ‘Close cylinder/tank during motion’ label is required near the tank/cylinder for appliances not used while the vehicle is in motion.
- Shut-off valves must be clearly labelled to quickly identify what they control.
- External plug-in outlets must be marked with ‘LPG outlet only’.

Slide Out Tray

- A slide-out tray can incorporate multiple appliances. Each appliance must have its own shut-off valve.
- One flexible hose must connect the LPG appliance/canisters on the slide-out to the vehicle LPG installation.
- The hose assembly must be less than 750mm and protected from stress and damage.
- The regulator must be mounted to the cylinder, wall of the compartment or on the slide-out tray.
- Before the hose assembly:
    - an excess flow device must be installed;
    - A shut-off valve must be installed no more than 500mm from where the flexible hose meets the solid pipe.

Earth Bonding

- Metallic gas pipes must not be used as a bonding conductor. Only a suitable cable should be used for bonding conductors.
- Metal gas pipes should be connected to the main earthing terminal with a “protective bonding conductor.” An earth cable must connect the gas pipe, using a bonding clamp, to the main earthing terminal, usually the 230v fuse board earth busbar in campervans.
- The minimum cable cross-sectional area for copper pipework less than 35mm² is 10mm².

Be aware, these notes are NOT direct quotes from the regulations; they have been reworded, but they still contain the relevant information.

Please refer to the BS EN 1949:2021 campervan gas regulations for the exact wording.