



Extraction Report And Proposed Plans

April 2022

This report takes into account the particular instructions and requirement of our clients

Kitchen Extract System (Pizza Oven)

(Based on DEFRA 2005 "The Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems")

This Publication was withdrawn September 2007.

New Publication not yet released .

Report by Lewis Duct Clean

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Flow rate calculation method one

[illegible]

Client to confirm that cooking equipment is listed correctly

<u>Item</u>	<u>Friction loss (Pa)</u>
Baffle filters	100
Carbon cells (clean)	60
Type 4 grease filters	60
Synthetic Bag filter	60
Ductwork Route	20
	Total. 300 PA



Site Details

Report Aims

This report aims to outline the specific measures taken to control any increase in odor nuisance resulting from the proposed kitchen extract system.

It allocates a score to give an overall risk rating from three possible levels Low to Medium, High and Very High. Each of the four factors is scored according to the criteria above and a total "significance score" obtained. This score is used to assess the level of odour control required for the particular situation as follows:

Criteria	Score	Score	Details
Dispersion	Very poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s.
	Moderate	10	Discharging 1m above eaves at 10 -15 m/s.
	Good	5	Discharging 1m above ridge at 15 m/s.
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Fair	1	Closest sensitive receptor more than 100m from kitchen discharge.
Size of kitchen	Large	5	More than 100 covers or large sized take away
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away.
Cooking type (odour and grease loading)	Very high	10	Pub (high level of fried food), fried chicken, burgers or fish & chips.
	High	7	Kebab, Vietnamese, Thai or Indian.
	Medium	4	Cantonese, Japanese or Chinese.
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.



Impact Risk	Odour Control Requirement	Significance Score*
Low to Medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very high	Very high level odour control	More than 35

Impact Risk	Odour Control Requirement	Significance Score
High	High Levels Of Odour Control	31

Low to medium level control may include:

Fine filtration or electrostatic precipitation (ESP) followed by carbon filtration (carbon filters rated with a 0.1 second residence time).

Fine filtration followed by a counteractant/neutralising system to achieve the same level of control as 1.

High level odour control may include:

Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2-0.4 second residence time).

Fine filtration or ESP followed by a UV ozone system to achieve the same level of control as 1.

Very high level odour control may include:

Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.4-0.8 second).

Fine filtration or ESP followed by carbon filtration and by a counteractant/neutralising system to achieve the same level of control as 1.

Fine filtration or ESP followed by a UV ozone system to achieve the same level of control as 1.

Fine filtration or ESP followed by wet scrubbing to achieve the same level of control as 1. Maintenance must be carried out to ensure these performance levels are always achieved.

Odour Control Requirement –

In order to follow the DEFRA reports guidelines we would recommend:

High level odour control

Fine filtration or ESP followed by carbon filtration (**carbon filters rated with a 0.2 / 0.4 second residence time**).

Fine Filtration - Canopy Mesh

To prevent some on the grease/odour moving through the system

Fine Filtration -Mesh & Pre Bag Filters-

Catch small grease particles that pass through the coarse initial grease filters.

Carbon Filtration - Carbon Unit

To give dwell times of 0.2 - 0.4 seconds :

$0.6 \times 0.6 \times 0.6$ (1 x Activated Carbon Blocks 600 x 600 x 600) = 0.216

$0.216 \div 1.0 \text{ m}^3/\text{s}$ (Airflow) = **0.2 Seconds (Dwell Time)**



System / Filter Maintenance

Canopy Baffle Filters

Depending on the cooking volume of a particular kitchen, cleaning the baffle filters should be done either daily, weekly or once a month. Busy establishments like restaurants should consider cleaning the baffle filters daily or at least once every two days to ensure they are functioning at optimum levels at all times.

Grease Filters :

These are washable metal filters that are typically removed and cleaned by restaurant owners. A set of spares can be obtained to make this job more manageable, however a weekly wash is often acceptable dependant on the type and frequency of the cooking.

Pre Paper /Bag Filters :

These disposable secondary filters are designed to catch small grease particles that pass through the coarse initial grease filters. These filters offer protection to the Carbon filters that follow.

These filters should be changed at twice their initial resistance. The time period can vary depending on covers but it is commonly between 1-3 monthly.

Carbon Filters :

Carbon Filters take on gases rather than particulates making it difficult to determine their life, however typically they will last 6 months to a year.

We would also recommend that a full comprehensive clean is carried out to the Kitchen ventilation system on a 6 monthly basis our price to carry out the first clean to TR19 guidelines,. Deliverables include a ventilation system clean, to include all accessible ductwork, the inspection of all equipment, pre and post clean photographs (held electronically by us for one year and available on request), issue of a clean certificate, (which you may find is a requirement of your insurers) and suggested schedule for the next 12 months.

Site Specific Filter Replacements/Cleaning Recommendations

Filter Type	Cleaning/ Replacement Period
Mesh Canopy Filters	Cleaning Daily (In house).
Mesh Filter	Cleaned Weekly. Inspection on cleaning date. Replaced if levels of grease are excessive.
Synthetic Bag Filter	Replaced between 1/3 Months
Carbon Filters	Typically 6 monthly replacement. Inspection on cleaning date. Replaced if levels of grease are excessive.