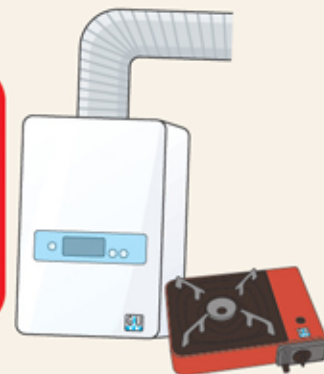


GAS SAFETY Bulletin

Message from the Editor



In this issue of the Gas Safety Bulletin, we will report on the implementation of the Approval Scheme for 'Domestic Gas Appliances'. We will also introduce a local project on the utilization of landfill gas as fuel for producing town gas. We would like to take this opportunity to explain the installation, technical and operational requirements etc of the gas dryer for the reference of trade members. Besides, we will continue to provide more legal knowledge on gas safety, news items and some interesting gas statistics for your information.



Implementation of the Approval Scheme for Domestic Gas Appliances

Introduction

It has been six years since the approval scheme for domestic gas appliances was introduced in 2001. The approval scheme was first implemented on a voluntary basis in 2001 and was transformed into a mandatory scheme in 2003. As a statutory approval authority, the Electrical and Mechanical Services Department ("EMSD") has launched massive publicity to promote the scheme to the gas industry and members of the public. If a domestic gas appliance bears an approval mark, known as the GU Mark, it means it has met the safety standards in Hong Kong.



Latest Statistics on the Scheme

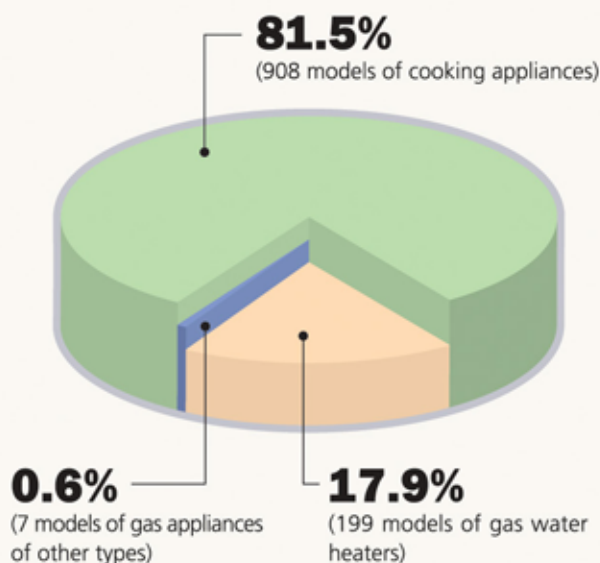
Up to the end of September 2007, 1,114 models were approved under the scheme (Figure 1 shows the approved gas appliances by type). Since the approval of models of gas appliances is valid for a period of five years, importers are required to apply for renewal of approval if they intend to continue to import those products after the expiry of the five-year approval period. For details, please visit our web site at <http://www.emsd.gov.hk>.

Import of domestic gas appliances from the Mainland

Today, China has become the "factory of the world", and the quality of products from the Mainland has improved considerably. Quite a few famous brands have been regarded as "high quality and low priced products" by consumers. Up to 426 models of domestic gas appliances have been imported to Hong Kong from the Mainland, and the majority of them were certified by the Tianjin Entry-Exit Inspection and Quarantine Bureau, a recognised certification body. The Bureau is currently the only authority empowered by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) to certify gas appliances.

In 2003, the EMSD and the AQSIQ signed a "Cooperation Arrangement on Electrical and Mechanical Products Safety" ("the Cooperation Arrangement"), which has fostered cooperation in the safety and energy efficiency of electrical products, gas appliances and lifts and escalators. Under this framework, in respect of the approval scheme for domestic

Figure 1 **Approved Gas Appliances by Type**



gas appliances, the most important task is to ensure the quality of gas appliances imported to Hong Kong from the Mainland. The relevant work on the Mainland, which includes type certification, quality system checks and annual audits of products conducted at the factories, and three yearly renewal revalidation, has been carried out by responsible officers of the certification bodies.

The Cooperation Arrangement stipulates that the EMSD shall maintain close contact with the AQSIQ, hold annual meetings to draw up measures for the scheme, and discuss technical and implementation issues. Under the Cooperation Arrangement, the Working Group on Gas Appliances will meet on a half-a-year basis to follow up decisions made at the annual meetings, ensure the quality of gas appliances imported to Hong Kong, and establish a reporting system for non-compliant products and offences. Such cooperation arrangement and communication channel have been working smoothly with satisfactory results.



Landfill Gas from North East New Territories Landfill

Landfill gas collected from the North East New Territories (NENT) Landfill has been utilised as fuel for the production of town gas at the Tai Po Gas Production Plant since mid-2007.

Background

The NENT Landfill is located at Wo Keng Shan Road, Ta Kwu Ling, New Territories (Figure 1). Landfill gas is generated from the landfill site during its operation as well as aftercare period. In the past, part of the landfill gas generated from the NENT Landfill was utilised to generate electricity for on-site use and as fuel for heating in the leachate treatment process while the remaining gas was flared off (Figure 2).



Figure 1 NENT Landfill



Figure 2 Flaring Stack

For further utilisation of the landfill gas, the Far East Landfill Technologies Ltd., which is the contractor for the development and management of the NENT Landfill, has reached an agreement with the Hong Kong China Gas Co. Ltd. to jointly develop a project on utilising the landfill gas as fuel for the production of town gas at the Tai Po Gas Production Plant.

Landfill Gas Treatment Unit and Underground Gas Pipeline

The project includes the installation of a landfill gas treatment unit inside the NENT Landfill and the laying of a 19 km underground gas pipe from the NENT Landfill to the Tai Po Gas Production Plant.

The landfill gas treatment unit in the NENT Landfill (Figure 3) is used to treat the collected landfill gas. The treatment process comprises compression of the raw landfill gas, removal of hydrogen sulphide,



Figure 3 Landfill Gas Treatment Unit at NENT Landfill

dehumidification, removal of hydrocarbons and carbon dioxide, and odourisation. Subsequent to the treatment process, the methane content of the treated landfill gas increases to more than 80% by volume.

An underground gas pipeline of about 19 km delivers the treated landfill gas from the NENT Landfill to the Tai Po Gas Production Plant (Figure 4). The underground gas pipeline is of diameter of 400 mm and is made of polyethylene. The maximum operating pressure is 400 kPa and the design capacity is 8,100 m³/h.



Figure 4 Landfill Gas Pipeline Route Map

Benefits

The utilisation of the landfill gas from the NENT Landfill turns waste gas into valuable energy. It contributes to the saving in naphtha consumption in the production of town gas, as well as the diversification of fuel supply sources and less emission of greenhouse gases.

Gas Safety

As the gas safety regulator in Hong Kong, the Gas Standards Office keeps a close eye on the landfill gas treatment unit and the associated pipeline. From design and construction to testing and commissioning, the Gas Standards Office ensures that the project complies with the safety requirements.



Gas Dryers in Commercial Premises

The Department has developed the Code of Practice GU 13 (Module One and Module Two) : Commercial Gas Dryer Fuelled by Town Gas/Liquefied Petroleum Gas to be followed by registered gas contractors and owners/operators of gas dryers installed for commercial purposes up to 55kW. The code of practice outlines the minimum safety standards on gas supply and exhaust systems of gas dryers. For details, please visit the EMSD homepage <http://www.emsd.gov.hk>.

General Requirements on Gas Dryers

- Gas dryers should be installed in strict accordance with the technical guidelines provided by the manufacturer.
- A dryer should not be placed near flammable materials, and must be installed in an area with good ventilation.
- The exhaust pipe of a dryer must exhaust to outside air directly. The exhaust pipe should be made of galvanized sheet metal of minimum 0.5 mm thickness or other non-combustible material which must be equivalent in strength and corrosion resistance to galvanized sheet metal of 0.5 mm thickness.
- The pipes should have inspection panels on the surface for regular inspection and cleaning.
- The gas connection and exhaust systems of gas dryers are gas installations, so their installation should be monitored by registered gas installers employed by registered gas contractors. The installers concerned should be qualified to do Class 6 or 7 gas installation work.
- A gas dryer must be installed at a place away from LPG gas cylinders. The cylinders should be stored in a special chamber. For the technical requirements on the chamber, please refer to "Code of Practice GU 06 : LPG Installations for Catering Purposes in Commercial Premises".
- It should be noted that the length of the exhaust pipe should be kept

as short as possible since venting of the exhaust may be hindered if the pipe is too long or contains too many bends.

- If it is difficult to make the exhaust pipe short due to technical or environmental constraints, a mechanical exhaust system should be used. The gas supply and ventilation system of the mechanical exhaust system should have an interlocking device to avoid the accumulation of exhaust gas to a dangerous level. For the technical requirements on the interlocking device, please refer to the "Code of Practice GU 12 : Installation of Mechanical Exhaust System for Gas Appliances".



The Inspection and Maintenance of Gas Installations of Gas Dryers

- The owners/operators of the gas dryers should clean the internal wall of an exhaust pipe regularly according to the suggestion of the manufacturer to avoid lint accumulation that may obstruct exhaust outflow and cause fire.
- A registered gas contractor should be employed to carry out inspection and maintenance of the gas dryers at least once every year.
- The owners of the gas dryers and the registered gas contractors should keep the records of the inspection and maintenance of the dryers for at least two years.

Training of the Operators of the Gas Dryers

- The owners of the gas dryers should arrange basic safety training for the gas dryers' operators so that they are aware of the general rules of operation and safety. ⚠

We have previously introduced to you some of the functions and powers of a gas safety inspector in the column "Legal Knowledge". A gas safety inspector can (1) enter, inspect and examine any place in which any gas is manufactured, stored, supplied or used; (2) seize, remove and detain anything in respect of which he suspects 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; and (3) issue an "improvement notice" to a person who contravenes the Gas Safety Ordinance, etc. What if a person wilfully obstructs, resists or delays a gas safety inspector in the exercise of these functions?

According to our "Case Sharing" records, during an inspection conducted in July last year, we found a batch of cylinders, the quantity of which exceeded the storage limit. So, the gas safety inspector, in exercise of the power conferred by Section 12 (1)(e) of the Gas Safety Ordinance seized that batch of cylinders. When the gas safety inspector was handling the case, a person intervened and wilfully took away one of the cylinders.

Subsequently, we prosecuted that person. One of his charges was contravening Section 27(5)(a) of the Gas Safety Ordinance, i.e. wilfully obstructing and resisting a gas safety inspector in the exercise of his functions under the Ordinance. After a trial, the magistrate found the person guilty of the offence.

Regarding this case, we would like to urge you to assist a gas safety inspector to perform his duties as far as possible according to the requirements of the law. ⚠

Case Sharing



Legal Knowledge

When someone contravenes the Gas Safety Ordinance, what would happen to the article or substance seized?



Section 32 of the Gas Safety Ordinance empowers the Gas Authority to apply to the court for the forfeiture of any article or substance seized by a gas safety inspector under section 12(1)(e) of the Gas Safety Ordinance with regard to an offence committed against the Ordinance.

Please note that as long as there is evidence that the article or substance is related to the offence, the court may order to be forfeited the article or substance which has been seized, irrespective of whether any person has been charged with the offence.

Therefore, apart from being seized, removed and detained, any gas appliance, gas fitting or tool, or LPG cylinder which has contravened the Gas Safety Ordinance may be forfeited on application by the authorities. ⚠

The 2007 Gas Safety Seminar



On 3 October, we organized the 2007 Gas Safety Seminar for the trade, which covered the following issues:

- guideline on gas-fired meat roasters
- guideline on gas dryers
- requirements on transporting LPG cylinders with a bicycle or trolley
- how to avoid damaging concealed gas pipes inside walls
- gas safety of commercial premises
- common examples of violation of gas safety legislation

The seminar drew a large audience. The response was favourable. During the seminar, several colleagues of the Department gave detailed explanations of gas safety matters to the participants. In the last part of the seminar, i.e. the Q & A session, participants asked questions, engaged in discussions and exchanged views enthusiastically.



Requirements on Regular Inspection and Maintenance of Service Risers in the Code of Practice on Building Management & Maintenance

The Code of Practice on Building Management & Maintenance published by the Government requires the owners' corporation or the owners of service risers/installation pipes to arrange for registered gas installers employed by registered gas contractors to inspect and maintain the service riser, including gas meter control valve and service valve, every 18 months to make sure they are in good condition.

Moreover, the code of practice also specifies that the owners' corporation shall keep records of inspection and maintenance for a period of not less than two years after the gas installation work concerned was carried out.

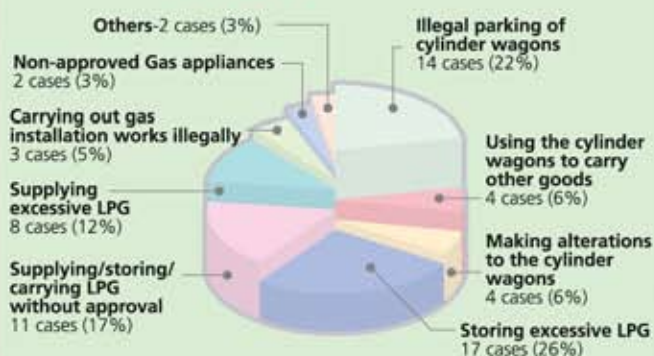
The content of the code of practice can be viewed at the home page of the Home Affairs Department: <http://www.buildingmgt.gov.hk/tc/cop/cop.htm>.

According to the Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations, only a registered gas installer qualified to do Class 3 gas installation work can carry out inspection and maintenance of service risers.

To satisfy the requirement on regular maintenance and inspection of service risers as set out in the Code of Practice on Building Management & Maintenance, the owners' corporation should perform the responsibility of keeping the common parts of the building and the property of the owners' corporation in good condition. Besides, the cooperation of the gas trade and efforts to promote public awareness of the importance of regular inspection and maintenance of service risers, are equally important.

Gas Statistics

Prosecutions (By Type) in 2007 (LPG-related Cases)



Symposium on Electrical and Mechanical Safety & Energy Efficiency - A Better Future for All

The annual Symposium on Electrical and Mechanical Safety & Energy Efficiency will be held on 28-29 January 2008. This year's theme is "A Better Future for All", and the Symposium will cover the current developments and technological advances that will enable a safer, greener and hence better living environment. The Symposium aims to provide a forum for both local and overseas experts and professionals from government departments, professional institutions and other organizations to share experience and exchange views.

For further information on the Symposium and enrolment, please visit the Electrical and Mechanical Services Department home page www.emsd.gov.hk.