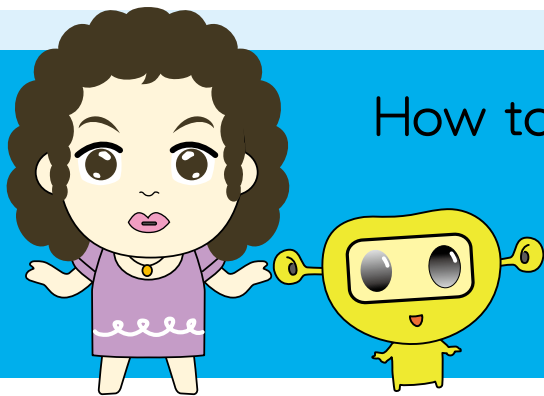


# GAS SAFETY Bulletin



## Message from the Editor

This issue of the Gas Safety Bulletin runs special features on how to select and purchase approved domestic gas appliances bearing the GU mark, monitoring of the quality of liquefied petroleum gas, as well as regular inspection and maintenance of service risers and installation pipes. Readers will also find legal tips on gas safety and an analysis of gas incident and prosecution statistics by type from January to June 2014. We hope the information will be useful for your reference.



## How to Select and Purchase

# Approved Domestic Gas Appliances Bearing GU Mark

The scope of the GU mark covers all domestic gas appliances (i.e., gas appliances which are designed, or intended, to be used primarily in domestic premises, irrespective of whether they are so used), such as cookers, water heaters, gas clothes dryers and portable cassette cookers, etc.

According to regulation 3B of the Gas Safety (Miscellaneous) Regulations (Cap. 51 sub. leg. F), starting from 1 January 2003, all domestic gas appliances which are imported, sold or supplied for use in Hong Kong must be type approved by the Gas Authority (i.e., the Director of Electrical and Mechanical Services). The issuance of type approval is based on the criteria that the model of gas appliance is designed and manufactured in accordance with recognised international/national safety standards to ensure safety and quality. Approved models of gas appliances will bear the GU mark for easy identification.

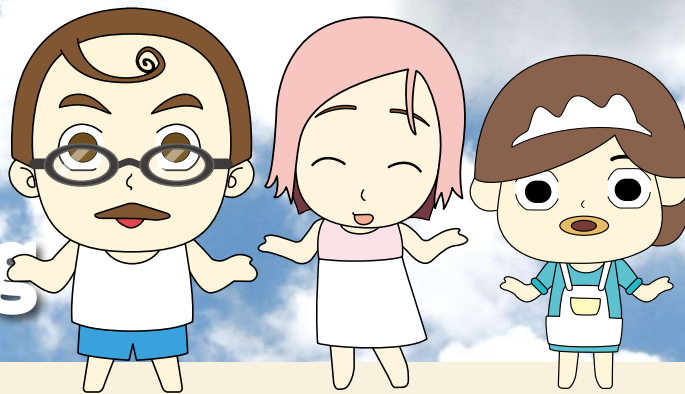
To ensure household safety, members of the public are advised not to purchase domestic gas appliances without the GU mark. Moreover, the user should arrange a registered gas installer employed by a registered gas



contractor to conduct an inspection on the gas appliance at least once every 18 months to ensure that the appliance is kept in good condition.

Members of the public should never bring in gas appliances or import non-approved domestic gas appliances for use in Hong Kong. Any person who fails to comply with mandatory requirements relating to importation, manufactured in Hong Kong, sale or supply of domestic gas appliances for use in Hong Kong commits an offence, and is liable on conviction to a maximum fine at level 6 (\$100,000) and imprisonment for 12 months.

# LPG Quality Monitoring



Hong Kong imports all its LPG from other places. LPG is imported into Hong Kong mainly by sea and stored at the terminals on Tsing Yi Island before being distributed to LPG filling stations, commercial and industrial facilities, and domestic households for consumption.

## LPG Specifications

LPG, whether for use by vehicles or households, should comply with the requirements of the Gas Safety (Gas Quality) Regulations. Auto-LPG should also comply with the auto-LPG specifications of Hong Kong. Relevant requirements are shown in the table below:

### Auto-LPG Specifications

Properties	Unit	Minimum	Maximum
Propane + Propylene	mol%	20	30
Butane + Butylene	mol%	70	80
Copper corrosion	-	-	class 1 <sup>(1)</sup>
Total sulphur	ppm	-	200
Hydrogen sulphide	-	passed <sup>(2)</sup>	
Evaporation residue <sup>(3)</sup>	mg/kg	-	100
1,3-butadiene	mol%	-	0.5
Vapour pressure	kPa	-	1550
Octane number	-	90	-

(1) Tested according to ASTM D1838 or ISO 6251.

(2) Tested according to ASTM D2420 or ISO 8819.

(3) The evaporation residue test according to ASTM D2158 (less than 0.05ml per 100ml and passing the oil stain observation test) is accepted as an equivalent requirement; the maximum value for O-number is set at 25 by the trade.

## Quality Monitoring

EMSD adopts a three-pronged approach in monitoring LPG quality, which includes vetting independent third-party test reports submitted by LPG supply companies, monitoring the operation of LPG supply chain, and carrying out sampling check on LPG quality, so as to ensure the LPG quality meets the requirements.

## Vetting Independent Third-Party Test Reports


LPG supply companies will verify that the LPG in each shipment meets the relevant requirements before unloading the LPG at the terminals on Tsing Yi Island. EMSD will vet the independent third-party test reports submitted by LPG supply companies for each shipment to monitor the quality of the imported LPG.

## LPG Supply Chain Operation Monitoring

LPG is conveyed from LPG carriers to LPG terminals through pipelines, and then distributed to LPG filling stations and central LPG supply systems by LPG road tankers, or alternatively stored in LPG cylinders and delivered by LPG cylinder wagons to industrial, commercial and domestic customers. Throughout the entire transportation process of the supply chain, LPG is pressurised and kept in a sealed environment under atmospheric temperature.

EMSD conducts regular safety inspections of the LPG terminals, LPG road tankers and LPG filling stations.

## LPG Quality Sampling Checks

EMSD carries out random checks at different LPG filling stations and LPG terminals to collect LPG samples for laboratory tests on a regular basis. Updated results of the laboratory tests are published on the EMSD website every week. 



LPG Carrier



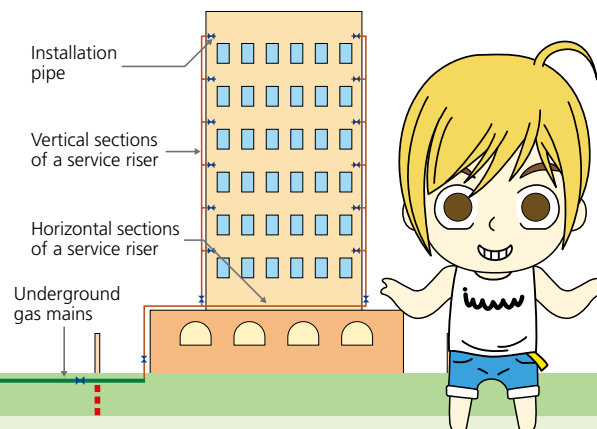
LPG Road Tanker



LPG Cylinder Wagon

# Service Risers and Installation Pipes

## Regular Inspection and Maintenance



The various gas cooking appliances, with which we can cook and heat food as we please, provide great convenience to our daily lives. However, how much do we know about the conditions of the gas pipes that supply gas to the households, who their owners are, and who are responsible for their maintenance?

Generally speaking, gas is transported from underground gas supply mains to the consumer's gas cooking appliances for use through service risers and installation pipes. A service riser refers to the vertical sections (see fig. 1) of a service pipe which supplies gas to a building, including any horizontal sections (see fig. 2) of the service pipe between such vertical sections. An installation pipe refers to a pipe supplying gas to a particular consumer (see fig. 3), including any gas fitting used in connection with the pipe.

The aforementioned gas pipes (service risers or installation pipes) are required to be inspected and maintained by their owners to ensure that they are in good working order. Generally, service risers belong to gas supply companies or owners of premises, while installation pipes mostly belong to owners of premises. The actual ownership of the gas pipes can be identified in the deed of mutual covenant.



Registered gas supply companies or gas distributors will arrange registered gas installers to carry out regular safety inspections for households at least once every 18 months. Consumers should support such an arrangement. If scaffolds are to be erected on a building, the owners' corporation or individuals responsible for the management of the building's public area may make an appointment with either the



Figure 1: Vertical sections of a service riser

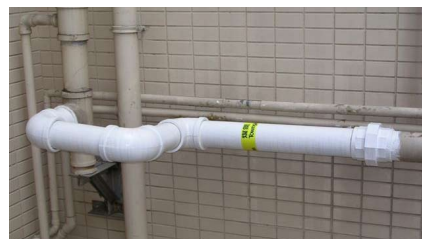


Figure 2: Horizontal sections of a service riser



Figure 3: An installation pipe and gas fittings

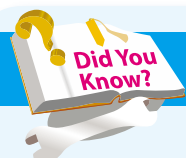
gas supply company or gas distributor concerned, so that efficient use can be made of the scaffolding in inspecting and maintaining the external gas pipes and related gas fittings.

To ensure safety, non-domestic consumers (such as food establishments and institutions) are required to arrange regular safety inspection and maintenance to be carried out by registered gas contractors at least once every 12 months. A registered gas contractor list is available at the EMSD website [http://www.emsd.gov.hk/emsd/e\\_download/pps/gas/overall\\_RGC.pdf](http://www.emsd.gov.hk/emsd/e_download/pps/gas/overall_RGC.pdf) for public reference.

Please be aware that gas leakage may cause fire or even explosion, resulting in loss of life and property. Also, the gas supply company may suspend gas supply to a building for safety reasons. Therefore, gas pipes owners and the parties concerned should ensure that their gas pipes are maintained in good condition for their own safety and that of the public.

For more information about regular inspection and maintenance of service risers and installation pipes, please visit the EMSD website [http://www.emsd.gov.hk/emsd/eng/pps/gas\\_rim\\_srip.shtml](http://www.emsd.gov.hk/emsd/eng/pps/gas_rim_srip.shtml)

For enquiries on safety of gas installations and gas appliances, please call the 1823 hotline or visit the EMSD website <http://www.emsd.gov.hk>

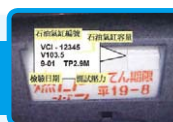


### Did You Know?

## LPG Vehicle Fuel Tank Five-Yearly Revalidation

All LPG vehicles are equipped with an LPG fuel tank, which is a pressure vessel. According to the Gas Safety Ordinance, the LPG fuel tank should be tested and examined not less than once every 5 years. Otherwise, the LPG vehicle owner commits an offence and is liable on conviction to a fine of \$10,000 and, in the case of a continuing offence, to a daily penalty of \$1,000.

In this connection, vehicle owners should observe and check themselves the last test date of their LPG fuel tank (see illustrations), and arrange the revalidation of the tank at a suitable LPG vehicle workshop within 5 years of that date. For example, if "9.03" is marked on the LPG fuel tank,



that means the last test date is September 2003, and the tank should be revalidated in or before September 2008 to certify that it continues to be safe for containing LPG. Vehicle owners should note that the revalidation date of the LPG fuel tank should be based on the date marked on the tank, not the vehicle ex-factory date or vehicle licensing date.

In addition, vehicle owners should note that revalidation of LPG fuel tanks is estimated to reach its peak in 2015 and 2016. As such, they are advised to arrange for revalidation well in advance with operators of suitable workshops.





## Smoking while Operating Cylinder Wagons Strictly Prohibited

It was recently reported in the media that a cylinder wagon driver was suspected of smoking while driving a cylinder wagon.

According to regulation 41(1)(a) of the Gas Safety (Gas Supply) Regulations, no person should smoke while using a cylinder wagon which is carrying liquefied petroleum gas (LPG) cylinders; or unloading/loading LPG cylinders from/into a cylinder wagon. Contravention of the regulation is an offence punishable by a maximum fine of \$10,000 on conviction.

As LPG is a highly flammable gas, the drivers and

operators of cylinder wagons as well as the relevant persons should never smoke inside the cab or cargo compartment, or near the wagon to avoid gas accidents and posing danger to public safety.

In addition to the above persons who should strictly observe the smoking ban, LPG supply companies, LPG distributors and the registered owners of cylinder wagons also have the responsibility to monitor the conditions and daily operation of the wagon to ensure proper and safe operation for the purpose of protecting life and property. ⚠️

## Tank Examination and Inspection

Under regulations 8(3) to 8(6) of Gas Safety (Gas Supply) Regulations, no tank shall be used by its owner to contain LPG unless:

- The tank, which is above ground level and not covered by sand or earth, has been tested and examined not less than once in the 10 years period immediately preceding such use to ascertain whether it is safe to be so used; or
- The tank, which is below ground level or above ground level and covered with sand or earth, has been tested and examined not less than once to ascertain whether it is safe to be used to contain LPG
  - (i) in the 10 years period immediately following the first time it is used to contain LPG; and
  - (ii) after the expiration of the period referred to in paragraph (i), in the 5 years period immediately preceding such use.

Where any test and examination carried out on a

tank pursuant to the above provisions shows that the tank is not safe to be used to contain LPG, the owner of that tank shall have all the flaws rectified before carrying out the aforementioned test and examination all over again to ascertain that the tank is safe to be used to contain LPG.

The tank owner shall keep a written record of the results of any test and examination carried out on the tank pursuant to the above provisions until the tank ceases to be used to contain LPG.

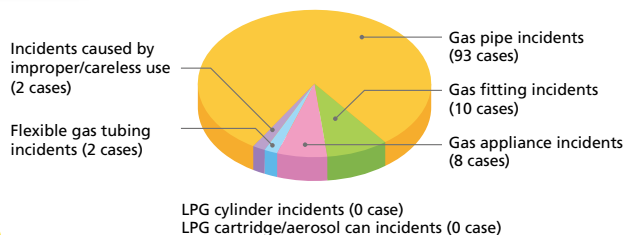
Please note that any person who contravenes the above provisions of regulation 8 shall be guilty of an offence and be liable on conviction to a fine of \$10,000, and, in the case of a continuing offence, to an additional daily penalty of \$1,000. For detailed examination requirements on LPG tanks, please refer to *Code of Practice for Hong Kong LPG Industry, Module 1 - LPG Compounds and Cylinder Stores* (available for download at the EMSD website <http://www.emsd.gov.hk>). ⚠️



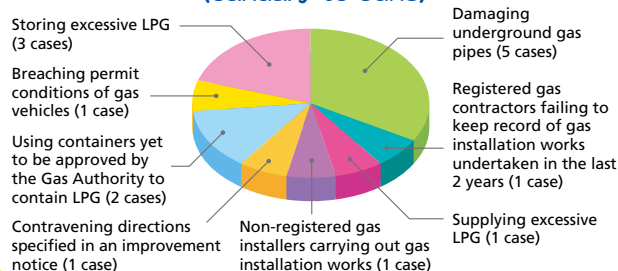
Legal Knowledge

### Gas Incident and Prosecution Statistics

Gas Incidents by Type in 2014  
(January to June)



Prosecutions by Type for Gas-related Cases in 2014  
(January to June)



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