

Gas safety in catering and hospitality

HSE information sheet

Catering Information Sheet No 23 (Revision 2)

Introduction

This information sheet has been produced by the Hospitality and Catering Industry Liaison Forum whose members include trade and professional associations, unions and enforcement authorities. Members' associations are free to reproduce and disseminate this guidance to relevant catering establishments. The guidance is issued by the Health and Safety Executive.

It is aimed at those operating catering and hospitality businesses. It gives advice on relevant aspects of safety in the use and maintenance of gas-fired equipment used for catering. It builds on information in both the HSE Catering Information Sheet 10 *Ventilation in catering kitchens*¹ and current guidance issued by Building and Engineering Services Association (B&ES, formerly HVCA) *Specification for kitchen ventilation systems (DW172)*² on design specification for ventilation systems with gas supplies. This information sheet also incorporates guidance from Catering Information Sheet 3 *Precautions at manually ignited gas-fired catering equipment*, which has been withdrawn.

The gas catering industry sector, in conjunction with the Institution of Gas Engineers and Managers (IGEM), are in the process of producing guidance which will replace the detailed technical guidance for installers, designers and engineers in the previous revision of this information sheet.

What the law says

Gas Safety (Installation and Use) Regulations 1998

Any work with gas appliances will be subject to the duties imposed by the Gas Safety (Installation and Use) Regulations 1998 (GSIUR).³

Gas Appliance (Safety Regulations) 1995

These Regulations require that all new appliances for commercial catering must be CE marked. CE marking indicates conformity with the Regulations

and that a notified body has approved the appliance. Although the Regulations apply principally to domestic appliances, industrial space heaters and commercial catering equipment are also covered.

The principal standard that applies to safety standards for gas-fired catering equipment is BS EN 203-1: 2005 + A1: 2008 *Gas heated catering equipment. Safety requirements*.⁴

The Road Vehicles (Construction and Use) Regulations 1986 (Part 4 D)

These Regulations apply to the use of liquid petroleum gas (LPG) appliances in vehicles. They require that the vehicle is adequately ventilated and state that pilot lights should not be lit while the vehicle is in motion. This increases the chance of the flame going out, and consequently, the risk of fire or explosion. There are some exceptions to this, such as in specialised vehicles for 'meals on wheels' which have special safeguards installed. Consult the Regulations for detailed guidance.⁵

The Health and Safety at Work etc Act 1974

Employers and the self-employed have duties under the Health and Safety at Work etc Act 1974 to ensure so far as is reasonably practicable, the health and safety of their employees and others affected by their work. Employees have a duty to ensure that their work does not pose risks to others and not to interfere with anything provided for health and safety reasons.

Installation and repair work on gas appliances

Such work will include equipment using natural gas or LPG in hotels, restaurants, takeaway outlets, mobile catering units etc.

Everyone who does this type of work must be competent. Whether contractors or in-house staff do the work, the company or individual must be Gas Safe registered and operatives must have valid certificates

of competence relevant to the particular types of gas equipment and gas work they are involved with. This is a requirement of GSIUR.

In premises where GSIUR does not apply, such as canteens in factories, employers need to ensure that any staff doing such work are competent. In practical terms, Gas Safe registration is the clearest way of demonstrating competence.

All hospitality and catering employers using contractors for gas work should take reasonable steps to check that contractors have a current relevant certificate of competence. This can be checked by asking to see an individual's Gas Safe identity card and verified by contacting Gas Safe Register on 0800 408 5500 or looking on the website www.gassaferegister.co.uk. People can sometimes use of out-of-date certificates.

Maintenance and inspection by employers and the self-employed

Regulation 35 of GSIUR requires employers and the self-employed to ensure that gas appliances, flues, pipework and safety devices are maintained in a safe condition. Gas work, as defined by GSIUR, including inspection and maintenance, should only be carried out by a competent, Gas Safe registered engineer. The engineer should carry out the work in accordance with relevant and current industry Standards or Codes of Practice. The frequency of inspections and equipment servicing may vary depending on the equipment and its use and should follow manufacturer's recommendations but, as a general rule, annual inspections are a reasonable minimum frequency, with repairs carried out as necessary.

Landlords and residential accommodation

In addition to duties to maintain appliances, flues and pipework, landlords must have all appliances and flues checked every 12 months by a Gas Safe registered engineer, and provide tenants with a copy of the report (the landlord's gas safety record) within 28 days. This applies to residential accommodation (whether rented or occupied under a licence), including hotels; guest houses; bedsits; communal kitchens; tied accommodation; holiday boats; caravans and staff accommodation, even if on industrial or other premises, not otherwise subject to the Regulations. So this duty may apply in certain areas of the hospitality industry.

Equipment: Use of gas and routine tasks

All catering and hospitality staff that use gas equipment should be trained in how to use it and in how to carry out visual checks for obvious faults. This will include such things as damaged pipework and connections, inoperative flame supervision devices (these shut off the gas supply automatically if the flame disappears), missing restraints on equipment, inoperative locks on castors of mobile equipment and smells of escaping gas. All staff should be familiar with what to do in these situations.

Routine tasks such as connecting and disconnecting plug-in gas connections to appliances when moving for cleaning, or changing LPG cylinders or hoses, can be carried out by people who are not Gas Safe registered, but they must be competent. Only a Gas Safe registered person should carry out new installation of an appliance with a plug-in gas connection, including the safety examinations prescribed in GSIUR.

Ventilation

Most catering kitchens use mechanical ventilation systems to create a comfortable working environment that promotes health and safety at work as well as good hygiene and food safety.

Properly functioning ventilation systems are important in ensuring kitchen safety. Using a properly designed and fully specified system, with a record of its design performance characteristics, as required by DW172, will make it considerably easier for owners, caterers and gas engineers to assess whether the ventilation system has been appropriately designed for the load being used.

HSE Catering Information Sheet 10, *Ventilation of kitchens in catering establishments*, provides guidance on ventilation requirements for kitchens. Read it in conjunction with this information sheet.

Ventilation ductwork

Sources of fires in ductwork above open flame gas appliances include flambéing, flame-grilling and stir-frying. This is usually caused by one of these ignition sources igniting a build-up of grease and fat. You can greatly reduce the risk of such build-ups in a ductwork system by using an appropriately designed canopy with modern grease filtration.

Clean ductwork regularly to prevent build-up of grease and fat. This can be an unpleasant and awkward task and you need to take great care to do a thorough job, as this is often skimped.

B&ES provide practical advice on how to adequately clean ventilation systems in their publication, *Guide to Good Practice: Internal Cleanliness of Ventilation Systems*.⁶

BS 6173:2009 Specification for installation and maintenance of gas-fired catering appliances for use in all types of catering establishments (2nd and 3rd family gases)

This British Standard⁷ specifies the installation requirements for new and second-hand, gas-fired appliances and places emphasis on food hygiene and ventilation requirements. Although not a statement of the law, British Standards set out agreed good practice.

Interlocking of mechanical ventilation system and gas supplies

BS 6173 provides installers with design information on this subject. The objective of all ventilation systems is to ensure safe working conditions in the kitchen. The cooking process will generate products of combustion, heat etc, all of which are required to be kept within safe environmental limits by operation of the ventilation system. If a mechanical system fails or is not working correctly, the environment may become unsafe or unfit for work.

It is important to make sure all natural and mechanical ventilation systems are working effectively. The installer should have fitted the appropriate interlocking system between any mechanical ventilation system and the operation of gas appliances so that failure of the system causes the gas supply to them to be shut off. Installation of manual bypasses to such interlock systems is not permitted.

Effective preventative maintenance and cleaning will help to prevent appliances from regularly being shut down due to the ventilation system failing.

Existing installations

There are large numbers of installations that do not comply with BS 6173 or the law. While it is accepted that the catering industry record in terms of reported incidents is good and BS 6173 is not retrospective, do not be complacent.

Where there is no interlocking of the ventilation system and gas supply, assess whether a risk is likely to arise and, if so, make sure it is prevented or controlled.

Additional guidance regarding these situations can be found in *Guidance on ventilation and extract requirements for commercial catering installations*.

Assessing the risk

For general advice on risk assessment, see www.hse.gov.uk/risk. Factors that will increase the risk include:

- evidence that the ventilation system is not used or is unreliable;
- small room volume;
- obvious poor design/maintenance of the ventilation system (long, convoluted ducts, broken fans, leaking ductwork, visible escape of cooking fumes/steam etc);
- lack of user awareness of the effect of using gas appliances without adequate ventilation;
- poor general ventilation;
- extensive use of gas-fired appliances for long periods;
- ageing system/installation;
- lack of routine or planned maintenance.

Factors that will reduce risk include:

- good natural ventilation;
- satisfactory fume removal through ventilation ductwork by natural draught alone;
- well-maintained ventilation system;
- provision of an appropriate ventilation system interlock;
- good user awareness of the risks and proper documented procedures for using the ventilation system;
- minimal use of gas-fired appliances;
- modern ventilation system;
- large room size;
- clear, permanent notices warning that appliances must not be used without the ventilation system in operation.

Any user of gas who has any concerns about the safety of their installation should not wait until the next routine maintenance visit or breakdown, but seek urgent advice from a competent gas engineer and, where necessary, a ventilation expert.

When carrying out minor upgrades or repairs and at routine maintenance visits, gas engineers (who are duty bound to take action if they discover health and safety defects) will need to assess the overall condition of the installation against current industry guidance.

When Gas Safe engineers carry out inspection and maintenance of gas-fired catering equipment they will apply the Gas Industry Unsafe Situations Procedure (GIUSP) as a means of assessing safety and remedial

actions. If a gas engineer does this, they will also provide information about the appropriate standard and the practicability of upgrading the installation.

If a gas engineer believes that there are factors that may increase the risk described above, an 'At Risk' ('AR') or 'Immediately Dangerous' ('ID') classification may be applied as appropriate based on the nature and level of risk present. In either case the advice will be not to use the appliance/installation. If the appliance/installation is classified as AR, the engineer will ask permission to turn it off, or, in the case of an ID classification, to disconnect it. These classifications are unlikely if proper regular maintenance has been done.

Flame supervision devices

Flame supervision devices are designed to stop gas entering the burner of a gas appliance, if the flame is extinguished.

New equipment will have flame supervision devices. All burners on second-hand equipment being installed, including open burners, should be fitted with flame supervision devices.

All ovens not originally fitted with a flame supervision device should have been upgraded. If this is not possible, replace them.

There may be some exceptional cases where it is not possible to retrofit an oven with a flame supervision device **and** it is not reasonably practicable to immediately replace the equipment. In such rare cases, you should implement other robust control measures, including for example, providing suitable information, instruction and training, appropriate supervision and safe systems of work with a view to replacing the equipment as soon as it is reasonably practicable to do so.

LPG-fuelled, portable blowtorches

These are often used for caramelising dishes such as crème brûlée and have been involved in several fires and explosions in kitchens when accidentally placed on hot surfaces. Do not place such torches on or near hot surfaces or near open flames.

Homemade blowtorches

Some restaurants have used a length of flattened copper pipe connected to a flexible hose and mains gas or gas pokers, designed for use with solid fuel domestic fireplaces, instead of a handheld torch.

Only use blowtorches of an approved proprietary design.

Mobile equipment

There should be a safe method of cleaning mobile equipment. Many more appliances are now fitted with castors to allow movement for cleaning. This has often required using flexible gas connectors, which can become damaged when equipment is moved. Cleaning without moving the appliance may be possible with careful installation, so flexible gas connectors are not required. If appliances containing hot liquids have to be moved, they must be fitted with lockable castors that are regularly maintained. Moving appliances containing hot liquids creates a risk of burns, so allow liquids time to cool adequately before starting cleaning. Catering Information Sheet 17, *Safety during emptying and cleaning of fryers*⁸ provides useful information that will help you avoid risks associated with hot liquids.

Mobile catering

Mobile catering units such as fish and chip vans or travelling barbecues, usually use LPG supplied in cylinders.

The Nationwide Caterers association (NCASS) has produced guidance⁹ on the installation of LPG and LPG-fired equipment in catering trailers, converted vehicles, portable kitchens, carts, trolleys and bikes.

Carbon monoxide/dioxide alarms

Some kitchens have **carbon monoxide** (CO) alarms installed. These should be suitable for use in the generally harsher conditions found in commercial working environments. Domestic CO alarms are not normally suitable and should not be used.

Carbon dioxide alarms are also available for use in commercial installations. Consider their use in the site-specific risk assessment of the appliance and installation, ensuring an appropriate proactive alarm maintenance regime is introduced in line with the manufacturers' instructions.

Where installed, carbon monoxide/dioxide alarms should give an audible alarm and be interlocked with an automatic gas shut-off system. This should be a failsafe arrangement and require manual intervention to restore the gas supply.

These alarms are only warning devices. The primary safeguard remains providing an adequate and effective ventilation system to ensure complete combustion of gas and removal of combustion products, along with regular maintenance and servicing of all equipment by competent people.

References

- 1 *Ventilation of kitchens in catering establishments* Catering Information Sheet CAIS10(rev2) HSE Books 2012 www.hse.gov.uk/pubns/cais10.htm
- 2 *Specification for kitchen ventilation systems* DW172 Building & Engineering Services Association 2005 www.b-espublications.co.uk
- 3 *Safety in the installation and use of gas systems and appliances: Gas Safety (Installation and Use) Regulations 1998. Approved Code of Practice and guidance* L56 (Third edition) HSE Books 2011 ISBN 978 0 7176 6419 1 www.hse.gov.uk/pubns/books/l56.htm
- 4 BS EN 203-1: 2005 + A1: 2008 *Gas heated catering equipment. General safety rules* British Standards Institution
- 5 *The Road Vehicles (Construction and Use) Regulations 1986* SI 1986/1078 The Stationery Office ISBN 978 0 11 067078 2
- 6 *Guide to Good Practice: Internal Cleanliness of Ventilation Systems* TR19 Building & Engineering Services Association www.b-espublications.co.uk
- 7 BS 6173: 2009 *Specification for installation and maintenance of gas-fired catering appliances for use in all types of catering establishments (2nd and 3rd family gases)* British Standards Institution
- 8 *Safety during emptying and cleaning of fryers* Catering Information Sheet CAIS17(rev3) HSE Books 2012 www.hse.gov.uk/pubns/cais17.htm
- 9 *Guidance for the Installation Of LPG and LPG Fired Equipment in Catering Trailers, Converted Vehicles, Portable Kitchens, Carts, Trolleys and Bikes* The Nationwide Caterers Association Ltd (NCASS) 2012 www.ncass.org.uk

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

British Standards can be obtained in PDF or hard copy formats from BSI: <http://shop.bsigroup.com> or by contacting BSI Customer Services for hard copies only Tel: 020 8996 9001 email: cservices@bsigroup.com.

The Stationery Office publications are available from The Stationery Office, PO Box 29, Norwich NR3 1GN Tel: 0870 600 5522 Fax: 0870 600 5533 email: customer.services@tso.co.uk Website: www.tsoshop.co.uk/ (They are also available from bookshops.) Statutory Instruments can be viewed free of charge at www.legislation.gov.uk/.

Other useful websites are www.hse.gov.uk/catering and www.hse.gov.uk/gas.

You can contact the Gas Safety Advice Line on 0800 300 363.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at: www.hse.gov.uk/pubns/cais23.htm.

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