

## **Introduction**

Cleaning of commercial kitchen extraction systems is extremely important and if it is not done adequately, it can cause many problems which manifest themselves in a variety of ways including poor air quality which can lead to the shutting down of gas fired equipment.

The purpose of this document is to provide guidance and advice that members can pass onto kitchen operators.

## **Relevant Legislation, Regulations and Standards**

There is a surprisingly large number of standards and regulations that impact on kitchen ventilation.

- The Workplace (Health, Safety and Welfare) Regulations 1992 – these require an employer to provide effective and suitable ventilation in the workplace.
- Gas Safety (Installation and Use) Regulations 1998 – these require adequate supplies of fresh air to enable efficient combustion and also adequate extraction to remove products of combustion.
- Health and Safety at Work Act 1974 – this requires anyone in control of premises as a place of work to take reasonable measures to ensure that the premises, plant and equipment are safe and without risks to health.
- Environmental Protection Act 1990 – this requires local authorities to investigate the likely occurrence of statutory nuisance which can include any fumes of gases emitted from premises so as to be prejudicial to health or cause a nuisance.
- Food Safety (General Food Hygiene) Regulations 1995 – these require that there must be suitable and sufficient means of either natural or mechanical ventilation, and ventilation systems must be constructed as to enable filters and other parts requiring cleaning or replacement to be readily accessible.
- The Fire Precaution (Workplace) Regulations 1997 – these require that operators take all necessary precautions to minimise fire risk.
- IGEM/UP/19 Standard – this refers to gas fired equipment installations and stipulates the levels of CO<sub>2</sub> required to provide satisfactory air quality, the methods of measurement and the actions to be taken in cases of inadequate air quality which include shutting down and disconnection of appliances.
- B&ES DW172 Specification for Kitchen Ventilation Systems. In the absence of a formal standard this publication is accepted as a standard by all authorities.
- B&ES DW/144 Specification for Sheet metal ductwork. In the absence of a formal standard this publication is accepted as a standard by all authorities.
- B&ES TR/19 Guide to good practice – Internal cleanliness of ventilation systems.
- FPA RC44 Recommendations for fire risk assessment of catering extract ventilation.

## **The kitchen ventilation system**

Kitchen ventilation and extraction systems should be designed to

- Remove cooking fumes and odours at source.
- Remove excess hot air and bring in cool clean air to provide a comfortable working environment.
- Provide enough air for complete combustion at fired appliances and prevent the risk of CO accumulating.
- Be easy to clean.
- Be quiet and vibration free.

Various types of cooking generate grease with different characteristics, particularly relating to the ease of removal during cleaning, however, all are highly flammable. As extraction ducting is often routed through the building structure, it creates a potential risk of a fire in the kitchen rapidly spreading to other parts of the building. The implications of grease build up in ventilation systems are as follows:

- Build up of grease and other solids in ventilation systems can be a serious fire hazard.
- Build up of grease and other solids in ventilation systems can impact on the performance of the system.
- Build up of grease and other solids in ventilation systems can lead to the failure of components within the ventilation system.
- Build up of grease and other solids in ventilation systems can result in inadequate extraction leading to poor air quality with high levels of CO<sub>2</sub> and even CO.
- Build up of grease and other solids in ventilation systems can pose a vermin hazard

It is therefore extremely important that a ventilation system is designed to remove as much grease as possible within the canopy so as to prevent accumulation of grease and other contaminants in the ducting and on components such as fans, motors, sensors etc.

Grease removal is normally achieved by grease filters, sometimes combined with fine pre-filters. Grease filters should be cleaned regularly and fine pre-filters should be replaced frequently. Ducting should be fitted with access panels for inspection and cleaning. B&ES TR/19 gives detailed guidance on the construction and location of these.

### Advice for kitchen operators

Risk Assessment – The FPA document RC44, which is used by most insurance companies, states that the Regulatory Reform (Fire Safety) Order 2005 firmly transferred the onus of fire safety from the fire authority to the person responsible for the premises who must carry out a risk assessment and provides guidance on how this should be done.

Cleaning – The DEFRA document “Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems – January 2005” gives very detailed guidance on maintenance and cleaning of ventilation systems including suggested maximum limits for surface contaminants of 0.2 mm (mean average) or 0.5mm (any single measurement).

It is recommended that the following cleaning regime should be followed.

- A visual inspection of the ventilation system should be carried out **at least once a week**. All metal surfaces should be checked to ensure that there is no accumulation of grease or dirt and that there is no surface damage.
- Canopies and grease filters should be cleaned on a **daily** basis.
- Baffle type self draining grease filters and their grease collection drawers (containers) should be cleaned **at least once a week** (more often in kitchens that operate for more than 12 hours a day).
- Extract ductwork should be cleaned **regularly as follows**

Heavy Use	12-16 Hours Per Day	3 Monthly
Moderate Use	6-12 Hours Per Day	6 Monthly
Light Use	2-6 Hours Per Day	Annually

- Periodic (as recommended above) “deep hygiene cleaning” should be undertaken by a specialist contractor (See Appendix 1 advice on selecting a suitable contractor). All main ductwork runs and branches, included fitted equipment should be inspected and cleaned.
- All fans and motors should be maintained on a regular basis as recommended by the fan manufacturer.
- Ventilation grilles, where fitted should have easily removable cores to facilitate easy regular cleaning.

## How to clean baffle filters

There are several ways to clean baffle filters as follows:

- Hand or power washing - This is an effective, albeit tedious way to clean baffle grease filters. Follow these steps to clean a filter by hand
  - Remove filters from the canopy safely, if necessary using a suitable removal tool.
  - Place the filter in a sink filled with hot, soapy water. An alternative is to take the filter outside and power wash it.
  - Scrub with a non-abrasive sponge or scrubber. Avoid bleach and other harsh chemicals, since they can corrode the metal.
  - Dry the filters immediately after hand or power washing them and reinstall them in the canopy.
- Dishwashing - Save time by cleaning filters in the dishwasher. Follow these steps:
  - Remove the baffle grease filters from the canopy.
  - Place a filter in a suitable dishwasher rack (probably a cup rack).
  - Use normal dishwashing detergent. To avoid corrosion, never use bleach or harsh cleansers.
  - Make sure all residue is removed from the filter after the washing cycle is complete.
  - Dry the filter completely and reinstall it in the canopy.
- Soaking - A grease filter soak tank is an investment that saves both time and labour in the baffle filter cleaning process. Follow these steps to effectively soak filters:
  - Fill a soak tank with hot water, stopping 150mm below the top of the tank.
  - Add a non-corrosive, metal-safe cleaner designed for baffle type filters. The amount should be as recommended by the detergent manufacturer.
  - Remove the filters from the canopy and wipe off excess grease with a paper towel.
  - Place up to six filters in the soak tank and allow them to soak overnight.
  - In the morning, remove the filters from the tank, rinse them clean and they're ready for immediate use

## APPENDIX C

### Contractor selection

**C1.** The following qualification criteria should be considered when selecting specialist contractors.

**a) Experience**

- Number of years operation as ventilation hygiene specialist.
- Demonstration of track record with project references.
- Total number of field operatives directly employed full-time in ventilation hygiene works.

**b) Affiliation**

- Membership of appropriate trade bodies such as the HVCA, NADCA or similar.

**c) Quality Assurance**

- Work with quality systems or to accredited quality standards.
- Qualifications and technical training of staff.

**d) Health and Safety**

- Health and safety policy and description of safe methods of work specific to ventilation hygiene works.
- Records of training and competency.
- Availability of professional health and safety advice.
- Recognised awards.
- Safety/accident records.

**e) Insurance**

- Full details of any Professional Indemnity, Employers Liability, Public Liability and Contractors' All Risks Policy, clearly stating any limitations on cover.

**f) Financial**

- Demonstration of competence to handle contracts of proposed size in terms of finance and operational resources.