

329a Station Road, Bagworth LE67 1BL

Extraction System

Extractor Hood:



- Extractor hood set above the cooking equipment.
- The extractor proposed will be built to incorporate first stage stainless steel baffle grease filters and a grease drip tray as a first stage of extraction of heavy grease particles.
- The cooker canopy is designed to be sufficiently long and wide to cover all cooking ranges.
- The canopy has been designed to be of sufficient height to enable easy working, on the ranges, whilst low enough to entrain all odours/steam generated by the cooking.
- The canopy is constructed from Stainless Steel to enable easy cleaning.
- The canopy will be fitted with primary grease filters, of a re-usable wire-wool/mesh type design. There will be sufficient primary grease filters fitted to cover the complete length of the canopy face above the cooking ranges.
- Primary grease filters will be cleaned daily. Given the comparative cheap cost of these filters, we plan to buy a second set of filters so that they can be rotated daily, so that one-set is always in use whilst the second set is being cleaned.
- The extraction system is to be designed to ensure that the velocity of gases through these filters enables sufficient residence time to optimise grease removal; whilst enabling 25-30 air changes per hour of the kitchen air.
- Ventilation air inlets will be provided to the kitchen, designed to allow air ingress but located/located to prevent the direct release of odours out of the kitchen.

Ducting:



- Stainless Steel construction connecting each part of the system.
- The number of bends in the system have been minimised so as not to impede the flow of air and effectiveness of the system.
- All pipework and bends are designed to be leak free and prevent air ingress into the system.
- All internal surfaces are designed to be smooth.
- All Pipework above ceiling level will be well insulated to minimise heat loss, thereby maximising thermal buoyancy of the discharge.
- The flue is positioned and fixed to minimise the generation and effects of vibration and noise. Such fixings include anti-vibration mounts and incorporation of flexible couplings, silencers etc. in the ductwork to control noise.

Main Filter:



- 1025mm Steel case with grease tray and slotted Carbon Cell Filter locations.
- The disposable activated carbon filter panel is designed to be fitted into duct mounted casings to provide the required contact time and airflow.
- Designed to be changed every four months and returned to the manufacturer for rejuvenation.
- The panels are generally manufactured using the bonding process to provide a rigid panel which is framed in a metal channel. The panel is finished in a fabric facia which minimises the dusting from the panel.
- For Food cooking odours, a contact time of 0.2 to 0.3 seconds with the carbon filter is recommended to ensure effective odour control, which will effectively reduce the concentrations of absorbable contaminants between approximately 80% - 90%.
- Activated Carbon Filter
- Maximum Operating Humidity 80% RH
- Maximum Operating Temperature: 40 Deg C
- 0.2 to 0.3 Second Contact Time
- Reduction in absorbable contaminants (odour & grease) 80% to 90%
- The activated carbon filtration has been designed to be located at a sufficient distance along the duct run, to prevent the heat from the cooking reducing the efficiency of the filtration.
- The carbon Filter system will be correctly installed, in the correct direction of flow and orientation.
- The filter housing is designed to ensure ease of access for maintenance and to provide a good seal around the filters to prevent gases bypassing the filters, rendering them ineffective.
- The internal surfaces of the filter housing will be cleaned monthly.
- The gas flow rates, through the filters, have been matched to the respective retention time of each filter to achieve optimum efficiency of the filters. It is thoroughly understood how critical it is to achieve optimum efficiency to effectively remove grease and odour and to prevent breakthrough of grease and odour, by too great a flow. Incorrect flow rates will reduce filter performance.

Silencers:



- Attenuator construction comprises a pre-galvanised sheet steel spiral wound outer casing, manufactured in accordance with HVCA DW144 specification, with circular spigoted end caps. The inner bore is manufactured from pre-galvanised and perforated spiral wound steel tube, retaining a 50mm thick scrim faced 45 kg/cu.m acoustic media.
- This type of attenuator offer minimal resistance to airflow and provides adequate baffling to sound at both ends of the system so that noise is recued to acceptable limits at the entry point of the extractor hood, exit point of the Jet Cowl and discharge from the surrounding surfaces of the ducting pipework system.

Fan :



The fan is of cylindrical cased axial fan fitted with aluminium impellers and manufactured from high grade rolled galvanised steel and protected against corrosion by cataforesis primer and black polyester paint finish.

Fitted with 2 contra rotating complementary impellers manufactured from die-cast aluminium. All models are supplied with pre-wired wiring junction box located on the outside of the fan casing for easy wiring access.

- Three phase 4 poles motors.
- Motor is IP65, Class F insulation rated, equipped with thermal protection.
- Three phase motor suitable for inverter control for further energy conservation.
- Electrical supplies: Three phase 230/400V-50Hz.
- Working temperatures from -40°C up to 70°C.
- The extraction motor is correctly rated for the application and at the correct speed/flow rate to achieve optimum performance of the filtration.
- The extraction motor will be cleaned and maintained in accordance with the manufacturer specifications.
- The motor controller will be located in the kitchen and be two speed, adjusted so that the speed settings correlate to and achieve the optimum flow rates of the odour control system.
- Noise control has been designed to be implemented (see Silencers), with in-line acoustic absorbers.

Other Considerations:

The noise levels from a person standing on ground level adjacent to the premises are expected to be between 35 and 40 Db as advised by the ventilation specialist for our system specification.

Maintenance

The entire system will be serviced and fully checked every 12 months by a specialist extraction cleaning and maintenance company and the filters changed in accordance with manufacturers guidelines.

Conclusion

The perception of odour is a subjective issue and will vary significantly between individuals.

Many of the odour emissions from cooking activities are unavoidable and their control and dispersal will be dependent upon many factors, including maintenance and operational efficiency of the extraction system, type of cooking activities undertaken, position of the extractor duct and weather conditions.

The above proposed system will assure a long term effective solution to odour, grease and noise control and the carbon filters will be changed in accordance with manufacturers requirements to ensure the system continues to operate efficiently and cleanly.

Enclosed with this application please find :

1. Extraction Plans incorporating:
 - Existing Front, {ŠŒŰ12Y and Roof Elevations
 - Proposed Front, {ŠŒŰ12Y and Roof Elevations
 - Proposed layout of the extraction system
 - Proposed layout of the Restaurant premises
2. Detailed Shop layout
3. Site Location Plan