

# **Air Pollution Control Regulations and Requirements Relating to Restaurant Operation**

**Environmental Compliance Division  
Environmental Protection Department**



# Contents

1. Air Pollution Problems Caused by Restaurant Operation
2. Food and Environmental Hygiene Department - A Guide to Food Licence Applications
3. Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations
4. Air Pollution Control Ordinance - Sections 10 and 30
5. Prevention is better than cure
6. Summary
7. Reference Materials



# 1. Air Pollution Problems Caused by Restaurants (1)

- The cooking processes such as pan-frying, deep-frying, grilling, or roasting in any restaurant could emit oily cooking fume and odour.
- If the cooking fume and odour are discharged without proper treatment, or if the kitchen exhaust vents are not positioned properly, it would cause air pollution and nuisances.

Cooking Fumes and Odour Complaints from Restaurant Trade and Food Products Manufacturing Industry for the Past 5 Years (2018-2022)

Year	2018	2019	2020	2021	2022
No. of Complaints	1,015	934	661	834	710



# Air Pollution Problems Caused by Restaurants (2)

## Cooking fume and odour



Cooking fume is emitted directly to the outdoor without proper treatment



Exhaust outlet is close to residential areas



# Air Pollution Problems Caused by Restaurants (3)

## Cooking fume and odour



The exhaust outlet is located in the rear lane such that the cooking fumes and odour are difficult to dissipate.



## 2. Food and Environmental Hygiene Department – A Guide to Application for Restaurant Licences



<https://www.fehd.gov.hk/english/licensing/guide.html#>

**A GUIDE TO APPLICATION FOR  
RESTAURANT LICENCES**

**Food and Environmental Hygiene Department**

**(March 2023 Edition)**





# A Guide to Application for Restaurant Licences (1)

## Environmental Protection Considerations

48. The design and installation of a ventilating system shall ensure emissions to air from restaurant is free from any visible fumes and objectionable odours as well as not to cause noise disturbance to nearby residents. Details of such requirements are set out in paragraphs 140 to 153 in Part IX.



# A Guide to Application for Restaurant Licences (2)

## Location of the Restaurant

### General

- (a) Sufficient buffer distance from nearby residents should be allowed.
- (b) Position and installation of pollution control equipment should be allowed.

### Avoidance of Air Pollution

- (a) Choosing residential block or sites close to residential block as restaurants should be avoided.
- (b) Enough separation distance should be allowed for positioning the exhaust outlet for effective dispersion of cooking fumes/odour to the open air.
- (c) Enough space and adequate access should be provided for installation of air pollution control equipment.
- (d) Other than the properly designed exhaust system, there should be no free passage in the premises through which cooking fumes and odour could escape to the neighbouring areas.





# A Guide to Application for Restaurant Licences (3)

## Design and Installation of Kitchen Exhaust System

145. Emissions to air from the restaurant should be free from any visible fume and objectionable odour. Cooking stoves in restaurant kitchens should be designed in such a way that no excessive air pollutant emissions should be generated when in use. The number of cooking stoves should be minimized to cope with the business of the restaurant.

146. Suitable outlet position of the exhaust system and its design are of paramount importance to avoid causing, or contributing to, air pollution to the public. The following summarizes the main considerations involved:

## Positioning of Exhaust Outlets

- (a) The outlets should be located at such a place where the ventilation is good and the emissions from them can be adequately dispersed without hindrance.
- (b) Appropriate separation distance from any sensitive neighbouring properties should be allowed to avoid creating a nuisance.
- (c) The exhaust emission should be directed vertically upwards. Advice from environmental professionals on the effectiveness of the system should be sought if an alternative design is to be adopted.
- (d) The emission from the exhaust system will not be restricted or deflected by, for example, the use of plate or caps.
- (e) The outlet should preferably be extended at least 3 metres above the highest point of the building where the restaurant is located. If any attached or adjacent building within a twenty-metre radius is taller than the source building, the exhaust height should be extended accordingly. If this is not practicable, advice from environmental professionals should be sought to identify an alternative outlet location.



# A Guide to Application for Restaurant Licences (4)

## Design of Exhaust System

- (a) The complete kitchen exhaust system, including the air pollution control equipment, should be properly designed, fabricated and serviced to ensure their performance. The design should always be based on the expected peak load conditions, i.e. the worst case scenario.
- (b) The large amount of oily fumes generated from frying, charbroiling or roasting need to be removed from the extracted air, by efficient air pollution control equipment, before it is discharged into the open air.
- (c) If the exhaust contains a strong odour or the exhaust outlet is in close proximity to any sensitive receptor (such as residential premises and school), high efficiency odour control equipment will also be required.
- (d) As the removal of both oily fumes and strong odours requires special additional treatment, it is advisable to collect and treat these emissions separately so as to avoid mixing the more polluted exhaust with the general ventilation and hence overloading the control equipment.
- (e) In the installation and design of ducting, large extraction fan, condenser for air-conditioner, water scrubber and electrostatic precipitator, it is suggested that a registered specialist contractor (ventilation works category)/AP/RSE be consulted to confirm no adverse effect caused to structural suitability, fire escape in respect of the construction, narrowing of the means of escape or reduction of headroom, etc.



# A Guide to Application for Restaurant Licences (5)

## Operation and Maintenance

153. The performance of pollution control equipment depends on the way it is operated and maintained. Restaurant owner/operators should ensure that their pollution control equipment is properly operated and maintained to ensure performance to the design standard. The following practices are suggested:

- (a) Operation and servicing of the pollution control equipment should only be carried out by trained and competent staff with sufficient training and relevant skill and should be in accordance with the manufacturers' recommendations or guidance;
- (b) Maintenance and repair of the pollution control equipment should be carried out by competent professionals/contractors;
- (c) Consideration should be given in the design to ensure continuous operation of the pollution control equipment;
- (d) Components should be inspected, cleaned and serviced regularly to ensure proper performance of each component/part;
- (e) Sufficient stock of such materials should be kept in the restaurant to facilitate immediate replacement; and
- (f) Restaurant owners/operators should keep a copy of the operation and maintenance manual as well as the maintenance and repair log book of the pollution control equipment at the restaurant.



### 3. Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations

- If a restaurant operator needs to install or modify a chimney, stove, or other cooking equipment with total fuel consumption rate more than
  - 25 litres of liquid fuel per hour; or
  - 35 kilograms of solid fuel per hour; or
  - 1150 Megajoules of gaseous fuel per hour.
- Approval from EPD must be obtained before the commencement of works.



# Basic Requirements

## Location of Exhaust Outlets

- An exhaust outlet should be located in a **well-ventilated** position and where emissions can be **fully dispersed**.
- **Sufficient distance** should be maintained from nearby air sensitive receivers (e.g. domestic premises, schools, etc.) to avoid causing nuisance due to emission of cooking fumes and odour.

## Control of Cooking Fume and Odour

- If restaurants carry out frying, grilling, roasting or other cooking processes that may emit a large amount of oily fumes or odour, the grease filters alone would not be effectively removed the cooking fumes or odour. The restaurants concerned must **install high-efficiency air pollution control equipment** to remove oily fumes and odour.





# Cooking Fume and Odour Control (1)

## Grease Filters

### Baffle type



### Mesh Filter type



- Preliminary treatment
- Filter out large oil droplets

## Hydrovents



- Oil particles be carried away by the water flow whilst passing through the water curtain to remove oil grains and odour





# Cooking Fume and Odour Control (2)

## Electrostatic Precipitator (EP)

- Collect minute oil droplets of cooking fumes effectively
- Removal efficiency could be up to or above 95%

Hood Type



Duct Type



## Control of Cooking Odour

- ✓ Activated Carbon Filter
- ✓ High Performance UV Grease Extraction Hood



# 4. Air Pollution Control Ordinance Sections 10 and 30(1)

## Air Pollution Control Ordinance - Section 10





- If cooking fumes and/or odour emitted from restaurants **cause nuisance** to the public, EPD may issue **a legal notice** pursuant to Section 10 of the Air Pollution Control Ordinance to the owner or operator of the restaurant, and required for implementing abatement measures within a specified period of time.



# Air Pollution Control Ordinance Sections 10 and 30(2)

## Air Pollution Control Ordinance - Section 30

For the ventilation system and/or other equipment serving restaurant stoves, owing to:

-  Unsuitable design, defective construction or maintenance ; or
-  Excessive wear and tear ; or
-  The use of unsuitable fuel or other material ; or
-  Improper operation

EPD may issue a legal notice pursuant to Section 30 of the Air Pollution Control Ordinance to the owner or operator of restaurant, and required for the implementation of abatement measures within a specified period.



# Provisions in Legal Notices

- Implement abatement measures within a specified time limit
- In general, abatement measures include:
  - Retrofitting high efficiency control equipment (e.g. electrostatic precipitator) and control the greasy fumes emitted from cooking processes to ensure the emissions are free from any visible greasy fumes.
  - Retrofitting air pollution control equipment (e.g. activated carbon filter or UV grease extraction hood) and control the odour emitted from cooking processes to ensure the emissions are free from any objectionable odour.
  - **Repairing electrostatic precipitator** to ensure the emissions are free from any visible greasy fumes.
  - **Relocating the exhaust outlet.**



# Penalties for Non-compliance of a Legal Notice

- First Conviction: a fine of \$100,000
- Second and Subsequent Conviction: a fine of \$200,000 and imprisonment for 6 months
- On the first or subsequent conviction, to a further fine of \$20,000 for each day that the court is satisfied that the failure to comply with the air pollution abatement notice has continued



# 5. Prevention is better than Cure

- Before operating a restaurant, if cooking processes generate a large amount of oily cooking fumes/odour such as **grilling, frying and roasting**, regardless of the necessity of approval from EPD, **high efficiency air pollution control equipment** such as hydrovent with electrostatic precipitator should be installed and **the exhaust should be positioned with good ventilation and without affecting others.**
- **Avoid retrospective installation.** The retrofitting work will disrupt normal business/operation as well as the already installed equipment may present technical difficulty or improbable.





# 6. Summary

- License Application Requirement: Exhaust emission should be free from
  - visible fumes
  - objectionable odour
  - nuisance to the public
- If the cooking process involves grilling, frying, roasting, etc., which generates greasy fumes/odour, the following should be installed
  - high efficiency control equipment (e.g. Electrostatic Precipitator) to ensure no visible greasy fume is emitted.
  - control equipment (e.g. Activated Carbon Filter, High Performance UV Grease Extraction Hood) to ensure no objectionable odour is emitted.
- Positioning the exhaust with good ventilation and without affecting others



# 7. Reference Materials (1)

## Green Restaurant Web Site



<https://www.epd.gov.hk/epd/english/greenrestaurant/index.html>



# 7. Reference Materials (2)

## Green Restaurant – Guidelines and References



[https://www.epd.gov.hk/epd/english/greenrestaurant/guidelines/guidelines\\_03.html](https://www.epd.gov.hk/epd/english/greenrestaurant/guidelines/guidelines_03.html)



# 7. Reference Materials (3)

## Laws and Licence Application

Home » Green Restaurant

## Laws and Licence Application

### Restaurant Related Environmental Laws and Licence Application Procedures

- Offices of the Environmental Protection Department
- Air Pollution Control Ordinance
- Water Pollution Control Ordinance
- Noise Pollution Control Ordinance
- Waste Disposal Ordinance
- Bilingual Law Information System



[https://www.epd.gov.hk/epd/english/greenrestaurant/law/law\\_application.html](https://www.epd.gov.hk/epd/english/greenrestaurant/law/law_application.html)

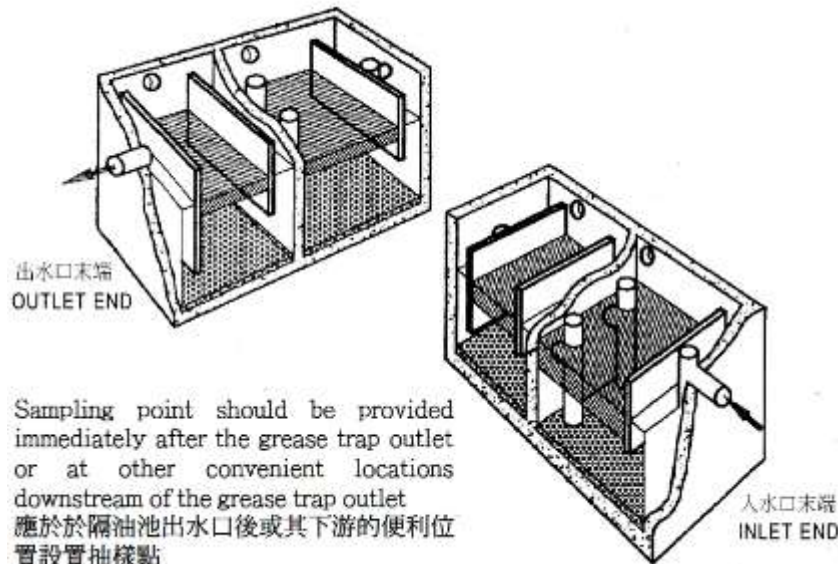


# 7. Reference Materials (4)

## Green Restaurant– Grease Traps for Restaurants and Food Processors

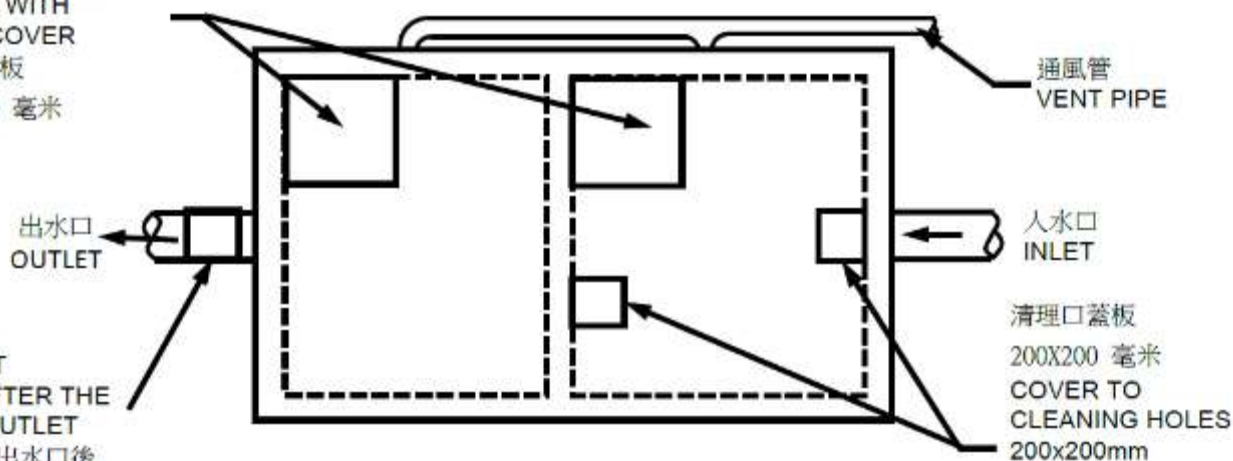


[https://www.epd.gov.hk/epd/english/enviro/meninhk/water/guide\\_ref/guide\\_wpc\\_gt.html](https://www.epd.gov.hk/epd/english/enviro/meninhk/water/guide_ref/guide_wpc_gt.html)



CLEAR OPENING FOR ACCESS  
500X500mm MIN. WITH  
LIGHT WEIGHT COVER  
出入口輕便活動蓋板  
最小尺寸 500X500 毫米

SAMPLING POINT  
IMMEDIATELY AFTER THE  
GREASE TRAP OUTLET  
抽樣點位於隔油池出水口後





# 7. Reference Materials (5)

## Regional Offices



[https://www.epd.gov.hk/epd/english/how\\_help/report\\_pollution/reportpollution\\_2.html](https://www.epd.gov.hk/epd/english/how_help/report_pollution/reportpollution_2.html)

Contacts of Regional Offices				
District	Regional Offices	Address	Tel No. / Faxline	E-mail Address
Kwun Tong, Wong Tai Sin, Sai Kung, Yau Tsim Mong & Kowloon City	Regional Office (East)	5/F., Nan Fung Commercial Centre, 19 Lam Lok Street, Kowloon Bay, Kowloon.	Tel: 2755 5518 Fax: 2756 8588	hotline_e@epd.gov.hk
Hong Kong Island & Islands	Regional Office (South)	2/F., Chinachem Exchange Square, 1 Hoi Wan Street, Quarry Bay, Hong Kong.	Tel: 2516 1718 Fax: 2960 1760	hotline_s@epd.gov.hk
Tuen Mun, Tsuen Wan, Kwai Tsing & Sham Shui Po	Regional Office (West)	8/F., Tsuen Wan Government Offices, 38 Sai Lau Kok Road, Tsuen Wan, New Territories.	Tel: 2417 6116 Fax: 2411 3073	hotline_w@epd.gov.hk
Yuen Long, Shatin, Tai Po & North	Regional Office (North)	10/F., Sha Tin Government Offices, No.1 Sheung Wo Che Road, Sha Tin, New Territories.	Tel: 2158 5757 Fax: 2685 1133	hotline_n@epd.gov.hk







Thank you !

