



EXHAUST HOODS

**GUIDELINES FOR FOOD
BUSINESSES**

**CITY OF WANNEROO
HEALTH SERVICES**

Last Updated – January 2013

1.0 INTRODUCTION

The following guidelines set out the requirements for the design, construction and installation of kitchen exhaust hoods in food premises within the City of Wanneroo.

This information is provided as a guide only. For complete details please refer to Australian Standard 1668.2-1991

2.0 HEALTH LEGISLATION

- (1) The Food Act 2008 and Food Regulations 2009 requires the approving authority (Local Government) to assess the suitability of a premises for carrying on a food business and to ensure it complies with the Food Standards Code 3.2.3 Food premises and Equipment. The National Construction Code requires that exhaust hoods, where required, must comply with AS 1668.2-1991.
- (2) Australian Standard AS 1668.2-1991 entitled "The use of mechanical ventilation and air-conditioning in buildings Part 2: Mechanical ventilation for acceptable indoor-air quality", published by the Standards Association of Australia, sets out the requirements for the design, construction and installation of kitchen exhaust hoods.

3.0 WHEN IS A KITCHEN EXHAUST HOOD REQUIRED?

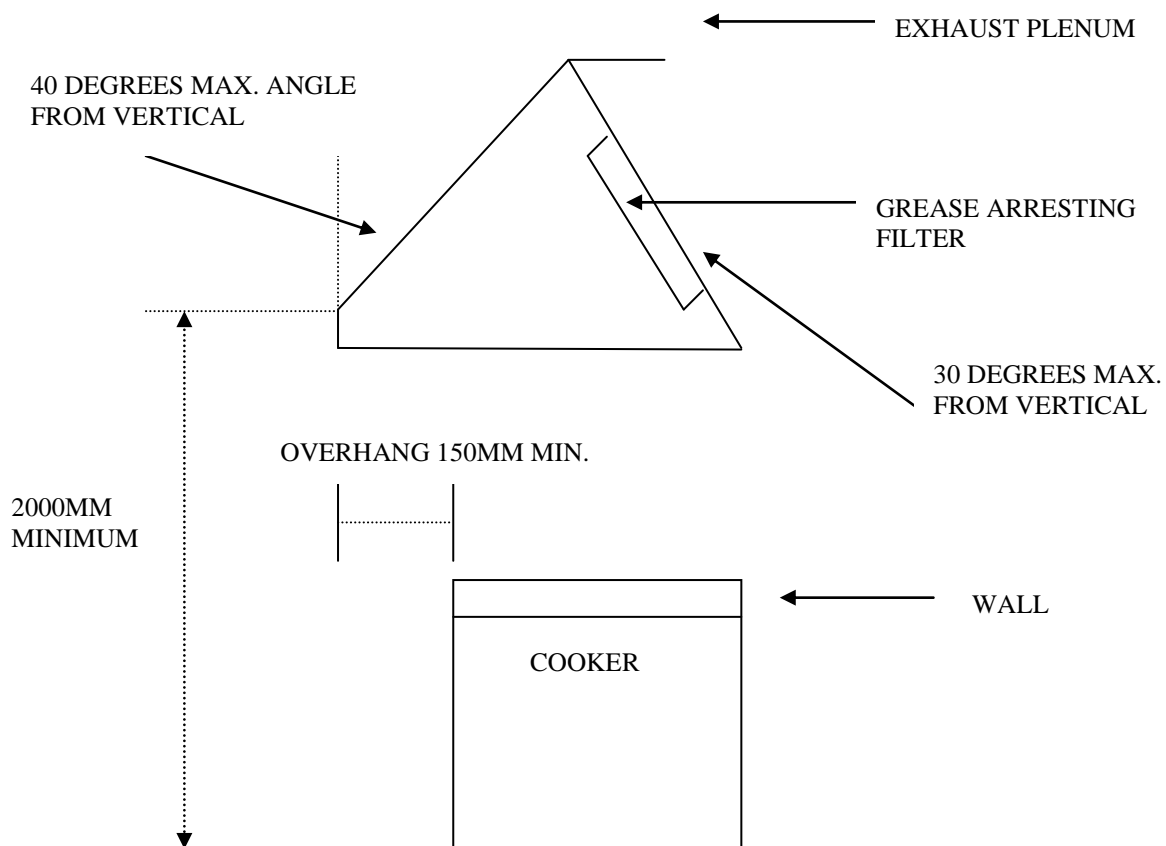
A kitchen exhaust hood/canopy is required to be installed in a food premises in the following circumstances:

- (a) the cooking appliances have a total maximum power input of more than 8kW (electrical);
- (b) the cooking appliances have a total gas input of 29MJ/h (gas);
- (c) the cooking appliances have a total maximum power input of more than 0.5kW/M² (1.8MJ/M² for gas appliances) of total floor area of the kitchen; or
- (d) the local government body deems the installation of a kitchen exhaust hood to be appropriate due to the circumstances.

4.0 APPROVAL

- (1) Prior to the fabrication and installation of any kitchen exhaust system in a food premises, plans and specifications must be submitted to Council's Health Services for approval.
- (2) The exhaust system cannot be used until the exhaust canopy has been certified by a qualified mechanical services engineer or other suitable qualified persons as deemed by the Health Services of the City of Wanneroo.

5.0 CONSTRUCTION REQUIREMENTS



A STANDARD EXHAUST CANOPY (Not to Scale)

5.1 ALL EXHAUST HOODS

- (a) Hoods shall be manufactured of rigid, impervious, hard faced, non-combustible material such as steel or stainless steel, reinforced where necessary to provide stability and rigidity with smooth faced, liquid tight seams and joints made by approved methods such as:
 - (i) continuous welding
 - (ii) grooving or lapping, riveting and continuous soldering; or
 - (iii) continuous jointing and sealing with a compound such as silicone rubber which is unaffected by grease, water or cleaning agents.
- (b) Exhaust openings shall be designed to ensure uniform capture velocity is maintained and to prevent condensate falling through the exhaust opening. They shall not be more than 500 mm from the exhaust plenum extremities, not more than one (1) metre apart and a minimum width of 75 mm to permit access into the exhaust plenum for cleaning purposes.
- (c) Light fitting within the canopy shall be flush mounted and be free of any obtrusions.
- (d) A signal light or other indicator shall be provided on the external surfaces of the hood or nearby to indicate whether the system is operating.
- (e) Where the exhaust hood abuts a wall, the back and/or end shall be unsheeted so that the existing wall forms part of the hood.

- (f) A condensation gutter shall be provided around the base of the hood not less than 50 mm wide and 25 mm deep with 25 mm diameter drainage holes fitted with removable screw caps.

5.2 EXHAUST HOODS WHERE GREASE VAPOUR IS PRESENT

IN ADDITION TO THE PRECEDING, where grease vapour is likely to be generated:

- (a) Grease arresting filters shall be incorporated in the design as follows:
- (i) The filter holding frame shall be constructed of a rigid non combustible material.
 - (ii) The number, size and distribution of the filters shall be such that the air temperature and flow rate through each filter is within the manufacturer's design limits.
 - (iii) The filter area required is calculated in accordance with the following:
Filter Area (m²) = $\frac{\text{Volume of air exhausted m}^3}{\text{rated capacity of the filter m}^3/\text{min}}$
Where: Volume of air exhausted = area of canopy (length x width) x required face velocity of the hood.
 - (iv) The filters shall be easily removable by hand while at the same time being snug fitting to prevent significant perimeter leakage.
 - (v) Provision shall be made for grease draining from the filters to be collected and disposed of without any spillage, eg. a channel to convey grease into the hood gutter.
 - (vi) The filters and the filter retaining devices shall not project beyond the surface of the hood exposed to the surface being ventilated.
 - (vii) Unless otherwise approved, the faces of filters shall be either vertical or sloped at an angle not greater than 30 degrees from the vertical.
- (b) All internal hood surfaces exposed to the appliance being ventilated shall be sloped at an angle not greater than 40° from the vertical unless designed to prevent condensation on such surfaces.
- (c) In a canopy type exhaust hood, the inside edge of the grease gutter shall not extend less than 150 mm beyond the perimeter of the appliance over which the hood is installed.

5.3 DUCTING

- (a) Ducts shall be constructed of an approved metal which is smooth and has an interior free from any obstructions. All joints shall provide satisfactory mechanical strength and shall be made airtight.
- (b) Accessible, grease tight clean outs shall be provided every three (3) metres and near each elbow, angle or duct junction of all horizontal sections of duct work.
- (c) Flexible ducts or connections, where required and approved, shall be non-collapsible, grease proof and fire resistant and shall be kept to a minimum.

6.0 INSTALLATION REQUIREMENTS

6.1 CANOPY

- (a) The canopy shall be installed so that the lowest front edge is not less than 2 metres above floor level.
- (b) The distance between the lowest edge of the grease filters and the cooking surface shall not be less than:-
 - (i) for charcoal or similar open fire - 1350mm
 - (ii) where heating is by a naked flame - 1050mm
 - (iii) where heating is via a fixed plate, or electronically operated equipment - 600mm
- (c) To achieve minimum distances the top of the canopy shall either:
 - (i) project through the ceiling into the roof space and be effectively sealed around the perimeter, or
 - (ii) be placed so there is a minimum space of 150mm provided from the ceiling.
- (d) All walls forming part of an exhaust canopy where it is abutting a wall shall be tiled to produce a smooth impervious finish (refer to 5.1 (e)).
- (e) The hood shall be installed so that there are no cross draughts between it and the appliance(s) being ventilated.

6.2 EXHAUST DISCHARGE

- (a) The point of exhaust discharge shall be in an approved position and be at least one (1) metre above the ridge of a pitched roof or three (3) metres above a flat roof. Council may approve a discharge at a lower level provided the discharge point is more than 15 metres from any adjacent higher structure located on the site.
- (b) The point of discharge shall be at least six (6) metres from property boundaries and fresh air intakes (ie. air conditioning systems).

7.0 PERFORMANCE REQUIREMENTS

ALL EXHAUST HOODS

- (a) The exhaust air flow rate for kitchen exhaust canopies shall be at least 0.38 m³ per second per square metre of the top surface area of the cooking equipment to be ventilated.
- (b) Exhaust velocity at the point of discharge shall be at least five (5) metres/second.
- (c) Make up air shall be supplied to the kitchen or cooking area by either permanent natural ventilation or an approved mechanical ventilating supply system capable of supplying not less than ten (10) complete air changes per hour, where the make up air is free from contamination and impurity.

8.0 OPERATING AND MAINTENANCE REQUIREMENTS

- (a) The filters shall be removed and thoroughly cleaned on a regular basis to ensure they are kept in a clean condition at all times.
- (b) The internal surfaces of the exhaust ductwork shall be cleaned on at least a six (6) monthly basis.
- (c) The mechanical exhaust system shall operate at all times when cooking or heating is carried out.

Should you have any further queries regarding the installation and construction of Kitchen Exhaust Hoods, please contact the City of Wanneroo Health Services on 9405 5444. Copies of Australian Standard AS 1668.2-1991 entitled "The use of mechanical ventilation and air-conditioning in buildings Part 2" are available from:- <http://www.standards.org.au/>

