

## **LEGISLATIVE COUNCIL BRIEF**

Gas Safety Ordinance  
(Chapter 51)

### **GAS SAFETY (INSTALLATION AND USE AND MISCELLANEOUS) (AMENDMENT) REGULATION 1999**

#### **INTRODUCTION**

At the meeting of the Executive Council on 7 September 1999, the Council ADVISED and the Chief Executive ORDERED that the Gas Safety (Installation and Use and Miscellaneous) (Amendment) Regulation 1999 (“the Amendment Regulation”), at the **Annex**, should be made under section 8 of the Gas Safety Ordinance.

#### **BACKGROUND AND ARGUMENT**

##### **General Background**

2. The Gas Safety Ordinance (“the Ordinance”), which came into force on 1 April 1991, controls, in the interests of safety, the importation, manufacture, storage, transport, supply and use of gas. “Gas” means town gas, liquefied petroleum gas (LPG), natural gas or any mixture of these. The Director of Electrical and Mechanical Services has been appointed as the Gas Authority for the purposes of the Ordinance. The Gas Safety Advisory Committee (“the GSAC”) was established under the Ordinance to advise the Gas Authority on gas safety matters.

3. The Gas Safety (Registration of Gas Installers and Gas Contractors) Regulations, made under the Ordinance, permit only registered gas installers to install a gas water heater. Before the Ordinance came into force, anyone could install a gas water heater.

4. The Gas Safety (Installation and Use) Regulations, which also came into force on 1 April 1991 seeks to, among other things -

- (a) prohibit the installation of, and the making of a connection from, a flueless gas water heater to serve a bathroom or shower; and
- (b) permit flueless gas water heaters to be installed elsewhere, such as in

kitchens, provided that the installation is well ventilated and the heater is affixed with a warning label to advise that it is not to be used for more than five minutes continuously.

The vast majority of gas water heaters in use in Hong Kong are flued models. Most of the flueless gas water heaters still in use were installed before the Ordinance came into force.

### **Review of the Safety of Flueless Gas Water Heaters**

5. An incident involving the use of a flueless gas water heater and two fatalities occurred on 17 January 1999 in Shek Kip Mei Estate. The water heater involved supplied hot water to a shower room. Following the incident, the Gas Authority conducted, in consultation with the GSAC, a review of further measures that might be taken to minimise the occurrence of accidents related to the use of flueless gas water heaters. The following paragraphs summarise the outcome of the review and the way forward.

#### **(A) Flueless Gas Water Heaters Serving Bathrooms and Showers**

6. Currently, there are some 20,000 flueless gas water heaters serving bathrooms and showers. The prohibition since April 1991 on the installation of such heaters to serve a bathroom or shower recognises that these appliances are not designed to supply hot water continuously for an extended period. Being flueless, they have no means of discharging the products of combustion to the outside air. If there is inadequate ventilation, these products will build up in the room atmosphere, creating a potentially hazardous situation for the person using the bathroom or shower. The Gas Authority advised the gas supply companies in 1991 that, where owners declined to replace bathroom or shower installations using flueless gas water heaters, they should be advised that there should be at least one fully louvered window permanently open to the outside air next to the heater so as to provide an uninterrupted means of ventilation. A warning label should also be affixed to the heater to indicate that this means of ventilation must not be blocked. Incidents since 1991, involving eight fatalities, have indicated however that there is no assurance that owners will follow these safety requirements in respect of installations serving bathrooms and showers, particularly during cold weather, despite much publicity by the Gas Authority of the need for adequate ventilation in such circumstances.

7. The Gas Authority has therefore sought the advice of the GSAC as to whether the use of all flueless water heaters connected to bathrooms or showers should be prohibited, regardless of the date of installation, to eliminate dangers arising from some householders ignoring safety instructions and advice, blocking essential ventilation openings, enclosing previously open balcony areas or missing important safety inspections. After careful consideration, the GSAC advised that, on safety grounds, the use of flueless gas water heaters connected to showers should be prohibited.

8. To comply with the new prohibition, owners of flueless gas water heaters serving bathrooms and showers will need to make arrangements for disconnection and most likely also for replacement. Given that they should have been installed before April 1991, the heaters to be disconnected are at least eight years old and many will be much older. New flued heaters are available at discounted prices and some with favorable financing terms. This should help in alleviating the costs for owners.

9. The Gas Authority plans to give owners of flueless gas water heaters serving bathrooms or showers six months to arrange disconnection and replacement. He intends to give three months' notice before bringing the Amendment Regulation into effect and provide a grace period of three months after the commencement.

#### **(B) Sale and New Installation of Flueless Gas Water Heaters**

10. Although flueless gas water heaters may be installed in places other than bathrooms and showers, the Gas Authority has advised the trade since 1991 (in a code of practice) that the use of a flued model is preferred in the interests of safety. In 1998, the Gas Authority introduced new gas water heater installation requirements to facilitate the use of a new generation of gas water heaters entering the market. Innovative designs now allow the installation of small, flued heaters in confined places. This option is favoured by architects and for the first time in Hong Kong provides a range of gas alternatives to the flueless model. Demand for the flueless type of gas water heater, which is currently about 1,200 units a year, is therefore likely to continue to diminish.

11. Taking into account the safety concerns associated with flueless gas water heaters and that small flued models are now available, the Gas Authority considered it opportune for consideration to be given to prohibiting the installation of any further heaters of this type. Accordingly, he sought the advice of the GSAC as to whether the sale and new installation of flueless gas water heaters should be discontinued. After careful consideration, the GSAC advised that, on safety grounds, the sale, new installation and replacement of a flueless gas water heater by another flueless model should be prohibited.

#### **(C) Flueless Gas Water Heaters in Kitchens**

12. Currently, there are some 59,000 flueless gas water heaters serving kitchens, of which 9,000 have an oxygen deficiency sensor. The sensor monitors air quality in the vicinity of the water heater and shuts off the heater before the surrounding atmosphere becomes hazardous.

13. Though flueless gas water heaters are designed for use in kitchens, those currently installed still give rise to some safety concerns as the requirement of non-continuous use (paragraph 4(b) above) is difficult to enforce in practice and the

oxygen deficiency sensor cannot be fitted to heaters manufactured without it. Furthermore, kitchens in Hong Kong are generally small and there is sometimes no clear separation between the kitchen and other parts of the premises. The Gas Authority therefore sought the advice of the GSAC as to whether the flueless gas water heaters which are installed in kitchens should be prohibited on safety grounds.

14. The GSAC noted that there had been one fatal incident involving a flueless gas water heater in a kitchen over the past ten years. It considered however that this could not be taken as a typical case, because it involved unsafe use, namely the simultaneous use of the heater and an air-conditioner which had been installed in the kitchen. It noted that, normally in Hong Kong, kitchens usually have windows and are adequately ventilated with fresh air, even during winter. It was also informed that the Hong Kong Institution of Engineers supported the continued use of installed units, irrespective of whether an oxygen deficiency sensor was fitted. After careful deliberation, the GSAC advised that the use of existing flueless gas water heaters in kitchens should not be prohibited. GSAC members were also of the view that requiring the disconnection and replacement of such a large number of heaters in kitchens would encounter much resistance from users.

15. In view of the GSAC's advice, the Gas Authority will arrange for additional publicity of the correct way of using flueless gas water heaters and for the gas supply companies to increase the frequency of their safety inspections of such heaters in kitchens from the current once every 18 months to once every 12 months.

#### **(D) Related Enforcement Issues**

16. The Gas Safety (Installation and Use) Regulations empower a person engaged in carrying out work in relation to a gas fitting in any premises to shut off the gas supply to an unsafe gas appliance (which involves closing the isolation valve in the gas pipe supplying the appliance) and apply a notice or label warning that the appliance is unsafe and should not be used. Experience has shown that householders sometimes ignore the warning notice, open the isolation valve and continue using the appliance. Such action endangers all members of the household. However, enforcing compliance with the requirements of a warning notice or label affixed to such an appliance in domestic premises is very difficult.

17. To overcome this difficulty, the Amendment Regulation empowers the registered gas installer who encounters the unsafe gas appliance to shut off or disconnect an unsafe gas appliance, such as a flueless gas water heater connected to a bathroom or shower, from the gas supply. Disconnection is effected by physically separating the appliance from the gas supply pipe and securely capping the pipe. Such a provision will enable registered gas installers to ensure in particular that any flueless gas water heater connected to a bathroom or shower is permanently disconnected.

18. Some owners, despite having been given all reasonable notice and opportunity, may refuse access or permission for disconnection of an unsafe appliance to be effected. The Amendment Regulation, in such circumstances, empowers the gas supply company concerned to cause the supply of piped gas to the affected premises to be shut off from outside the premises, or the delivery of cylinder LPG to the affected premises to be suspended, as the case may be, and restored only when the unsafe appliance located therein is safely disconnected.

#### **Amendments to existing regulation**

19. In line with the advice of the GSAC and the Gas Authority in relation to the above policy and enforcement matters, respectively, the Gas Safety (Installation And Use) Regulations and the Gas Safety (Miscellaneous) Regulations are amended as necessary -

- (a) to prohibit the use of flueless gas water heaters to serve bathrooms or showers, with a grace period of three months, after commencement of the amending legislation, for existing installations to be permanently disconnected;
- (b) to prohibit the sale or supply, for use in Hong Kong, of any flueless gas water heater;
- (c) to prohibit the new installation of flueless gas water heaters and the replacement of a flueless gas water heater by another flueless model;
- (d) to prohibit the use of a gas appliance if the user knows or has reason to suspect that it has been installed or used in contravention of the proposed prohibitions on the use of a flueless gas water heater to serve a bathroom or shower ((a) above) and the installation of any flueless gas water heater ((c) above);
- (e) to empower registered gas installers to disconnect an unsafe gas appliance from the gas supply;
- (f) to empower registered gas supply companies to shut off the gas supply to the premises if disconnection of an unsafe appliance cannot be effected, and provided that it can be shut off without shutting off the supply of gas to any other unaffected premises;
- (g) to provide that, where a gas supply to any premises is shut off, it shall not be reinstated unless it is stated in writing by the gas supply company concerned that remedial action has been taken or by the Gas Authority, upon the request of the person concerned, that he is of the opinion that the shutting off of the gas supply was not justified; and

- (h) to provide that any person who contravenes the proposed prohibition on sale or supply of any flueless gas water heater is liable on conviction to a fine at level 3 (\$10,000) and, in the case of a continuing offence, to a daily penalty of \$1,000.

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20. The Amendment Regulation provides for it to come into operation on a day to be appointed by the Secretary for Economic Services by notice in the Gazette. The other provisions are presented in two Schedules to the Regulation.

21. **Schedule 1** amends the Gas Safety (Installation and Use) Regulations. The main amendments are set out below.

- (a) **Section 1** provides for the term “shut off” to be interpreted, in relation to the supply of gas, as including disconnecting the supply of gas and ceasing to supply cylinders.
- (b) **Section 4** provides that no person shall use a gas appliance if he knows or has reason to suspect that it has been installed or used in contravention of the proposed prohibitions on the installation of any flueless gas water heater and the use of any flueless gas water heater to serve a bathroom or shower.
- (c) **Section 5** provides that the gas supply company concerned shall, where it knows or has reason to suspect that there is an unsafe gas appliance in any premises and has taken all reasonable steps but unable to cause the person concerned to effect repair work, shut off the supply of gas to the premises concerned, unless it is not reasonably practicable to do so without shutting off the supply of gas to any other premises which are unaffected (new regulation 32(4)). It also provides that, where the supply or delivery of gas to premises is shut off, the supply of gas shall not be reinstated unless the gas supply company concerned is satisfied that the gas fitting concerned has been made safe or that the Gas Authority, at the request of the person concerned, states that the shutting off of the gas supply by the gas supply company was not justified (new regulation 33(2)).
- (d) **Section 6** prohibits the installation of flueless gas water heaters and the use of such a heater to serve a bathroom or shower. It also provides that, in the case of existing flueless gas water heaters, the person responsible for the premises in which the heater is installed shall, within three months, cause the supply of gas to the heater to be permanently disconnected.

22. Contravention of any of the requirements of the regulations amended by sections 4, 5 and 6 of Schedule 1 is an offence. The existing maximum penalty for contravention of these regulations - a fine of \$5,000 - will therefore apply to contravention of the requirements of sections 4, 5 and 6.

23. **Schedule 2** amends the Gas Safety (Miscellaneous) Regulations so as to prohibit the sale of flueless gas water heaters for use in Hong Kong and to provide that any person who contravenes this restriction commits an offence and is liable on conviction to a fine at level 3 (\$10,000) and, in the case of a continuing offence, to a daily penalty of \$1,000.

## **LEGISLATIVE TIMETABLE**

24. The legislative timetable for the Amendment Regulation will be -

Publication in the Gazette	17 September 1999
Tabling at the Legislative Council	6 October 1999

## **HUMAN RIGHTS IMPLICATIONS**

25. The Department of Justice advises that the Amendment Regulation is consistent with the human rights provisions of the Basic Law.

## **BINDING EFFECT OF THE LEGISLATION**

26. The Amendment Regulation does not affect the current binding effect of the Gas Safety Ordinance.

## **FINANCIAL AND STAFFING IMPLICATIONS**

27. The Director of Electrical and Mechanical Services estimates that he will require the equivalent of an additional six Mechanical Inspectors and two Assistant Mechanical Inspectors for a period of 18 months after the Amendment Regulation is brought into operation to ensure that the programme of replacement of flueless gas water heaters is completed satisfactorily and to inspect retail outlets to check that flueless models of heater are no longer on sale. To meet this requirement, the Director will engage the service of suitably experienced Mechanical Inspectors employed by the Electrical and Mechanical Services Trading Fund at an estimated non-recurrent cost of \$5 million. Any residual monitoring and inspection work required after that period will be absorbed by the existing resources of the department.

## **ECONOMIC IMPLICATIONS**

28. Through enhancing public safety, the Amendment Regulation will bring about wider economic benefits to the community at large.

## **PUBLIC CONSULTATION**

29. The GSAC, the members of which are drawn from representatives of the gas supply industry, gas installers, different economic sectors and the general community, has been consulted and has advised as described above. The Legislative Council Panel on Economic Services discussed the safety of gas water heaters on 22 March 1999 and expressed support for a prohibition on the use of flueless gas water heaters serving bathrooms and showers. The Panel also considered it desirable to ban the use of these heaters in kitchens and the sale of flueless gas water heaters. While there has been no consultation with the public at large, the debate over the safety of flueless gas water heaters has attracted wide publicity.

## **PUBLICITY**

30. A press release will be issued. A spokesman will handle media and public enquiries.

## **ENQUIRIES**

31. Subject officer : Miss Amy Chan, Acting Principal Assistant Secretary for Economic Services, telephone 2810 2655, fax 2868 4679.

Economic Services Bureau  
17 September 1999



**GAS SAFETY (INSTALLATION AND USE AND MISCELLANEOUS)  
(AMENDMENT) REGULATION 1999**

(Made by the Chief Executive in Council under section 8  
of the Gas Safety Ordinance (Cap. 51))

**1. Commencement**

This Regulation shall come into operation on a day to be appointed by the Secretary for Economic Services by notice in the Gazette.

**2. Amendment of Gas Safety (Installation  
and Use) Regulations - (Schedule 1)**

The Gas Safety (Installation and Use) Regulations (Cap. 51 sub. leg.) are amended as set out in Schedule 1.

**3. Amendment of Gas Safety (Miscellaneous)  
Regulations - (Schedule 2)**

The Gas Safety (Miscellaneous) Regulations (Cap. 51 sub. leg.) are amended as set out in Schedule 2.

SCHEDULE 1

[s. 2]

**AMENDMENT OF GAS SAFETY (INSTALLATION AND  
USE) REGULATIONS**

**1. Interpretation**

Regulation 2 of the Gas Safety (Installation and Use) Regulations (Cap. 51 sub. leg.) is amended -

- (a) in the definition of “切斷閥” , by repealing “切斷”

where it secondly appears and substituting “截停” ；

(b) by adding -

“ “shut off” ( 切斷 ) , in relation to the supply of gas, includes disconnecting the supply of gas and ceasing to supply cylinders;”.

## 2. **Gas meters - general provisions**

Regulation 10(1)(b) is amended by repealing “切斷” and substituting “截斷” .

## 3. **Testing of gas appliances**

Regulation 30(2) is amended, in the Chinese text, by repealing paragraph (b) and substituting -

“(b) 將該氣體用具與氣體供應截離。” .

## 4. **Unsafe gas appliances**

Regulation 31 is amended -

(a) in paragraph (d), by repealing “or” at the end;

(b) in paragraph (e), by repealing the full stop and substituting”; or”;

(c) by adding -

“(f) that the appliance has been installed or used in contravention of regulation 35.”.

## 5. **Regulations substituted**

Regulations 32 and 33 are repealed and the following

substituted -

**“32. Unsafe gas fittings**

(1) Where -

(a) a gas supply company which supplies gas to any premises; or

(b) a person engaged in carrying out work in relation to a gas fitting in any premises,

knows or has reason to suspect that any defect or other circumstance referred to in regulation 31 exists, or that gas is escaping from any other gas fitting, in the premises, then, where paragraph (a) is applicable, the company shall take all reasonable steps to cause a person to and, where paragraph (b) is applicable, the person referred to therein shall -

(i) so far as is reasonably practicable, forthwith take all steps to carry out repair work to remove the defect or remedy that circumstance, or to prevent the further escape of gas, as the case may be; or

(ii) if it is not reasonably practicable to carry out the repair work referred to in paragraph (i) -

(A) cause the supply of gas to the gas fitting concerned to be shut off;

(B) attach to such fitting, or to the gas valve which has shut off the supply of gas to it, a notice prepared and issued by the Authority for the purposes of this

subparagraph, completed in accordance with any directions specified therein; and

(C) as soon as practicable, submit to his employer or, if he is self-employed, shall retain for not less than 2 years, a notice prepared and issued by the Authority for the purposes of this subparagraph, completed in accordance with any directions specified therein.

(2) The employer to whom a notice is submitted under subregulation (1) (ii) shall retain it for not less than 2 years after the day on which it was so submitted.

(3) Subject to regulation 33, no person shall remove or mark, or damage or destroy, a notice referred to in subregulation (1) (ii) (B) attached to a gas fitting or gas valve.

(4) Where subregulation (1) (a) is applicable and the gas supply company concerned is unable to cause a person to take the action required under subregulation (1) (i) or (ii) notwithstanding the company taking all reasonable steps to do so, then the company shall shut off the supply of gas to the premises concerned unless it is not reasonably practicable to do so without shutting off the supply of gas to any other premises to which this subregulation is not applicable.

(5) Subregulation (4) shall not prejudice the operation of any other right, privilege or obligation that a gas supply

company has to shut off the supply of gas to any premises.

### **33. Reinstatement of supply of gas**

(1) Where a supply of gas to a gas fitting is shut off under regulation 32(1), no person shall reinstate such supply unless -

- (a) the defect or other circumstance, or the further escape of gas, specified in the notice concerned referred to in regulation 32(1)(ii)(B), is removed or remedied, or prevented, as the case may be; or
- (b) upon the request of the responsible person for the premises in which such fitting is installed, the Authority, being of the opinion that such shut off was not justified, states in writing that he is of that opinion.

(2) Where a supply of gas to premises is shut off under regulation 32(4), no person shall reinstate such supply unless -

- (a) the gas supply company concerned states in writing that in relation to the premises it is satisfied that it is no longer necessary to cause a person to take the action required under regulation 32(1)(i) or (ii);
- (b) upon the request of the responsible person for the premises, the Authority, being of the opinion that such shut off was not justified,

states in writing that he is of that opinion; or

(c) subregulation (1)(a) or (b) becomes applicable to the gas fitting concerned in the premises.

(3) Where a person reinstates a supply of gas to a gas fitting as provided under subregulation (1), he shall -

(a) immediately thereafter remove the notice referred to in regulation 32(1)(ii)(B) which relates to such fitting; and

(b) as soon as practicable, submit to his employer or, if he is self-employed, shall retain for not less than 2 years, the notice removed under paragraph

(a) completed in accordance with any directions specified therein.

(4) The employer to whom a notice is submitted under subregulation (3) shall retain it for not less than 2 years after the day on which it was so submitted.”.

## 6. Regulation substituted

Regulation 35 is repealed and the following substituted -

### “35. Flueless gas water heaters

(1) No person shall install a flueless gas water heater.

(2) Subject to subregulation (4), no person shall use a flueless gas water heater to serve a bathroom or shower.

(3) Where immediately before the commencement of this regulation a flueless gas water heater serves a bathroom or shower, then the responsible person for the premises in which

the heater is installed shall, not later than 3 months after the commencement of this regulation, cause the supply of gas to the heater to be permanently disconnected.

(4) Subregulation (2) shall not apply to a flueless gas water heater referred to in subregulation (3) until the expiration of the period specified in subregulation (3).”.

## SCHEDULE 2

[s. 3]

### AMENDMENT OF GAS SAFETY (MISCELLANEOUS) REGULATIONS

#### 1. **Regulation added**

The Gas Safety (Miscellaneous) Regulations (Cap. 51 sub. leg.) are amended by adding -

#### **“3A. Restriction on sale, etc. of**

##### **flueless gas water heaters**

- (1) No person shall knowingly -
  - (a) sell or offer or expose for sale; or
  - (b) supply or offer to supply,

for use in Hong Kong, any flueless gas water heater.

(2) Any person who contravenes subregulation (1) commits an offence and is liable on conviction to a fine at level 3 and, in the case of a continuing offence, to a daily penalty of \$1,000.”.

Clerk to the Executive Council

COUNCIL CHAMBER

1999

Explanatory Note

The purpose of this Regulation is to -

(a) amend the Gas Safety (Installation and Use) Regulations (Cap. 51 sub. leg.) to

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- (i) add a definition of the term “shut off” to make it clear that the term includes disconnecting a gas supply and ceasing to supply cylinders (section 1 (b) of Schedule 1);
- (ii) amend regulation 31 to add a contravention of regulation 35 in respect of a gas appliance as one of the grounds on which a person shall cease to use the appliance (section 4 of Schedule 1);
- (iii) require a gas supply company which supplies gas to any premises to take reasonable steps to cause a person to, inter alia, take remedial action if the



company knows or has reason to suspect that there is an unsafe gas appliance in the premises (new regulation 32(1) at section 5 of Schedule 1);

- (iv) require the gas supply company to shut off the supply of gas to the premises if the company is unable to cause a person to, inter alia, take the remedial action (new regulation 32(4) at section 5 of Schedule 1);
  - (v) specify the circumstances in which the supply of gas to the premises may be reinstated (new regulation 33(2) at section 5 of Schedule 1);
  - (vi) prohibit the installation of all flueless gas water heaters (new regulation 35(1) at section 6 of Schedule 1); and
  - (vii) prohibit the use of a flueless gas water heater to serve a bathroom or shower except that, in the case of existing gas water heaters serving a bathroom or shower, a grace period of 3 months is provided (new regulation 35(2), (3) and (4) at section 6 of Schedule 1); and
- (b) amend the Gas Safety (Miscellaneous) Regulations (Cap. 51 sub. leg.) to add a new regulation 3A to, inter alia, prohibit the sale of flueless gas water

heaters for use in Hong Kong (Schedule 2).