

We Clean Air

Experts in Grease, Smoke and Odour Control

CPD Seminars

Plasma Clean Air regularly host seminars for continuing professional development (CPD). We are experts in kitchen ventilation grease smoke, and odour control, our seminars offer practical advice on improving air quality in a number of settings. The courses are certified by industry body Chartered Institute of Building Services Engineers (CIBSE). **Contact us if you would like to request a free online CPD seminar.**

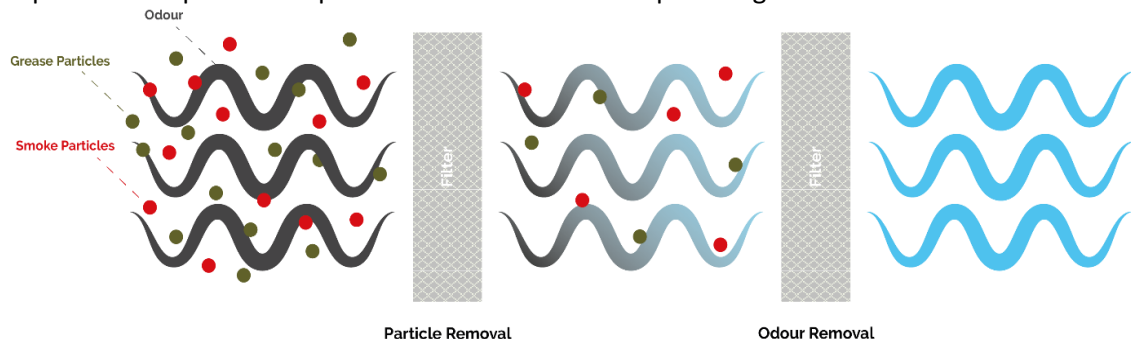
Our Approach to Commercial Kitchen Odour Control

The recommended equipment shall be compliant with EMAQ+, DEFRA and Building & Engineering Services Association (BESA) DW/172 section 24. **We can supply EMAQ+ odour risk assessments on request** to aid with planning applications and ensure that the most suitable odour control solution is selected.

When incorporating odour control equipment within a kitchen extract system it is important to recognise that there are two phases of contamination:

1. Particulate Phase (Grease & Smoke)
2. Gaseous Phase (Cooking Odours)

Where possible the particulate phase needs to be removed prior to gaseous odour removal.



Key Design Criteria

- Interlock equipment with air flow either through fan control or DPS.
- Ensure that fan has capacity to handle additional pressure drop.
- Check linear velocity through main duct run (6-9m/s) to ensure that there is sufficient dwell time in equipment.

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Risk Assessment for Odour

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

Impact Risk	Odour Control Requirement	Significance Score
Low/Medium	Low Level Odour Control	Less than 20
High	High Level Odour Control	20-35
Very High	Very High-Level Odour Control	More than 35

Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Rating	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 -15m/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
	Far	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/grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips. Turkish, Middle Eastern or any premises cooking with solid fuel.

	High	7	Vietnamese, Thai, Indian, Japanese, Chinese, Steakhouse
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc), Tea rooms.

Site Details

Client	SK Design Consultants
Site Address	349 Oxford Rd, Reading RG30 1AY

Below is an evaluation for the site based on the criteria on the previous page.

Criteria	Rating	Score	Details/ Comments
Dispersion	Moderate	10	Discharging 1m above eaves at 10 -15m/s
Proximity of Receptors	Medium	10	Closest sensitive receptor within 20m from kitchen discharge
Size of Kitchen	Medium	3	Between 30 and 100 covers or medium sized take away
Cooking Type	Very High	10	Iraq style cooking, similar to Turkish style cooking.

Impact Risk	Odour Control Requirement	Significance Score
High	High Level Odour Control	33

Plasma Clean Air Recommendation

Based on the outcome of the odour risk assessment, the development has been classified as requiring a high level of odour control. In accordance with the principles set out within EMAQ+ guidance, and taking into account the proposed kitchen ventilation design, a multi-stage filtration system is recommended.

1. Canopy mounted Ecofleece Filters

We propose installing high efficiency canopy-mounted Ecofleece filters. These capture high levels of grease and moisture at the source, keeping the canopy and ductwork clean while enhancing gaseous odour removal. Ecofleece filters are user-friendly, with biodegradable wool pads that can be disposed of with general waste.

2. Electrostatic Precipitation (ESP)

An Electrostatic Precipitator (ESP) should be installed as the primary filtration stage to remove grease and smoke particulate generated during the cooking process. Given that the kitchen size has scored medium in the assessment, a single-pass ESP unit is considered sufficient for effective particulate removal. This stage will also protect downstream filtration equipment.

3. **Activated Carbon Filtration**

Following ESP filtration, the system should incorporate activated carbon filtration designed to remove gaseous odours. EMAQ+ guidance indicates that carbon dwell time should not fall below 0.2 seconds.

The in-duct ESP and carbon filtration systems must be installed within a horizontal section of ductwork on the flat roof.

At this stage, the kitchen extract airflow rate has not been confirmed. Therefore, we have provided an indicative odour control filtration selection based on a typical medium-sized takeaway, assuming an extract rate of $<1 \text{ m}^3/\text{s}$. On this basis, we recommend the following PCA equipment:

- 8No Canopy mounted Ecofleece Filters
- ESP 5,040
- Carbon filtration: 6 no. Sitesafe Discarbs

Once the actual kitchen extract flow rate is confirmed, this selection will need to be reviewed and verified. Higher extract rates may require larger or additional filtration capacity.

Service & Maintenance

Maintenance must be carried out to ensure EMAQ+/DEFRA conformance for the selected equipment. Plasma Clean Air warranties are valid based on planned preventative maintenance of the equipment. The recommended maintenance schedule will be confirmed post commissioning when the warranty is enabled, or we can supply earlier if required. Plasma Clean Air is committed to providing excellence at every level. Our grease, smoke and odour control solutions are designed and manufactured to the highest standards and maintained by our own qualified service engineers. It is not only odour control equipment we can maintain, but we also offer a full range of commercial kitchen services to ensure maintain a compliant operation.

Additional Maintenance Services Available

- **TR19 Canopy & Extract Cleaning** - As an approved member of BESCA, we carry out canopy and extract cleaning services to TR19 specification and provide a full report and certificate on completion.
- **Commercial Kitchen Cleaning** - Regular deep cleaning of a commercial kitchen is essential for food hygiene and safety reasons. Build-up of food, grease, debris, and dust in your kitchen can create a hazardous environment and attract unwanted vermin.

We trust the foregoing is to your satisfaction, however, should you have any queries, please contact the writer at your earliest convenience.

Yours sincerely
For Plasma Clean Air Ltd.

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Sales Manager