

Kitchen Fan Canopy

When selecting a suitable fan for kitchen extract the following factors should be considered:

Design criteria as set out in DW172

The "Thermal Convection Method". Basically, this is using the cooking equipment area in m^2 x the cooking equipment "coefficient" x canopy factors to give the required air volume.

However, it is considered acceptable at quote stage only to use the "Face Velocity Method", which is calculated for wall canopies by using the canopy length x the canopy width x loading.

1. For Light Loading, 0.25m/s.

Examples of light loading include – steaming ovens – boiling pans – bians marie – and stock pot stoves

2. For Medium Loading, 0.35m/s.

Examples of medium loading include – deep fat fryers – bratt pans – solid and open top ranges and griddles

3. For Heavy Loading, 0.5m/s.

Examples of heavy loading includes – chargrills – mesquite and specialist boiler units.

Typical wall canopy example:

3m x 1.2m by medium loading which is 0.35m/s as shown above.

Therefore air volume would equal 1.26m³/s

Once the air flow requirement is determined, the system pressure should be calculated. Factors that will need to be included in the pressure calculation are:

1. Number size and type of grease filters fitted in the canopy
2. Duct system layout including all bends
3. Odour control requirements
4. Noise control requirements

Odour control requirements as defined by DEFRA.

The main odour control options are:

- Fine or pre-filters
- Electrostatic precipitator
- Carbon filters
- UV ozone system

Depending on the type of cooking, will determine the type of odour control required and thus the pressure total the fan will have to overcome.

Kitchen Canopy

Complete Solutions

Noise Control as stated in BS8233

Internal noise level should not exceed 30dB (A) (good) or 35dB (A) (acceptable)
External noise level should not exceed 45dB (A) at the closest sensitive point.

Depending on the odour and fan selection the amount of noise control can be determined and thus the total pressure the fan will have to overcome.

There are no typical air volume or pressure requirements for wall or island canopies, it is however not unusual to see air volumes between 1m³/s and 10m³/s and pressure requirements between 100Pa and 1000Pa

Flakt Woods fans below show a good cross section suited to kitchen ventilation.

JM Aerofoil

Are a cost effective solution suited to low – medium pressure systems with acceptable noise levels

JM Aerofoil Maxfan

Is a cost effective solution suited to medium – high pressure systems, but may require some form of noise control.

Axcent 3/PowerBox/Greasefighter

Are suited on anything from low – high pressure systems and will generally have a lower starting point noise level, when compared with the JM and JM Maxfan.

The Greasefighter also has the advantage of an externally located motor out of air stream with a maximum working temperature of 80°C.

Other options to be considered:

- JMP Plate Fan
- 315-630mm 4 Pole 1φ (pages 102-105)
- JM Aerofoil
- 315-1000mm 2 & 4 Pole 3φ (pages 9-23)
- Bifurcated fans
- 150-630mm 2 & 4 Pole, 1 & 3 phase,
- featuring an externally located motor out of air stream and a maximum temperature rating of 200°C (pages 34-41)

The advantage of using Flakt Woods for your **Kitchen Canopy Solutions** is the *Next Day availability* and product range flexibility to meet all possible requirements.



