

GAS SAFETY Bulletin



Message from the Editor

This issue of the Gas Safety Bulletin features tips on the selection and use of portable cassette cookers, points to note when installing service pipes and information about the regulation of liquefied petroleum gas (LPG) cylinders. Readers will also find useful legal knowledge about gas safety, as well as gas incident and prosecution statistics by type of cases in the first half of 2015 for reference.



Tips on the Selection and Use of Portable Cassette Cookers



Portable cassette cookers are commonly used in restaurants. The responsible persons of restaurants should have knowledge of gas safety and abide by the provisions of the relevant laws when choosing and buying portable cassette cookers.

Choosing Suitable Portable Cassette Cookers



According to the Gas Safety Ordinance, starting from 1 January 2003, all models of portable cassette cookers to be manufactured in Hong Kong or supplied or sold for use in Hong Kong shall have the written approval of the Gas Authority (i.e. the Director of Electrical and Mechanical Services). Approved portable cassette cookers shall bear a GU mark for identification. For safety sake, members of the public and restaurants should only purchase portable cassette cookers with the GU mark.

Points to Note on the Use and Storage of LPG Cylinders (including Disposable LPG Cylinders)

All disposable LPG cylinders for use in

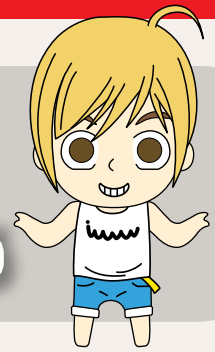
Hong Kong shall be type approved by the Gas Authority. When using a disposable LPG cylinder, one should follow strictly the safety instructions printed on it and in the user manual of the gas appliance. In no event shall the LPG cylinders be situated in the one place (including any part of any premises) where the aggregated nominal water capacity of the cylinders (including used cylinders) is more than 130 litres (approximately 50 kg) unless prior approval from the Gas Authority is obtained.

For commercial premises, e.g. general restaurants, operators should ensure that an effective stock rotation system of disposable LPG cylinders (cartridges) is in place to avoid prolonged storage. For the sake of fire safety, it is recommended not to store more than 50 cartridges. ⚠

Safe Use of Portable Cassette Cookers

Dos :	Don'ts :
<ul style="list-style-type: none"> ✓ Use the cooker in a well-ventilated area away from flammable substances 	<ul style="list-style-type: none"> ✗ Do not leave the cooker unattended while switched on
<ul style="list-style-type: none"> ✓ Make sure the cooking utensil is not too large to cover the LPG cylinder box of the cooker 	<ul style="list-style-type: none"> ✗ Do not ignite the cooker by external devices (such as lighters, torches or burning paper)
<ul style="list-style-type: none"> ✓ Stop using the cooker and arrange repair at once if any damage is suspected or found 	<ul style="list-style-type: none"> ✗ Do not use two portable cassette cookers placed next to each other
<ul style="list-style-type: none"> ✓ Arrange regular checking and servicing of the cooker by a registered gas contractor at least once every 12 months 	<ul style="list-style-type: none"> ✗ Do not interfere with the operation of the over-pressure safety device of the cooker

Points to Note When Installing Service Pipes



A service pipe means a pipe used to supply gas from a gas main to not more than one building, and includes any gas meter control valve and any service valve, to which the pipe is connected. In general, a gas pipe shall be constructed of sound materials, and of such size and strength as to safely convey the gas at the conveying pressure. The external surfaces of a gas pipe shall be constructed of material which is inherently resistant to corrosion or are protected against corrosion. According to regulation 17(6) of the Gas Safety (Gas Supply) Regulations, no person shall install a service pipe:

- of internal diameter of 50 millimetres or more in any premises;
- in any premises where the nature of the premises or any activity carried on therein is such that there is a special risk of personal injury, fire, explosion or other danger arising from the supply of gas to such premises; or
- in any premises where such pipe supplies gas to more than one primary meter,

unless he also fixes a valve in the pipe in a readily accessible position outside of, and should be as near as practicable to, the boundaries of the premises concerned and in such a manner that, so far as is reasonably practicable, there is not a risk of wilful or accidental misuse of the valve.

Besides, according to regulations 17(8) and (9) of the

Gas Safety (Gas Supply) Regulations, no person shall install a gas pipe in a service duct in any premises unless any other services contained in the duct are compatible with that pipe in that safety of the occupants of the premises is not thereby prejudiced, and unless such duct is ventilated such that any escape of gas from any part of such pipe enclosed by such duct is able to disperse in such a manner that safety of the occupants of the premises is not thereby prejudiced.

Please note any work on or in relation to a gas pipe shall be carried out by a competent person, including a person who is competent, by virtue of his training and substantial practical experience, to carry out that work. According to regulation 3(1) of the Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations, no person other than a registered gas installer who is a registered gas contractor or the employee of a registered gas contractor shall personally carry out any gas installation work. The competent person shall install a gas pipe in a sound and workmanlike manner, and after such installation and before the pipe is commissioned, carry out a pressure test on such pipe to ensure that it is structurally sound and gastight.

For enquiries about installation requirements for gas pipes or safety of gas installations, please call the 1823 hotline service or visit EMSD's website <http://www.emsd.gov.hk>.

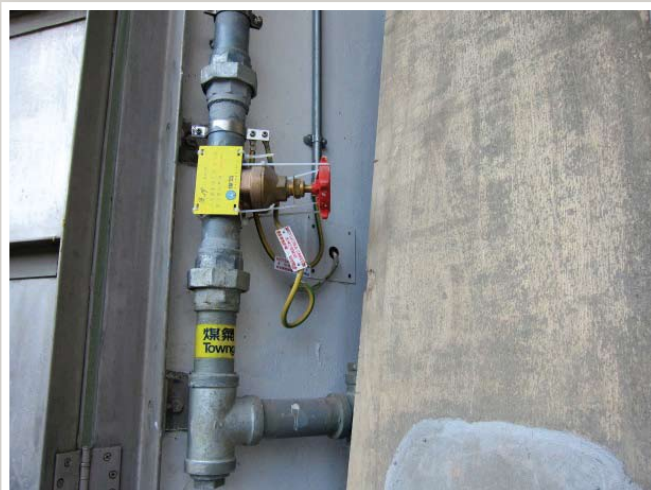


Figure 1: A service valve

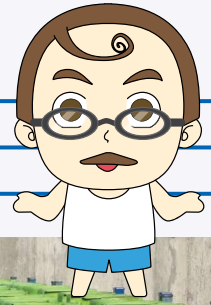


Figure 2: A town gas pipe duct



Figure 3: Checking a service pipe





Regulation of LPG Cylinders

There are at present around 430 000 customers in the domestic, commercial and industrial sectors in Hong Kong using LPG as a fuel, of which about 210 000 customers use LPG cylinders. EMSD is responsible for the enforcement of the Gas Safety Ordinance (Chapter 51 of the Laws of Hong Kong) and LPG cylinders are regulated by this Ordinance. As such, we have devised a code of practice on LPG cylinders for the trade to follow.

Cylinder Design

In Hong Kong, LPG cylinders are mostly owned by registered gas supply companies. Pursuant to the Gas Safety (Gas Supply) Regulations, any container used to contain LPG shall be approved in writing by the Gas Authority (i.e. the Director of Electrical and Mechanical Services) prior to such use. The design of LPG cylinder shall comply with international standards and the cylinder owner shall submit the design of the cylinder to the Gas Authority for type approval. In the application for type approval of a cylinder, fully dimensioned drawings of the cylinder including material of construction, design calculation of wall thickness, cylinder design standard and specification, as well as information on the selected cylinder valve(s) shall be provided. The records of type approval application shall be kept by the cylinder owner for the entire service life of the cylinder until the cylinder of this type is no longer used by the cylinder owner.


Testing and Examination of LPG Cylinders

The owner of new cylinders shall take samples of at least 3% of each batch of each size of new cylinders for



hydraulic tests. The hydraulic tests shall be supervised by relevant Competent Person who shall sign the test certificates.

Pursuant to the Gas Safety (Gas Supply) Regulations, the owner of a cylinder (other than a disposable cylinder) shall not use the cylinder to contain LPG unless the cylinder has been tested and examined not less than once in the 5-year period immediately preceding such use to ascertain whether the cylinder is safe to be so used. All revalidation test records of cylinder shall be kept for 10 years by the cylinder owner and the respective registered gas supply company filling the cylinder.

Please refer to the Code of Practice for Hong Kong LPG Industry, Module 9 – LPG Cylinders published by the Gas Standards Office for detailed requirements for the design, type approval, testing and examination of LPG cylinders. 




Application for Cylinder Wagon Permit

Pursuant to Regulation 25(2) of the Gas Safety (Gas Supply) Regulations, no person shall use a motor vehicle without a valid cylinder wagon permit to carry any cylinder which has a water capacity of not less than 130 litres. Besides, the valid cylinder wagon permit is required to be displayed on the left-hand side of the vehicle's windscreen, and the vehicle owner shall comply with the Gas Safety Ordinance and the permit conditions.

The cylinder wagon, for which the new application for the permit is made, must be constructed in accordance with the specifications stipulated in Part 2 of Schedule 2 of the Gas Safety (Gas Supply) Regulations, as well as

the requirements set out in the Code of Practice for the Design and Construction of LPG Cylinder Wagon.

Any applicant for a cylinder wagon permit for his vehicle is required to complete and submit the relevant application form and reply slip together with copies of all necessary documents to EMSD. Upon verification of the documents, a vehicle examination will be arranged. Vehicles passing the examination will be issued with a cylinder wagon permit valid for 1 year. The fee is \$2,420 for a new application and \$600 for a renewal application.

For application details, please visit EMSD's website <http://www.emsd.gov.hk> 


LPG Vehicle Fuel Tanks

According to the Gas Safety Ordinance (Chapter 51 of the Laws of Hong Kong), a "cylinder" means a receptacle which has a water capacity of not more than 150 litres and used, or to be used, to contain LPG. The fuel tank of LPG vehicles ("fuel tank") is considered as a "cylinder" and is therefore regulated by the Gas Safety Ordinance.

According to the Gas Safety (Gas Supply) Regulations (Chapter 51B of the Laws of Hong Kong), the owner of a fuel tank shall not use the fuel tank to contain LPG unless the fuel tank has been approved in writing, or is of a type which has been approved in writing, by the Gas Authority ("the Authority") for such use.

Fuel tanks shall be examined and checked regularly. The owner of a fuel tank shall not use the fuel tank to contain LPG unless the fuel tank has been tested and examined not less than once in the 5 years period immediately preceding such use to ascertain whether the fuel tank is safe to be so used. For relevant requirements, please refer to the

Guideline for Revalidation of LPG Fuel Tanks for LPG Vehicles published by the Gas Standards Office.

If a vehicle maintenance workshop needs to store fuel tank(s) of aggregated nominal water capacity more than 130 litres (i.e. storing more than one fuel tank, which is calculated based on the water capacity of the fuel tank of an existing light bus or taxi), the workshop shall be set up with a "notifiable gas installation" stipulated in the Gas Safety Ordinance. According to the Gas Safety (Gas Supply) Regulations, the construction and use of a "notifiable gas installation" shall be approved by the Authority, and the owner of the installation shall maintain and operate the installation in a safe condition for the prevention of fire, explosion or other danger arising from the installation. For relevant requirements, please refer to the Guideline for LPG Vehicle Fuel System Maintenance Workshop published by the Gas Standards Office. 



Legal Knowledge



Regulation of the Use of LPG as Refrigerants


Hydrofluorocarbon (HFC) refrigerants are now commonly used in Hong Kong. They are non-flammable and also comply with the relevant safety and environmental statutory requirements. In recent years, however, flammable refrigerants have been used in some air-conditioning and refrigeration systems in some parts of the world. While there is no market trend for using flammable refrigerants in commercial equipment in Hong Kong, EMSD considers it necessary to remind the trade of the regulatory and safety considerations regarding flammable refrigerants and advise them not to adopt flammable refrigerants for the avoidance of accidents.

Most of the refrigerants are, by their compositions, regulated by the Dangerous Goods Ordinance. As the compositions of some flammable refrigerants fall within the definition of LPG under the Gas Safety Ordinance, the importation, manufacture, storage, transport, supply and use of these LPG refrigerants shall comply with the requirements of

the Gas Safety Ordinance.

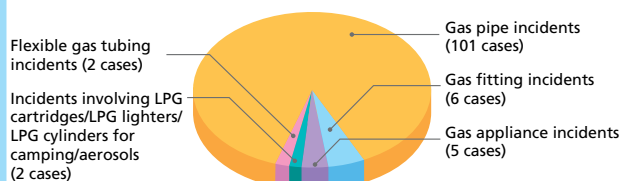
According to the Interpretation of the Gas Safety Ordinance, LPG means any gas which is a mixture of:

- (a) hydrocarbons primarily consisting of butanes, butylenes, propane or propylene; or
- (b) all or any of the hydrocarbons referred to in paragraph (a).

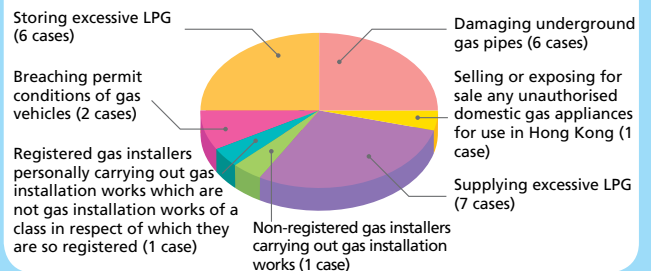
When choosing the air conditioning and refrigeration equipment and its refrigerants, put safety first. Given Hong Kong's crowded and densely populated environment with congested high-rise buildings, it is not suitable to adopt equipment using flammable refrigerants from the perspective of safety and risk management. For existing plants, we should adopt the prescribed refrigerants according to the manuals provided by manufacturers instead of switching to flammable refrigerants. At present, no flammable refrigerants are used in government facilities. Members of the trade should convey the above message to owners and users of the plants. 

Gas Incident and Prosecution Statistics

Gas Incidents by Type in 2015
(January to June)



Prosecutions by Type for LPG-related Cases in 2015 (January to June)



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