

# Food Safety Information

## FOOD HYGIENE

### KITCHEN VENTILATION INSTALLATIONS - ADVICE NOTES

1. It is hoped that these notes will help developers to comply with conditions on planning consents requiring the submission of odour and noise control schemes. Very often these schemes will require works that were not included in the original planning application, e.g. the erection of external ducting. These additional works may require planning permission and/or consent under Building Regulations. Any approval given by this Department cannot be taken as granting such permission or consent. Advice from the appropriate authority (i.e. the Director of Environment) should be sought in this respect.
2. Except in certain circumstances a kitchen ventilation system should incorporate a hood or canopy, suitable ductwork and an adequate fan or fans. When such a system is to be installed it is recommended that a specialist firm be employed to carry out this work.
3. **Canopy** - The canopy or hood must be constructed of suitable impervious material and should in normal circumstances incorporate suitable grease filters. The size and shape of the canopy must be such that it covers all the cooking equipment other than units such as microwave ovens and if possible should overlap the equipment by 300 mm (12 inches) all round. It is recommended that the underside of the canopy should be at a height of 2.06 metres (6ft. 9 ins.) above floor level. This will reduce the risk of head injury whilst still maintaining efficient ventilation.
4. **Access** - Adequate access to grease filters, fans and ducting is essential to permit regular (routine) maintenance and cleaning.
5. **Fan(s)** - The air flow rates provided by the fan(s) and the resultant movement of air across the underside of the canopy must be sufficient for the amount and type of cooking involved. Adequate provision must be fresh and from a suitable source or sources.

Where a variable speed control is provided and one of the lower speeds is to be used the fan should first be set to the maximum speed when it is switched on and run at this speed for approximately 30 seconds. This is to prevent the fan motor being burnt out.

The use of the number of air changes per hour in assessing the effectiveness of kitchen ventilation systems can be grossly unreliable due to the varying sizes of the kitchens in different catering establishments. A far better method of assessment is to calculate the rate of air flow in unit volume per unit time per unit area of canopy. An adequate standard for a canopy serving a complete range of cooking facilities would be approximately 375 litre/sec/m<sup>2</sup> (75 CFM/ft<sup>2</sup>) and in certain circumstances where cooking is on a small scale without frying or grilling, 300 litres/sec/m<sup>2</sup> (60 CFM/ft<sup>2</sup>) should be sufficient.



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For large scale grilling and frying, and in particular where a charcoal grill is in use, the ventilation rate should be at least 400 litre/sec/m<sup>2</sup>. (80 CFM/ft<sup>2</sup>).

(Litre/sec/m<sup>2</sup> = Litres per second square metre)

(CFM/ft<sup>2</sup> = Cubic feet per minute per square foot)

6. **Fan Noise** - The system must be designed and sited in such a way so as to prevent annoyance from fan noise. Suitable flexible connectors or anti-vibration mountings between the fan(s) and the ducting must be incorporated in the design. The fan must also be isolated from the structure or its supports by anti-vibration mountings. In many cases additional silencing will also be necessary. Purpose made silencers should be placed after the fan to prevent noise 'breaking through' the duct and to prevent it emerging from the outlet. Where fans are situated externally a silencer should also be placed before the fan to prevent 'breakout' noise. This silencer will also provide quieter working conditions in the kitchen. The siting of the fans inside the building can be considered as a possible means of minimising 'breakout' noise, but care is needed to ensure that disturbance is not caused to other occupiers of the building.

Similar consideration must be given to any fans providing replacement air.

7. **Ducting** - Where people will be walking beneath internal ducting the underside of such ducting should, where possible be at a height of no less than 2.06 metres (6ft. 9ins.) above floor level. The ducting must terminate externally at such a height and position as to prevent annoyance from cooking odours. Advice on an appropriate position can be obtained from the Environmental Health Officer concerned. It should be noted that planning permission is likely to be required for the erection of external ductwork.
8. **Activated Carbon Filtration** - When an external or internal duct to high level cannot be installed a system which incorporates activated carbon filtration might in some situations be considered. However, it is important to note that a considerable amount of space is needed for such a system. The carbon filter must be installed at a distance of at least 6 metres (20 ft.) from the cooking area to ensure that the temperature and humidity of the cooking fumes are sufficiently low when they pass through the filter. It should also be noted that the installation and running costs of an activated carbon filtration system are comparatively very high.

It is most important that an efficient grease filter and a suitable particulate pre-filter are included in the system. The grease filter must be regularly cleaned and the particulate pre-filter pads need to be regularly replaced to ensure that the activated carbon filter does not become contaminated by grease or dust.