



HVAC Design, Management & Installation Specialists

JJR Services UK Ltd

KITCHEN EXTRACT SPECIFICATION

In support of Planning Application by

MFG

For a Hot Food Takeaway offer in existing

Sales Building

At

Baglan Moor

August 2025

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KITCHEN EXTRACT SPECIFICATION

Note: The below specification is in line with latest regulations and BK specification. However, some figures could change as the design progresses, the principle however will remain the same.

Design & Specification

Oven Requiring Extract

Appliance 1:

Method Of Extraction:

Usage:

Required Extract Ventilation:

Required Make up Air Volume:

Connection Type:

Broiler

Mechanical Extract via High Temp Motor out of stream exhaust fan.

high Usage Electric (or) Gas fired oven for Cooking.

0.4m³/s +20% (tbc by Kitchen contractor)

0.3m³/s

Hood Over Oven

Appliance 2:

Method Of Extraction:

Usage:

Required Extract Ventilation:

Required Make up Air Volume:

Connection Type:

4 Vat Fryer

Mechanical Extract via High Temp Motor out of stream exhaust fan.

High Usage Gas fired Fryers for cooking.

0.40m³/s +20% (tbc by Kitchen contractor)

0.3m³/s

Hood Over Oven

Fan Data:-

Extract Fan:

Airflow Pressure drop:

Supply:

Noise Output at Terminal:

Weight:

Dimensions:

Target Noise output at Terminal:

High Temperature Motor out of stream Kitchen extract Fan.

1.0m³/s @ 800pa set on speed 4 of 5

415v/3ph/50hz

46dba @ 3m

99Kg

700 x 700 x 720mm

TBC by Acoustic specialist employed by others.

Makeup Air:

To meet Kitchen extract requirements, make up air must be introduced to the Kitchen by means of supply air rated at 85% of the extract rate to create a negative pressure

Supply air fan

Airflow pressure Drop

Noise Output at Terminal:

Weight:

Dimensions:

Target Noise output at Terminal:

Internal Ceiling Void AHU c/w Heater battery section

0.8m³/s @ 300pa

45dba @ 3m

52.5Kg

670 x 670 x 620mm

TBC by Acoustic specialist employed by others.

Ductwork

Duct Type:

Duct Size:

Fire Rating:

DW172 Specification Kitchen Extract Duct

400mm x 400mm

Firmac 60 Fire Rated ductwork would be installed offering 1 hour fire protection.

Filtration:

Each Canopy will be installed with Stainless Steel Baffles filters designed to collect grease from the air stream.

Grease, Odour & smoke Control: 1 x ESP/UV/Ozone induction system would be installed to achieve 95% reduction in emissions from the Kitchen extract system. On going maintenance is essential and will be carried out to suite the running of the restaurant.

Noise Control:

We have assumed at this stage that due to the low noise rating of the fan at 46DbA @ 3m, no additional acoustic measures are required. (TBC)

Terminal:

Vertical Discharge at above roof level to disperse stale air

Maintenance & Access: Access Hatches in Ductwork would be installed at every change of direction and every 1.2m intervals along straight lengths.
Baffle Filters will be cleaned every night.
Ductwork would be cleaned bi-annually minimum. (Dependant on use)
ESP/UV/Ozone system would be cleaned Bi Monthly (More if necessary)

General Specification

ITEM

1.01 Kitchen Extract

Main kitchen extract fan sized to suit the total extraction requirements of the kitchen ovens / hoods + 20%

The fan will be a High Temp Kitchen Extract fan designed for hostile air environments. Whereas the motor is out of the air stream in a cooler environment. The Fan is to be suitable for temperatures up to 120 Degrees Celsius.

The motor is to be foot mounted, externally on a "Big Foot" style system, totally enclosed metric type IP55. With sealed for life bearings, standard industrial paint finish and design for external use.

The specified fan will be a backward curve centrifugal fan suitable for use with high temperature grease laden air.

The fan will be controlled to only operate whilst the building is occupied via the HVAC control panel and main time clock.

ITEM

1.02 Kitchen Extract Ductwork – 1 Hour Fire Rated

All kitchen extract ductwork within the building shall be 2mm Mild Steel, with continuous lock form throughout, with flanges & bolts c/w high temp gaskets and high temp sealer to ensure joints are sealed.

It is preferred that kitchen extract ductwork should fall towards the extract canopy or an approved grease reservoir at the rate of 6 mm per 300 mm horizontal run (1 in 50).

All elbows on the ductwork shall be radius type with 1.5 duct width radius to the centre line.

Ducts shall not contain any dampers, baffles or any obstruction except where specified in writing by the Local Authority. Include the requisite duct access doors at a maximum spacing of 1.2 metre centres. Size and location to suit the cleaning of all interior surfaces of ducts. Doors shall be furnished with a non-adhesive grease seal and where possible shall be located on the duct sides. These access doors are to be of sufficient size to allow for the internal cleaning of the ductwork in all positions and installed with Firemac 60 to ensure additional fire rating.

ITEM

1.03 Silencers (where required, but avoided where necessary)

Silencers are to be selected and manufactured by an acoustic specialist employed by JJR Services.

The Company will design and select filters to suit all aspects of the project with the primary objective of reducing noise output at the external termination point to a pre-determined level. NB Predetermined level to be determined by an acoustic survey and building control

The Silencers are to be suitable for high temperature applications and general Kitchen Extract Environment.

Cont....

ITEM

1.04 Control

All the HVAC plant will be controlled through a bespoke panel to include the following as a minimum:-

- 24hr 7 day a week time clock
- Fresh Air Control Input Control
- Kitchen Extract Control
- Kitchen extract Air Flow Interlock.
- Toilet Extract Control
- Solenoid Gas valve interlock. (Where gas is installed)
- Push Button Interlock.

The panel will be installed in an accessible location in the back of house area.