

Specifications & Useful Data:

Sizing Canopies

Typically the underside of a canopy should be between 2000mm and 2100mm affl. (Note: In instances where canopies are to be mounted higher than this then the overhang dimensions should be increased by 100mm for every 100mm above 2100mm affl.)

When determining the plan dimensions of any canopy it is important that it is large enough to provide adequate overhang to the cooking equipment.

Typically overhangs to allow are 300mm to each free side. (Note: For certain types of steaming appliances and baking ovens this should be increased to a min. of 600mm to cope with the opening arc of the appliance door.)

Calculating Extract Duties

According to HVCA DW/172 Specification for Kitchen Ventilation Systems 'The Thermal Convection Method' of calculation should be the only method used.

Other methods have been included in this document (DW/172) for use only when insufficient information is available at the design stage.'

Thermal Convection Method

This method follows the procedure covered in the CIBSE "Guide B" expanded to include a wider range of equipment and works on the principle of each appliance having an allocated thermal convection co-efficient (air to be extracted in m³/s per m² of appliance) which are then totalled and then 'factored' for the type of canopy proposed.

Face Velocity Method

(This is a provisional method when there is insufficient information to enable a calculation by the Thermal Convection Method.)

This method works by multiplying a 'notional' capture velocity, in m/s, to the total plan area of the proposed canopy, in m².

Light loading - 0.25m/s. (Typically steaming ovens, boiling pans, bain marie & stock-pot stoves).

Medium loading - 0.35m/s. (Typically deep fat fryers, bratt pans, solid & open top ranges & griddles).

Heavy loading - 0.5m/s. (Typically chargrills, mesquite & specialist broiler units).

Air Change Method

(This is a provisional method when there is insufficient information to enable a calculation by the Thermal Convection Method.)

These can vary widely dependent on a number of factors and therefore not recommended as a method of calculation.

Whilst 40 air changes, per hour, should be taken as a minimum for comfort, in the absence of any other information, it is not unusual for rates as high as 60 to 120 to be encountered when high output equipment in densely located into a relatively small kitchen area.

Materials

According to HVCA DW/172 Specification for Kitchen Ventilation Systems 'The only material to be used in the fabrication of canopies, in accordance with this specification, shall be type 304 ultra fine grained stainless steel.'

Further Information, Standards & Documents

CIBSE Guide B2: Ventilation & air conditioning.
(Requirements & Systems equipment & Control.)

HVCA DW/172 Specification for Kitchen Ventilation Systems.

HVCA DW/144 Specification for Sheet Metal Ductwork.

BS 6173:2009 Specification for installation & maintenance of gas fired catering appliances for use in all types of catering establishments.

HSE CAIS10: Ventilation of Kitchens in Catering Establishments.

HSE CAIS23: Gas Safety in Catering & Hospitality.

