

# Kiremko Frying Range extraction designed in conjunction with the Defra guidance report.

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## **Report required for:**

113 and 115-117 Egerton Street  
Blackpool FY1 2NL

The Kiremko Frying range and associated duct is shown on the attached information.

## **Risk assessment and score:**

Using the Defra guide a score can be created to determine the level of control required for the abatement of noise and odour. The score can be reached by following the following chart.

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

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

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.
	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 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.

This property is situated on the main retail shopping complex of the area with a varied mix of commercial properties. There are also residential properties situated above the site.

Using the above chart a score of **28** has been given to the property based on the 4 main criteria.

Dispersion	Good	5
Proximity of receptors	Close	10
Size of Kitchen	Medium	3
Cooking Type	Fish & Chips	10

The report requires that the extraction has a high level of odour control.

## **Control Measures.**

### **Grease:**

The Kiremko frying range has an integrated extract system that removes odour and cooking emulsion (a combination of oil, fat and water vapour) from above the open pans. The position of the impact filters and the extract rate ensures that the cooking vapours do not rise into the shop.

The stainless steel impact filters are designed to slow the extracted air as it passes through two 90° turns and thus depositing the heaviest of the emulsion particles into a stainless steel plenum used to collect and solidify them. This removes approximately 60% of the emulsion particles and prevents them entering the extraction system. It is, however, inevitable that most of the remaining particles are deposited within the extract system and it is for this reason that grease traps are installed at the base of each riser. The grease traps generally have large inspection hatches and collection drawers to facilitate cleaning and disposal of the resultant grease.

In addition a fine filtration system is added in the form of an ESP 4500E supplied by Purified Air. The unit will eliminate 98% of all oil grease and smoke particles within the system.

### **Odour:**

The odour will be controlled by a UV-O 1000 unit. The UVO range uses UV-C technology to produce ozone and hydroxyl free radicals to oxidise cooking odours through a process of ozonolysis. Using this method doesn't increase the resistance in the system allowing the duct to be not quite as big as if carbon blocks were used.

### **Extract fan and Motor:**

The fan unit will be a Helios 560/4 Gigabox which is powered by a 1.1Kw motor and running at 1450 rpm. Primarily this unit is used because the efficient backward curved blade and direct drive allows for easy and regular maintenance in a potentially greasy and difficult environment. The unit is balanced to achieve minimal noise levels and is mounted on anti-vibration fixings to minimise noise transfer. To minimise noise transfer through the ductwork the inlet and outlet to the fan are connected by flexible couplings. The sound curves can be supplied upon request.

The exact fan will be specified once the range and complete duct route has been confirmed and therefore total air volume and resistance has been calculated.

### **Termination:**

The final termination will be a high velocity jet cowl designed to expel the air to atmosphere. The duct will be 450mm spiral on the basis of range supplied.

## Maintenance

The system requires a maintenance schedule to allow it to perform to its optimum efficiency at all times. A cleaning and maintenance schedule should be drawn up as follows

Kiremko high impact baffle filter;           washed daily

Sump box checked weekly;                    Remove grease as required

ESP 4500E – Purified Air                    Wash pre filter weekly  
  Ionised collector plates as required dependant on volume of business

UVO -1000                                       Lamps to be replaced annually.

Ductwork            Full clean required annually or more frequent dependant on business volume

\* Purified Air offer a replacement filter service on request.

## Conclusion

This extract system has been designed specifically to conform with the strict guidelines that have been set down by DEFRA.