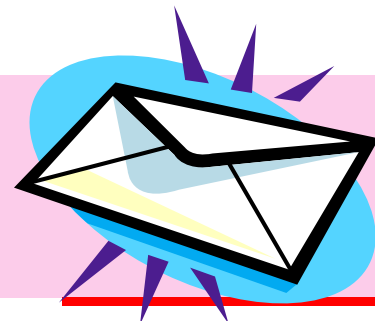


GAS SAFETY Bulletin

Message from the Editor

In this issue of the Gas Safety Bulletin, we will continue to provide you with more legal knowledge on gas safety, news items and some interesting information. In addition, we will specially publish two feature articles on revalidation of LPG fuel tanks for LPG vehicles and the Code of Practice on underground gas pipes for the reference of trade members.

Thank you very much for your valuable opinions on the last issue of the Gas Safety Bulletin. We hope that you will continue to support this bulletin and offer us your opinions, so that we can maintain close ties with the trade. Let us join hands to attain the target of promoting gas safety in Hong Kong.



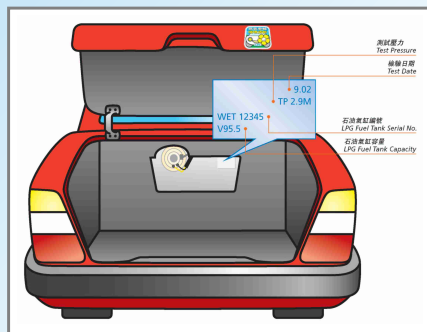
Revalidation of LPG Fuel Tanks for LPG Vehicles

Since the implementation of the LPG Vehicle Scheme, there have been more than 20 000 LPG vehicles running on the roads. Unlike diesel or petrol ones, LPG vehicles are equipped with LPG fuel cylinders (also known as LPG fuel tanks) which are pressure vessels. Under the Gas Safety (Gas Supply) Regulations, owners of LPG vehicles shall have the LPG fuel tanks examined (also known as revalidated) not less than once every 5 years. Here are points to note when LPG fuel tanks are revalidated.

Arranging Revalidation

Owners of LPG vehicles should check on their own when the LPG fuel tanks have to be revalidated. An LPG fuel tank shall be revalidated within 5 years of the last test date as shown on the surface of the tank. Arrange revalidation of LPG fuel tanks at approved LPG vehicle workshops before the tanks expire.

LPG fuel tanks shall be detached from vehicles before revalidation. The detachment shall be carried out by a competent person (Class 6) in an approved LPG vehicle workshop. Competent persons (Class 6) are vehicle mechanics who have completed related courses offered by the Vocational Training Council, have passed interviews conducted by the Gas Authority, and are qualified to repair and maintain the fuel systems of LPG vehicles.



Detached LPG fuel tanks are tested and examined by competent persons (Class 1), who also issue certificates of competency. Competent persons (Class 1), approved by the Gas Authority, are professional engineers who possess the required knowledge, experience and qualification for the examination, inspection and certification of LPG cylinders, tanks, vaporizers, pipes, or associated fittings. They will ensure that certified LPG fuel tanks can contain LPG safely.

The EMSD has issued the general guideline on the revalidation of LPG fuel tanks which is uploaded to its web site for competent persons (Class 1) and related parties' reference. The EMSD is also responsible for the regulation of LPG fuel tank revalidation and the implementation of quality assurance to ensure that the quality and procedure of revalidation conform to the safety requirements of the Gas Safety Ordinance and the guideline. Competent persons (Class 1) shall inform the EMSD before revalidating LPG fuel tanks, so that the EMSD can arrange for random quality assurance inspections, which ensure that the whole revalidation process conform to the requirements of the Gas Safety Ordinance and the guideline.

Revalidation Procedure and Related Statutory Requirements

After being detached from the vehicles in LPG vehicle workshops, the LPG fuel tanks are delivered to the competent persons (Class 1) for revalidation. In accordance with the Gas Safety (Gas Supply) Regulations, if it is necessary to transport two or more LPG containers with a total water capacity of more than 130 litres (e.g. two detached LPG fuel tanks) at the same time, a cylinder wagon approved by the Gas Authority shall be used.

Under the Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations, only registered gas installers (Class 6, 7 or 8) employed by registered gas contractors can personally carry out the installation and testing of gas appliances, fittings and pipes, and the connection and disconnection of LPG fuel tanks to/from gas pipes during the whole process. Competent persons (Class 1) shall directly supervise the purging out of service, testing, examination and purging into service of LPG fuel tanks. They shall also submit test and examination reports to the EMSD and maintain the revalidation record for each revalidated tank.

To facilitate the revalidation work and to ensure safety, competent persons (Class 1) shall purge the residual LPG in fuel tanks using safe methods before inspecting, examining and testing the tanks. Basically, there are two methods:

Purging of LPG Fuel Tanks by Means of Flaring

When this method is used, a flare stack with a permanent pilot, located in a safe or non-hazardous area, shall be

connected to a suitable vapour connection of the LPG fuel tank for flaring of the residual LPG. The flaring process shall be attended to at site at all times. The connection and disconnection of LPG fuel tanks to/from gas pipes shall be carried out personally by registered gas installers (Class 6, 7 or 8) employed by registered gas contractors.

Transfer of Residual LPG to Another Container

In accordance with the Gas Safety (Gas Supply) Regulations, transfer of the residual LPG from the LPG fuel tank to another container is not allowed unless the installation for liquid transfer, which is classified as a NGI, has been approved by the Gas Authority regarding its construction and use. The LPG transfer process shall be carried out by a registered gas supply company in accordance with the Gas Safety (Registration of Gas Supply Companies) Regulations.



Upon purging out of service, the competent person (Class 1) can carry out revalidation for the LPG fuel tank. The work includes external visual inspection, internal visual inspection, hydraulic test, test and examination of safety devices, drying, replacement and installation of components, pneumatic leak test, purging into service, fixing of an information plate indicating revalidation particulars on the LPG fuel tank and completion of test and examination report.

The revalidated LPG fuel tank may be carried to an LPG filling station for refilling of LPG. A valid test and examination report with satisfactory results shall be presented to the filling station operator for inspection. The LPG fuel tank shall not be filled more than 20% full.

Finally, after satisfactory completion of the above procedure, the LPG fuel tank can be returned to a LPG vehicle workshop and re-assembled onto the LPG vehicle by a competent person (Class 6).

Use of Natural Gas in Town Gas Production


The "town gas" currently used by the public is made from naphtha, a petroleum product. The Hong Kong and China Gas Company Limited (HKCG) introduced natural gas as a feedstock to produce town gas this year. The HKCG is increasing the proportion of natural gas in town gas production in phases with an ultimate aim of using 60% natural gas in the town gas production process.

The liquefied natural gas is transported by special tankers from Australia to the natural gas terminal at Mirs Bay, Shenzhen and then goes through a gasification process before being delivered to the gas production plant in Tai Po via two submarine pipelines.



The use of natural gas to produce town gas has brought both economic and environmental benefits. Since natural gas is abundant in supply, its price is more stable than that of naphtha. Natural gas will be less expensive than naphtha, especially when cruel oil prices stay high. The HKCG indicated in the middle of the year that with the introduction of natural gas, its customers will enjoy savings in

gas bills resulting from reduction in the gas production cost. Besides economic benefits, the introduction of natural gas also guarantees a more stable supply of town gas. Moreover, as natural gas is more environmentally friendly feedstock than naphtha, emissions of pollutants like sulphide, nitride and carbon dioxide will certainly be reduced when natural gas is used in the production of town gas.


The properties and composition of town gas produced from natural gas will be more or less the same as those of town gas produced from naphtha, and the main parameters (e.g. calorific value, Wobble index, etc.) will remain unchanged. To users, no changes will be detected. There is no need to modify town gas installations such as town gas appliances and water heaters. Also, no alteration or adjustment to a gas supply system (e.g. town gas pipes, pressure regulators and town gas meters) will be required. Broadly speaking, to town gas customers, gas installers and members of the trade, there should be no change in the use of town gas or in their work. Changes will be made only during the gas production process, including the use of naphtha and natural gas as feedstock, conversion of the gas production plant in Tai Po and changes to the operation mode. As to whether natural gas can be used to fully replace town gas as a fuel for the Hong Kong market, further study may be required. 

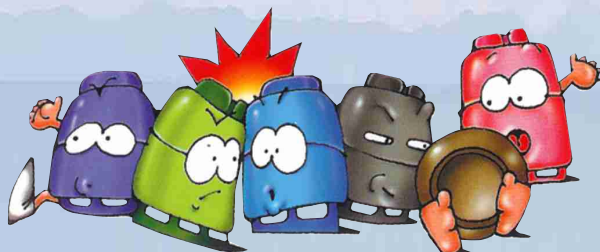


Case Sharing

Members of the LPG industry should know well what is meant by storing excessive quantities of liquefied petroleum gas (LPG) (i.e. LPG with a total nominal water capacity of over 130 litres). In fact, any person who stores excessive quantities of LPG will be prosecuted. Any gas distributor who supplies an excessive number of LPG cylinders or supplies LPG to a place causing the storage of excessive quantities of LPG will be liable to prosecution. According to our case record, up to June this year, we have dealt with three cases concerning contravention of section 3(2)(a) of the Gas Safety (Gas Supply) Regulations, Cap. 51. The gas distributors involved were all convicted and the fines ranged from more than one thousand dollars to several thousand dollars. To sum up, these cases have the following common features:

- (1) the places where the cases were uncovered are intended for commercial purpose (e.g. restaurants or other gas installations); and
- (2) after delivering LPG cylinders, some gas distributors have failed to collect used LPG cylinders immediately.

In fact, gas distributors are authorized persons/companies in the gas industry. With adequate knowledge of gas safety, gas distributors should be aware of the potential hazards of storing excessive quantities of LPG. They are obliged to provide their customers with safe LPG and conduct checks of LPG installations for them. They should also know how their customers store or use LPG and should not supply excessive quantities of LPG. If necessary, gas distributors may consider increasing the frequency of transporting LPG cylinders and collecting used LPG cylinders immediately. In addition, gas distributors should explain clearly to their customers the relevant statutory requirements. Please be considerate and do not supply or store excessive quantities of LPG. 



Legal Knowledge


According to section 12 of the Gas Safety Ordinance, a gas safety inspector, in the exercise of his functions under the Ordinance, may-

- (1) enter, inspect and examine any place or premises in which any gas is manufactured, stored, supplied or used and every part of such place or premises, at all times. A gas safety inspector may make inquiries as to the observance of any requirements under the Ordinance.
- (2) stop, board and search any ship, vehicle or aircraft based on reasonable suspicion.
- (3) enter upon the site of and inspect any works in the vicinity of a gas pipe.

In addition, a gas safety inspector may seize, remove and detain anything in respect of which he has reasonable grounds for suspecting that any offence against the Ordinance has been committed or any other thing which appears to him likely to be, or to contain, evidence of any such offence.

Any person who wilfully obstructs, resists or delays a gas safety inspector in the exercise of his functions under the Ordinance commits an offence and is liable on conviction to a fine of \$25,000 and imprisonment for six months.

You may worry that a gas safety inspector has too much power. As a matter of fact, section 12 of the Ordinance specifies that a gas safety inspector shall not unnecessarily impede or obstruct the work in such place or premises. No gas safety inspector shall enter or search any domestic premises unless he obtains a warrant issued by a magistrate or is of the opinion, having regard to the circumstances of the case, that there is an imminent danger.

Please cooperate fully with us so that gas safety inspectors can exercise their functions under the Ordinance for the purpose of eliminating gas hazards. 

Avoiding Danger from Underground Gas Pipes

In Hong Kong, the pipes used to supply gas are generally laid underneath roads or footpaths (see Figure 1). Therefore, it is likely that gas pipes buried underground will be found when works are carried out in a construction site. The accidental damage of the gas pipes as a result of carelessness or lack of awareness of safety will cause danger, and may lead to fires or explosions which will threaten the lives of the workers working nearby or the passers-by.

According to the Gas Safety (Gas Supply) Regulations under the Gas Safety Ordinance (Cap 51) and the relevant Code of Practice (see Figure 2), any person who carries out any works in the vicinity of a gas pipe shall, before commencing the works, take all reasonable measures to ascertain the position of the gas pipe to avoid damage to the gas pipe, otherwise, the contractor carrying out the works or the responsible person will be prosecuted. Any person who contravenes the above-mentioned regulations commits an offence and is liable on conviction to a maximum fine of \$200,000 and to imprisonment for 12 months.

In short, the contractor and the site personnel shall pay attention to the safe system of work which includes the following four basic steps (see Figures 3 to 6):

1. Obtain record plans of the gas pipes from the gas supply company;
2. Use pipe locators to locate the position of the gas pipes;
3. Using hand dug trial holes to confirm the actual location of the gas pipes;
4. Follow safe excavation practices to ensure that there is an adequate separation distance between any gas pipes and the excavation area.

The EMSD regularly organizes safety seminars for the construction industry and the estate management industry with a view to promoting gas pipes safety. In particular, the site management and the front-line workers are informed of how to take reasonable steps to avoid damage to gas pipes when carrying out works. Moreover, the EMSD has published a series of promotional leaflets for the trade's and the public's reference. For further information, please call the EMSD hotline 1823, or visit the EMSD website at www.emsd.gov.hk.



Figure 1: The pipes used to supply gas are laid underneath roads or footpaths.



Figure 2: The Gas Safety Ordinance and the Code of Practice on Avoiding Danger from Gas Pipes.

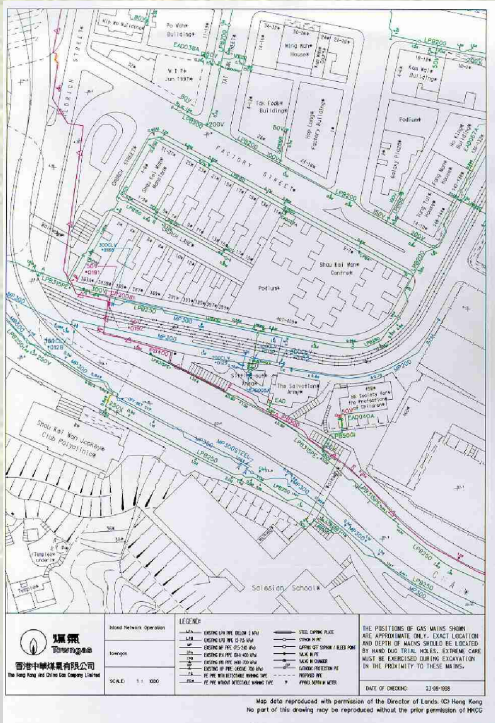


Figure 3: Obtain record plans of the gas pipes from the gas supply company.



Figure 4: Use pipe locators to locate the position of the gas pipes.



Figure 5: Using hand dug trial holes to confirm the actual location of the gas pipes.



Figure 6: Follow safe excavation practices to ensure that there is an adequate separation distance between any gas pipes and the excavation area.

Regular Inspection and Maintenance of Service Risers

A service riser is a gas installation. It is the vertical sections of a service pipe used to supply gas to a building, including any horizontal sections of the service pipe between such vertical sections. The owner of a service riser has a duty to carry out the maintenance and inspection. Generally speaking, most service risers belong to gas supply companies or owners of premises. The actual ownership of the installation can be found in the deed of mutual covenant.

Owner of a gas installation has a duty to arrange for regular inspection and maintenance of the gas installation to protect the public against unnecessary gas hazard. Serious leakage may cause gas fire or explosion, which may result in possible loss of life and property. Besides, the gas supply company may suspend gas supply to a building for safety reasons when necessary.

Generally speaking, the gas supply companies will inspect and maintain the service risers once every 18 months, including making arrangement for a registered gas installer to carry out safety inspection for customers, to ensure that the service risers are in good condition when gas is supplied to the customers.

According to the Gas Safety Ordinance, only a registered gas installer employed by a registered gas contractor can carry out gas installation, inspection and maintenance work. A registered gas installer who carries out inspection and maintenance of service

risers should possess the qualification for carrying out Class 3 gas installation work (Install/commission domestic pipework and appliances).

A registered gas contractor shall exhibit his certificate of registration and a notice at the office where he carries on business. A registered gas installer shall bring along his registration card for easy identification when carrying out inspection and maintenance. Upon completion of gas installation work, a registered gas contractor shall record the details, date and time of the work as well as the name and registration number of the gas installer who has carried out the work for future reference.

For the list of registered gas contractors or further information, please call 1823 Citizen's Easy Link or browse the EMSD website: www.emsd.gov.hk.



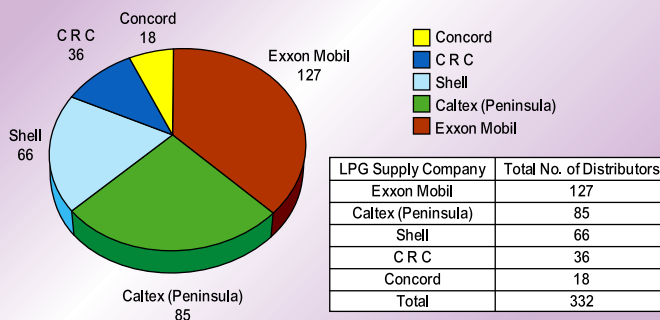
Gas Statistics

Many of our readers are LPG distributors. You may want to know how many LPG distributors each LPG supply company has.

As at June 2006, there are a total of 332 LPG distributors. The number of LPG distributors of each LPG supply company is as follows:

The number of registered LPG distributors of various oil companies in June 2006

Table
No. of LPG Cylinder Distributors
by LPG Supply Companies in June 2006



5天工作週 Five-day week in the Government

From 1 January 2007, the Customer Services Office of the EMSD will operate on a five-day week basis. The new office hours will be as follows:

Day	Time
Monday to Friday	9:00 a.m. to 5:15 p.m.
Saturday, Sunday and public holidays	Closed

Apart from coming in person to the Customer Services Office for various registration and endorsement services, the public and trade members may submit their applications through the following alternative means:

- By post
- Using the application drop-in box located at G/F lobby of EMSD Headquarters from 8:30 a.m. to 12:30 p.m. on Saturday.
- Using the online registration service (for details please browse www.emsd.gov.hk)

Contact Information

Name: _____ RGI No.: _____

Employer (RGC): _____ Contact Tel. No.: _____

Address: _____