Cartrige filters

Installed horizontally, catridge filters comprise a high velocity slot opening on to a series of baffles which cause air to change direction four times compared to only twicw in a conventional baffle filter. The cartridge filters are installed over the full length of the extract plenum and should be sloped to allow trapped grease to fall through a drain to grease drawer. These filters are intended for heavy grease loas. Having a higher velocity enables lower air volumes to be used. Air balancing is required to prevent carry over of grease.

Fine filtrarion;
A basic filtration system can be used to deal with a low intensity odour problem, but more usually will form a protective pre-treatment step before an activated carbon step.

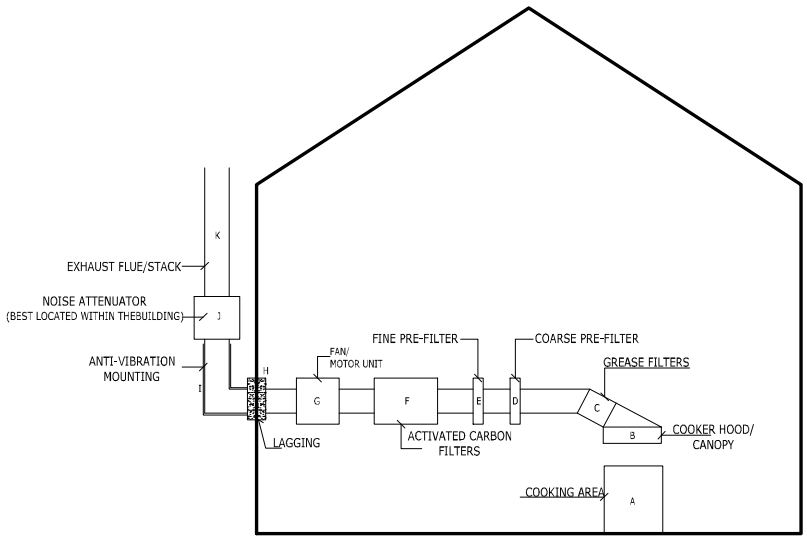
Recommendations for maintenance of odour control system
For a system employing fine filtration and carbon filtration;
- Change fine filters every two weeks
- Change carbon filters every 4 to 6 months

For a system employing ESP and oyher in line abatement systems:
- Clean every 2-6 months

Noise reduction methods for arious noise sources and transmission paths;
Reflected sound from walls, ceiling, and walls. Direct sound can be controlled by seecting qiuet equipment. Reflected sound is controlled by adding sound absorption to room and to ocation of equipment.

Noise reduction methods for various noise ources and transmission paths

Description	Noise reduction method
Direct sound radiated from sound source to ear. Reflected sound from walls, ceiling, and walls.	Direct sound can be controlled only by selecting quiet equipment. reflected sound is controlled by adding sound absorption to room and location of equipment.



SCHEMATIC DIAGRAM OF A TYPICAL KITCHEN VENTILAION SYSTEM

Stack
Inadequate height of the discharge stack is one of the main reasons the emissions from a kitchen gives rise to odour nuisance. The stack design is paramount to achieing good dispersion. Good stack dispersion reqires:
- The effective stack height(discarge height plus plume rise) must be high enough to ensure that adequate dulition takes place before the plume interacts with a receptor .
- Discharge velocity influences the plume rise and therefore the effective stack height. The effective stack height can be estimated from :

A= 3W.d/U
Where,
W(m/s) is the efflux speed at the chimney top
U(m/s) is the wind speed at the height of the stack
d(m) is the internal diameter of the stack
Ideally W/U should be greater than 4. If W/V is less than 1.5, then down wash will occur resulting in a reduced effective stack height.

- The discahrge to be outside the wake of nearby buildings. Discharging ventilation air below a roof ridge may result in excessive entrainment within building down wash. In certain situations, the use of high velocity discharge system can force the discarging plume out of the building wake.
- The flow to be unimpeded. Cowls can incrase the static pressure, noise, potential down draught and risk of re-entry of the exhaust back into the building. Alternative stack terminals are available and include:
- terminals without integral drains e.g. reducing cone, solid top cones; and
- terminals with integral drains e.g. open top cone and drain, induction types and sleeve type.
- Straight and vertical discharge.

Figure 4.5 shows examples of best stack design.
Guidance on stack requirements for commercial kitchens varies between Local Authorities.
The range of guidance issued by Local Authorities is summarised below:
- Guidance on the minimum stack height ranges from:
- 1 m above the eaves of the premises and/ or above any dormer window;
- 1m above ridge height of any building within 15 m ; and
- low level discarge should be avoided .
- The height of external ground level should be taken into account when setting stack height. This is particularly important on rising ground where houses may be located above the discharge .
- A stack should be positioned to be as far as possible from the nearest residential accommodation.
- A stack discharging into a semi-enclosed area such as a courtyard or the area between back additions should be avoided.
- Use of Chinaman's hats or other cowls is not recommended .
- The prevailing wind direction shoul also be considered in the ducting positioning.
- The ducting should be rigid in construction and resiliently mounted.
- Large section ducts may need bracing or stiffeners to prevent drumming.

In certain instances restriction on stack height might arise, for example:
- Where an A3 premises is a listed building and a visible stack is prohibited;
- Where an A3 premises is located within a conservation area and a visible stack is prohibited; and
- Operators of the A3 premises do not have legal right to attach a stack to upper floors of building.

Motor Frame Size and Type;

Code	Speed rev/min	Max. Pitch Angle(o)	Motor	Motor Rating (kW)	Full Load Current (A)	Starting Current d.o.l. (A)	Efficiency %	Power Factor cos
50 JM.BIF/20/4/6	1440	20	DA71MAC	0.37	1.1	4.9	69	0.71

22 HIGH STREET
HAVERHILL
CB9 8AR

NOTES 3

SCALE: 1/–@ A3 | REF. NO : 002.25/10
DATE: JAN.25 | DRG BY: S. AY -SAYAR DESIGN

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