

GAS SAFETY Bulletin

ISSUE 35

March 2023

Safe Use of Domestic Gas Water Heaters

Official Launch of Voluntary Continuing Professional Development Scheme for Registered Gas Installers

Specifications of Liquefied Petroleum Gas and Monitoring of its Quality

STEM Workshop on LPG Taxis

Make sure the bathroom is well-ventilated when using a domestic gas water heater!



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Message from the Editor

Hello, everyone! In this issue of the Gas Safety Bulletin, we will talk about the latest developments in the gas industry. In order to raise the awareness of proper use of gas water heater, we provide the tips for everyone to pay attention to. Moreover, the Voluntary Continuing Professional Development Scheme for Registered Gas Installers has been launched to promote the culture of continuing education among workers in the gas industry since 1 January 2023.

In addition, in order to enhance the professional image of vehicle maintenance and the knowledge of LPG taxis, we will introduce the specifications of LPG and its quality monitoring and the STEM Workshop on LPG Taxis to E&M young ambassadors.



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Safe Use of Domestic Gas Water Heaters

According to the Gas Safety Ordinance, from 1 January 2003 onwards, all models of domestic gas appliances, including water heaters, to be imported to, sold or supplied in Hong Kong for local use shall have the written approval of the Gas Authority (i.e. the Director of Electrical and Mechanical Services). Approved domestic gas appliances shall bear a GU mark for identification by the trade and the public. For newly purchased domestic gas water heaters or those require removal and installation due to home renovation, removal, installation and testing of the heaters must be carried out by a registered gas installer employed by a registered gas contractor before use. Installation or modification of a gas water heater must not be carried out by the owner or a non-registered gas installer, otherwise, it may pose a safety concern. Such act is also against the law and offenders may be prosecuted.



When using a domestic gas water heater, the following tips should be paid attention to:

- 1 Make sure the bathroom is well-ventilated; if feeling unwell in the shower, leave the bathroom immediately;
- 2 Arrange for a registered gas supply company to conduct safety inspection for a gas water heater and its installation once every 18 months;
- 3 Read the user manual provided by the manufacturer of the gas water heater and follow the instructions therein;
- 4 Stop using the gas water heater immediately should a failure occur or an abnormality be detected, and contact the appliance dealer for follow-up and repair;
- 5 Turn off the gas main switch promptly under safe condition if a gas leak is detected, and contact the appliance dealer for sending a registered gas installer to the scene to deal with the gas leak. Do not use the gas water heater again until it has been repaired.

For details of the domestic gas water heaters, please visit the following website :

https://www.emsd.gov.hk/tc/gas_safety/gas_safety_tips_to_users/safe_use_proper_use_and_maintenance/proper_make_purchase_use_domestic_gas_water_heater/index.html

Official Launch of Voluntary Continuing Professional Development Scheme for Registered Gas Installers



To enhance the professional practice skills of the trade and the skill levels of registered gas installers (RGIs), the Electrical and Mechanical Services Department (EMSD) has set up a continuing professional development (CPD) mechanism for RGIs and planned for the implementation of the Voluntary Continuing Professional Development Scheme for Registered Gas Installers (the Scheme) after consultation with the trade. With the support of members of the Gas Safety Advisory Committee at the committee meeting held in June 2022, the Scheme was officially launched on 1 January 2023 and is operated on a triennial cycle. The EMSD encourages RGIs to complete at least one course in Module 1 and one in Module 2 in each cycle. RGIs can fulfill the requirements of the Scheme by enrolling in training courses organised by the EMSD, or those organised by registered gas supply companies, registered gas contractors, trade unions or the Vocational Training Council and approved by the EMSD.

Details of the Two Modules under the Voluntary Continuing Professional Development Scheme for Registered Gas Installers:

Module	Topic	Content
Module 1	Legislative and Safety Requirements	Legislative requirements under the Gas Safety Ordinance and safety requirements for carrying out gas installation work
Module 2	Technical Knowledge	Technical knowledge in relation to the design, installation, repair, maintenance, testing and commissioning of gas installations

New functions related to the Scheme have been incorporated into the EMSD's "E&M Trade App", through which RGIs may obtain the latest updates on the Scheme, enrol in training courses organised by the EMSD and view the records of the CPD training completed.



E&M Trade App



For details of the Scheme, please visit the following website:

https://www.emsd.gov.hk/en/gas_safety/voluntary_cpd_scheme_for_rgi/index.html

Specifications of Liquefied Petroleum Gas and Monitoring of its Quality

The liquefied petroleum gas (LPG) used in Hong Kong is purchased by LPG supply companies from LPG terminals outside Hong Kong, and the sources of supply include Shenzhen, Zhuhai, Dongguan, etc. The imported LPG is stored in LPG compounds for further distribution to LPG filling stations in various districts. Throughout the entire transportation process, LPG is pressurised and kept in a sealed environment at room temperature, and thus the possibility of contamination by external sources is minimal.

According to the Gas Safety Ordinance (Cap. 51), LPG must meet the requirements of the Gas Safety (Gas Quality) Regulations, i.e., the proportion of sulphur shall not exceed 0.02% by mass and the gas shall possess a distinctive smell for identification. In addition to the above requirements, the composition of LPG which is used as vehicle fuel must comply with the auto-LPG specifications of Hong Kong in order to meet the operational requirements and emission caps of LPG vehicles.



Monitoring LPG Quality

The EMSD monitors LPG quality in various aspects, which include vetting independent third-party test reports submitted by LPG supply companies and carrying out sampling checks on LPG quality, so as to ensure that the quality of LPG meets the requirements.

Vetting Independent Third-party Test Reports



To ensure that the quality of LPG complies with the statutory requirements, the EMSD has put in place a stringent monitoring mechanism. LPG supply companies are required to engage independent laboratories to collect LPG samples from LPG terminals outside Hong Kong or LPG carriers entering Hong Kong for testing, and submit a certificate of quality issued by a third party to the EMSD after receiving the consignment. The amount of each component of the LPG and the testing standards adopted should be listed on the certificate for review.

LPG Sampling Scheme

To further enhance the monitoring of LPG quality, the EMSD launched in early 2010 the LPG sampling scheme by taking random LPG samples at one to two LPG filling stations every week and two LPG compounds every month for testing. The test results are published on the EMSD website and updated on a weekly basis. For details, please visit the website below:

https://www.emsd.gov.hk/en/gas_safety/lpg_vehicle_scheme/publications/general/results_of_lpg_sample_analysis/index.html



STEM Workshop on LPG Taxis

The Gas Standards Office held an online STEM workshop on 29 October 2022 to share with over 200 E&M Young Ambassadors information on the daily operation as well as repair and maintenance of liquefied petroleum gas (LPG) taxis.

To reduce emissions from local vehicles, the Government announced the introduction of the LPG Vehicle Scheme in the 1999 Policy Address. At present, about three quarters of LPG supply in Hong Kong are used as vehicle fuel for over 22 000 LPG taxis, minibuses and special vehicles. For LPG filling services, there are over the territory a total of 70 LPG filling stations, of which 12 are dedicated LPG filling stations, providing a comprehensive network of LPG filling facilities for LPG vehicles.



On repair and maintenance of LPG vehicles, the EMSD issues identification signage to LPG vehicle fuel system maintenance workshops to enable LPG vehicle owners and drivers, the public and relevant persons to easily identify the vehicle maintenance workshops providing LPG fuel system maintenance services. The identification signage is divided into two types, namely red and blue, to differentiate the capacity of LPG that can be stored. Workshops issued with identification signage should display the signage at a conspicuous location of the workshops.

In addition to applying for identification signage, LPG vehicle fuel system maintenance workshops can apply to become a registered vehicle maintenance workshop under the Voluntary Registration Scheme for Vehicle Maintenance Workshops in order to further improve the service standards, professional image and competitiveness of the vehicle maintenance trade. Registered workshops shall pledge to operate at a quality level not lower than that specified in the Practice Guidelines for Vehicle Maintenance Workshops in respect of the technical, environmental, safety, staff training, service and documentation requirements.



On maintenance staff, only Competent Persons (Class 6) approved by the EMSD can carry out maintenance and repair of the LPG fuel system of LPG vehicles. The EMSD issues all Competent Persons (Class 6) with certificates and identification cards, which are classified into "Gold" and "Silver", to differentiate whether the card holder is qualified to carry out maintenance and repair of system equipped with internal fuel pump.

For vehicle mechanics in possession of qualification and experience in vehicle maintenance, apart from applying to the EMSD for becoming a Competent Person (Class 6), they may apply through the Voluntary Registration Scheme for Vehicle Mechanics for becoming a registered vehicle mechanic so that their qualification and competence will gain recognition, and the professional image of the vehicle maintenance trade will be enhanced.



In this workshop, material packages for making a LPG taxi model, together with a LPG dispenser model, were provided to the E&M Young Ambassadors for them to unleash their creativity and make their own mini LPG taxi in a relaxing and fun atmosphere, so as to boost their interest in learning about gas safety as well as repair and maintenance of LPG vehicles.

Cathodic Protection System



“Cathodic protection” is a way to prevent corrosion of metals.

Under the law, the owner of a liquefied petroleum gas (LPG) tank shall install a cathodic protection system for the tank, and cause such system to be tested not less than once in each six months period and the results of such test to be recorded in writing and retained until the tank ceases to be used to contain LPG.

The cathodic protection systems of LPG tanks in Hong Kong generally employ a sacrificial anode design, under which sacrificial metals (such as zinc, aluminium or magnesium, etc.) with higher oxygen activity are used as anodes to protect the steel structure (cathode) of the LPG tank. The size and quantity of sacrificial anodes shall be designed by experienced corrosion specialists such that the anodes are capable of corrosion protection of the tank. The choice of anodes shall be based on the surface area of the tank and the test results on the conditions (pH scale, resistivity, etc.) of the washed sand. Besides, the system shall be equipped with reference electrodes and terminals for testing, while the end of the test wires shall be installed in a weatherproof test box at ground level. As-built drawings and records of the cathodic protection system shall be prepared after installation and shall include the quantity, type, size and location of anodes, date of installation, type of backfill material and resistivity measurement of electrolyte.



For details, please refer to the Code of Practice for Hong Kong LPG Industry, Module 1 (Issue 2) - LPG Compounds and Cylinder Stores published by the Gas Standards Office. The Code of Practice can be downloaded for free at the EMSD website :

https://www.emsd.gov.hk/en/gas_safety/publications/codes_of_practice/index.html

Safe Use of Portable Cassette Cookers

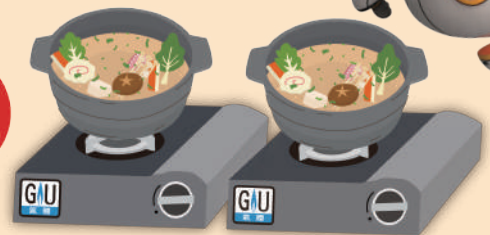
According to the Gas Safety Ordinance, from 1 January 2003 onwards, all models of domestic gas appliances, including portable cassette cookers, to be imported to, manufactured, sold or supplied in Hong Kong for local use shall have the written approval of the Gas Authority (i.e. the Director of Electrical and Mechanical Services). Approved portable cassette cookers shall bear a GU mark for identification. For the sake of safety, members of the public and restaurants should only purchase portable cassette cookers with a GU mark. When using cassette cookers and cartridges, pay attention to the following safety tips:



Use the cooker and cartridge in a well-ventilated area away from flammable materials.



Read the user manual provided by the manufacturer and follow the safety instructions therein before use.



Do not use two or more cookers placed next to each other.



Do not use foreign objects to ignite the cooker.



Do not use oversized cookware.

Gas Safety Matters Requiring Attention When Carrying Out Demolition Works of Buildings



To ensure gas safety, a contractor for demolition works of buildings (the demolition contractor) and the registered gas contractor (RGC) it engaged should adopt the following practices before the commencement of or during the demolition works:

	Practices	Relevant legislation
<p>Before the commencement of the demolition works</p>	<p>The demolition contractor shall obtain layout plans of and other suitable information about the gas pipes within or in the vicinity of the works site from the registered gas supply company (RGSC), and visit the site to ascertain the routings and positions of the existing gas pipes, in order to avoid damage to gas pipes. The demolition contractor shall also arrange for the RGSC to terminate gas supply to the site, including closing the isolation valve at the underground pipe section.</p>	<p>Regulation 23A(1) of the Gas Safety (Gas Supply) Regulations (Cap. 51B)</p>
	<p>The demolition contractor shall engage an RGC and registered gas installers (RGIs) for carrying out gas installation work, including the removal of gas pipes and fittings.</p>	<p>Regulation 3 of the Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations (Cap. 51D)</p>
<p>During the demolition works</p>	<p>Prior to the removal of gas pipes and fittings, the RGC and RGIs shall take appropriate safety measures, including purging of gas pipes, etc., to ensure gas safety.</p>	<p>Regulation 23 of the Gas Safety (Gas Supply) Regulations (Cap. 51B)</p>
	<p>The demolition contractor shall pay attention to the retained gas pipes in the site and take all precautionary and protection measures to avoid damage to gas pipes and fittings during the demolition works.</p>	<p>Regulation 23A(2) of the Gas Safety (Gas Supply) Regulations (Cap. 51B)</p>

Points to Note for Responsible Persons of Gas Installations for Commercial Use



Responsible persons of commercial premises (such as restaurants, club houses, laundries, etc.) should ensure that the installation, use and maintenance of their gas installations are in compliance with the requirements of the Gas Safety Ordinance and relevant codes of practice, to avoid posing danger to any person or property.

When a new gas installation or fittings have to be installed, the responsible person must engage a registered gas contractor to carry out design, installation and testing for the entire gas installation system. Responsible persons should retain information such as design drawings, installation and inspection records, etc., of gas installations for further reference.

During the operation of gas installations, operators must follow the operational guidelines of the gas installation concerned and ensure the proper functioning of the ventilation equipment and exhaust system in the premises to safeguard the safety of persons in the premises and in the vicinity.

In addition, responsible persons should arrange for a registered gas contractor to conduct regular safety inspection of gas installations once every 12 months and carry out repair or replacement of faulty parts according to the contractor's advice to ensure gas safety.



Gas-related Incident and Prosecution Statistics by Type

