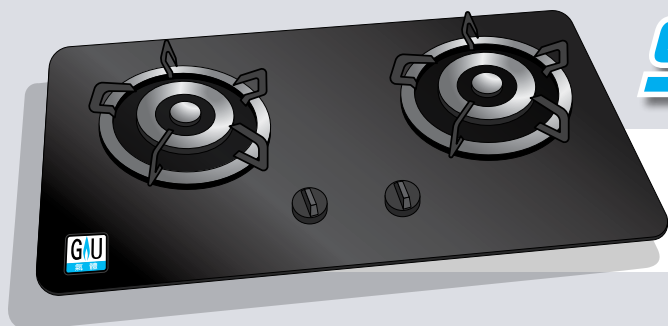


GAS SAFETY Bulletin



Message from the Editor

Greetings to all. This issue of Gas Safety Bulletin features the safe connection of built-in gas hobs, safety regulation of carrying LPG in bulk, how to identify household electric refrigerators containing LPG as refrigerant and safety tips, regulations to be noted by owners of LPG storage installations, and advice about not installing or modifying gas installations on your own. Readers can also find relevant legal knowledge about gas safety, as well as gas-related incident and prosecution statistics by type in January to June 2019 for reference. Besides, mobile applications were launched by the Electrical and Mechanical Services Department (EMSD) on 20 December this year, which enable members of the public to access electronic services with ease and obtain latest updates from the EMSD anytime, anywhere with functions on their smart phones, thereby enhancing communication.



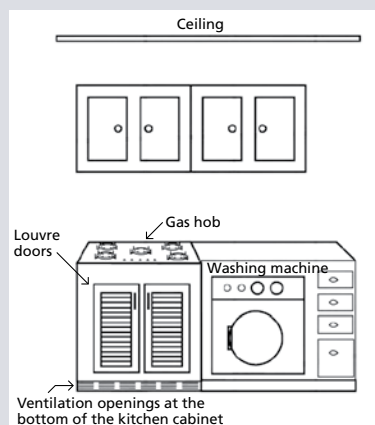
Safe Connection

of Built-in Gas Hobs

It is a pleasure to prepare food for friends and relatives at homeduring holidays. Not only can we enjoy the fun of cooking, but also the happiness of sharing good food with those around us.

Gas hobs are very popular among members of the public in Hong Kong and are essential cooking appliances for many families. The proper installation, maintenance and repair of gas hobs are particularly important to the safety of users. Recently, there were several gas incidents involving built-in hobs installed in residential units. The investigation found that such incidents were mainly related to the connection problems with built-in LPG hobs. Registered gas contractors (RGCs) should pay special attention to this issue.

Most of these incidents occur because the connections between the built-in hobs and the flexible tubing are not gas tight, resulting in minor leakage. As the leaked LPG accumulates in the kitchen cabinet under the gas hob without getting noticed by the users, its concentration would continue to build up until it has reached a dangerous level. Once it is in contact with a fire or heat source, a fire or explosion may occur, possibly causing injury to the users.



▲ It is advised to include ventilation openings in the kitchen cabinet

In order to avoid similar accidents, registered gas installers (RGIs) must ensure that the said connections are properly installed and tested during installation of the appliances. For instance, ensuring the male and female connectors are compatible with each other; performing the installation according to the manufacturer's manual, as well as checking whether the model of the flexible tubing is approved by the Gas Authority and if it is expired, etc. Due to the



▲ Leakage at the connection of the flexible tubing is identified during investigation of an incident

various site constraints, some RGIs may choose to connect the flexible tubing with the built-in hob prior to placing it into position on the kitchen cabinet. As the connected flexible tubing may loosen during transportation of the appliances, RGIs must perform a leak test before commissioning the built-in hob into use so as to reduce the risk of gas incidents. RGIs should also ensure that the related gas works are carried out by qualified RGIs.

Moreover, RGCs should advise users to provide an opening in the appropriate position of the kitchen cabinet or use louvre doors as far as reasonably practicable to reduce the hazard arising from the accumulation of leaked LPG in the cabinet in case leakage occurs. RGIs should also always remind users that they should inform their gas suppliers to arrange for inspection as soon as possible if they suspect there is a smell of LPG or the LPG is used up unusually fast.

Besides, registered gas supply companies should arrange for qualified RGIs to proactively conduct regular safety inspection for household users every 18 months, and be more vigilant about the gas tightness of the connections of flexible tubing. A gas appliance should be repaired immediately if it is found to operate abnormally. A dangerous gas installation notice should be issued when necessary, with the condition of the appliance explained to the user to prevent the occurrence of gas incidents. 🔥

Safety Regulation of Carrying LPG in Bulk



▲ LPG road tanker

The LPG used in Hong Kong is mainly imported by registered gas supply companies via LPG carriers. The imported LPG will be stored in the five LPG terminals in Tsing Yi first, and then transported to customers or LPG filling stations in different areas by LPG road tankers or cylinder wagons. The Electrical and Mechanical Services Department (EMSD) imposes strict safety regulation on the carrying of LPG in bulk in road tankers.

Relevant Legislation of Carrying LPG in Bulk

Under the Gas Safety (Gas Supply) Regulations (Cap. 51B), no person shall use a motor vehicle to carry on a road LPG in bulk unless the vehicle is a road tanker and there is a valid permit issued in respect of the tanker. LPG road tankers shall be operated by trained persons with practical experience, whereas owners of road tankers shall also ensure that no fewer than two competent persons work on the road tankers. In addition, road tanker owners are required to obtain written approval from the registered gas supply company before they can transport LPG for the company.

Safety Regulation of LPG Road Tankers

The EMSD is responsible for approving the gas safety design of LPG road tankers. In Hong Kong, these road tankers can carry up to nine tonnes of LPG. The tanks shall be designed, constructed, heat-treated, inspected and tested to internationally recognised standards. Owners of such vehicles shall submit to the EMSD applications for renewal of road tanker permits and engage competent persons to test and examine the LPG systems, control and safety devices of the vehicles every year to ensure the safe operation of the tankers before they are issued with valid permits to carry on the road LPG in bulk. Besides, owners of road tankers shall also engage competent persons to carry out revalidation of the LPG systems of the vehicles once every five years, and submit relevant

documents to prove that the fuel tanks and other gas safety devices comply with the requirements and continue to operate safely.

Safe Transportation Route and Parking Location

To reduce the potential risk of transporting LPG, gas supply companies have developed safe routes of transporting LPG for customers in various districts to prevent LPG road tankers from running on high-risk roads. Road tankers should also be kept distant from roads with heavier pedestrian flows, and should be driven to suitable parking locations (including designated districts approved for storing LPG in bulk) as soon as possible after the discharge of LPG. Tankers on the roads must be attended to at all times unless LPG has been completely discharged from the vehicles.

Contingency Plan for Emergency

Registered gas supply companies in Hong Kong have developed comprehensive contingency plans for emergencies for road tankers under their administration so that incidents can be handled effectively, quickly and safely. To enhance employees' understanding of the contingency plans and strengthen their abilities to respond, gas supply companies will provide appropriate training and conduct road tanker emergency drills regularly. The EMSD has also maintained close contact with the trade, requesting trade members to review and optimise the contingency plans for emergencies on a regular basis. ▲



▲ Valid permit

How to Identify Household Electric Refrigerators Containing LPG as Refrigerant and Safety Tips



At present, some household electric refrigerators contain isobutane (R600a) as refrigerant. Apart from the statutory requirements of the Electrical Products (Safety) Regulation (Cap. 406G), they are also subject to the regulation of Gas Safety Ordinance (Cap. 51). When purchasing household electric refrigerators, members of the public may pay attention to the following two pieces of information affixed to the refrigerators to identify the type of refrigerant:

- (1) the name and chemical symbol of the refrigerant are indicated on the nameplate of the electric refrigerator; and
- (2) the compressor is affixed with the label of "flammable materials" (see photo on the right).



"Flammable materials" label

Safety Tips

General Use

If flammable LPG is used as refrigerant, do not allow any sharp objects to come into contact with the refrigeration system. In case the refrigerant circuit is damaged, do not use any electric appliances or fire equipment nearby; open the windows to allow good ventilation and contact the maintenance agent immediately for follow-up actions.

Storage

The aggregate water capacity of LPG from all refrigerators inside the storage room shall not exceed 130 litres. Otherwise,

prior approval must be sought from the Gas Authority for the construction and use of a notifiable gas installation.

Maintenance Workshops

To promote the safety and health of employees of maintenance workshops, employers shall ensure that there is a well-ventilated access route and a safe ventilation system. The inlet apertures of the spot extraction system and LPG detectors shall be installed at a position of no more than 150 mm above the floor level. It is recommended to install an audio alarm system too so that alerts will be given in the event of failure of the spot extraction system. An appropriate number of dry powder fire extinguishers shall also be provided in the workshop.

Scrapping

When a household electric refrigerator containing LPG as refrigerant is to be scrapped, all LPG in the refrigerant circuit shall be removed before disposal of the refrigerator.

Detailed safety tips can be downloaded at the following website or by scanning the QR code below:

Guidance Note on Household Electric Refrigerators Containing LPG as Refrigerant

[https://www.emsd.gov.hk/filemanager/en/content_287/GN%20for%20Household%20Refrigerator%20using%20LPG%20as%20refrigerant_\(Eng\)v3_clean.pdf](https://www.emsd.gov.hk/filemanager/en/content_287/GN%20for%20Household%20Refrigerator%20using%20LPG%20as%20refrigerant_(Eng)v3_clean.pdf)





Regulations to be Noted by Owners of LPG Storage Installations

LPG storage installations are notifiable gas installations (NGIs) and are regulated under the Gas Safety Ordinance (Cap. 51). It is the responsibility of owners of NGIs to ensure that their installations comply with the requirements of relevant regulations.

Regulation 6B of the Gas Safety (Gas Supply) Regulations stipulates that the owner of an NGI shall maintain and operate the installation in a safe condition for the prevention of fire, explosion or other danger arising from the installation.


Under regulation 6C of the Gas Safety (Gas Supply) Regulations, the owner of an NGI shall engage a competent person to inspect the installation at least once a year to ensure that the installation is maintained and operated in accordance with regulation 6B of the Regulations. The owner shall submit a copy of the completed inspection report (Form 109) to the Gas Authority (i.e. the Gas Standards Office of the EMSD) by post, fax or e-mail within four weeks upon completion of the inspection. Late inspection of the installation or failure to submit a copy of the inspection report on time is an offence, and the owner of the installation may be prosecuted accordingly.

To fulfill the above responsibilities, the owner is required to:

- arrange for a Competent Person (Class 2) to conduct statutory inspection for the installation at least once a year;
- rectify any irregularities or near misses found in the installation and its surrounding as soon as possible;
- require gas contractors to arrange for trained and competent personnel to carry out inspection or repair works for the installation; and
- keep all records of the construction and use approvals granted by the Gas Authority in respect of the installation and all records of the tests and examinations of the installation conducted by the owner until the installation is no longer used to store LPG.

The owner of an NGI who contravenes relevant gas safety regulations commits an offence and is liable on conviction to a fine and imprisonment:

- Any person who contravenes regulation 6B of the Regulations is liable to a fine of \$25,000 and to imprisonment for six months and, in the case of a continuing offence, to a daily penalty of \$2,000;
- The owner of an NGI who contravenes regulation 6C of the Regulations is liable to a fine of \$2,001 to \$5,000.

In the past five years, one owner of an NGI was penalised for contravening regulation 6C of the Regulations. 


Do Not Install or Modify Gas Installations on Your Own

Under regulation 3(1) of the Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations, no person other than an RGI who is an RGC or his employee shall personally carry out any gas installation work, except, as provided in regulation 3(2), if the person is an RGI and the gas installation work is of a class in respect of which he is so registered and carried out in domestic premises occupied by him.

In addition, under regulation 12(2) of the above Regulations, no person shall employ a person other than an RGC to carry out any gas installation work. However, according to regulation 12(3), regulation 12(2) shall not apply to the employment by an RGC of persons (e.g. apprentices trained under the supervision of RGIs) to carry out gas installation work for the purpose of carrying on his relevant business.

Therefore, the installation or modification of domestic gas pipes or installations must be carried out by an RGC unless the above conditions of exemption are met. In the

past, there were occasional incidents of damage to pipes or installations as a result of improper installation when users modified gas pipes or replaced gas installations on their own. Even no immediate problems were found, there were still potential safety risks with the relevant gas installations as the work was not carried out by competent persons. In the end, users had to engage an RGC to follow up, and they had to bear the criminal liability for carrying out gas installation work on their own too. Thus, users should not try to defy the law by installing or modifying gas installations on their own.

Any person who contravenes regulation 3(1) of the Regulations is liable on conviction to a fine of \$25,000 and to imprisonment for six months and, in the case of a continuing offence, to a daily penalty of \$2,000. Any person who contravenes regulation 12(2) is liable on conviction to a fine of \$10,000. 



Legal Knowledge



Proper Disposal of Unwanted LPG Vehicle Fuel Tanks

According to the Guideline for Disposal of LPG Vehicle Fuel Tanks, LPG vehicle maintenance workshops, vehicle scrapping companies or vehicle dealers shall ensure that the LPG fuel tanks are properly disposed of when handling unwanted LPG vehicles so as to ensure gas safety.

- Upon receiving unwanted LPG vehicles from owners, the vehicle maintenance workshop shall complete Part A of the Certificate of Scrapping LPG Fuel Tank and submit to the EMSD a copy of the Certificate with Part A duly completed. The vehicle maintenance workshop shall also hire Competent Persons (Class 6) to remove the LPG fuel tanks from the LPG vehicles and complete Part B of the Certificate of Scrapping LPG Fuel Tank.
- After the LPG fuel tanks are removed, the vehicle maintenance workshop shall send them to LPG fuel tank workshops for purging and demolition.



The Guideline can be downloaded at the following website or by scanning the QR code below:

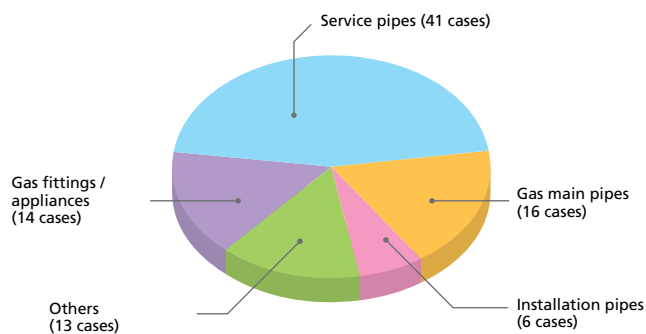
Guideline for Disposal of LPG Vehicle Fuel Tanks

https://www.emsd.gov.hk/filemanager/tc/content_394/Guideline_for_Disposal_of_LPG_Vehicle_Fuel_Tanks.pdf

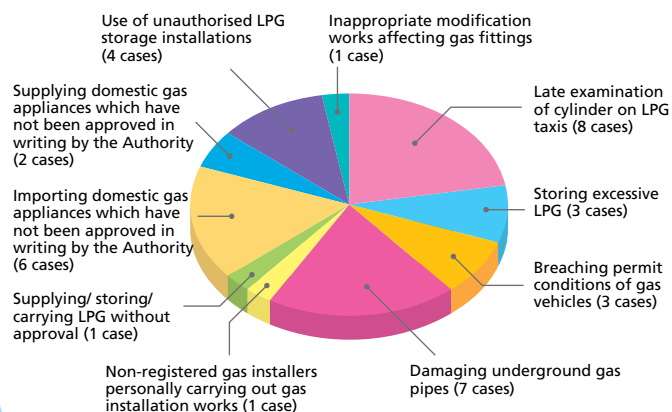


Gas-related Incident and Prosecution Statistics by Type

Gas-related Incidents by Type in 2019 (January to June)



Prosecutions by Type for Gas-related Cases in 2019 (January to June)



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