GLADSTONE
REGIONAL COUNCIL

FOOD PREMISES - STRUCTURAL GUIDELINES

The purpose of this information kit is to provide guidelines on issues relevant to food businesses, existing or new. The Food Safety Standards set out broad requirements for food businesses including design and construction of food premises and equipment, Section 3.2.3 (download free at www.foodstandards.gov.au). To assist businesses in meeting the basic requirements of the Food Safety Standards, Council has developed these guidelines. They give an indication of how a fit out of premises should be carried out to ensure the premises will be easily cleaned and maintained with the goal of eliminating potential food contamination. The fit-out requirements and any measurements provided are a guide only and businesses are encouraged to present alternative options that can be shown to achieve satisfactory food safety and cleanliness outcomes.

An Australian Standard (AS) 4674 - Design, construction and fit-out of food premises has been developed. It provides design criteria for premises and the information in Council's guidelines also reflects these requirements. Australia Standards can be purchased online at www.standards.com.au.

Separate handouts are available for:-

- **Setting up New Premises**
- **Carrying out Alterations to Existing Premises**
- **Buying or Selling – Transfer of Ownership**
- **Temporary Food Stalls (Events)**
- **Mobile Food Vendors**

For a copy of any of the above handouts and information about relevant fees, contact

Gladstone Regional Council

Environmental Health Unit:

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Food Premises Information Kit

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Note 1 - Food Safety Fact Sheets

The following Fact Sheets are produced by **Food Standards Australia New Zealand (FSANZ)** and are available online at **www.foodstandards.gov.au** under Food Safety. They are free to download or alternatively Council's Environmental Health Officers can provide a copy of relevant sheets on request. The General Sheets provide information on the Food Safety Standards and its various sections. A copy of the standards can also be downloaded from the website.

General Fact Sheets:

- New Food Safety Standards for Australia
- Standard 3.1.1 - Interpretation and Application
- Standard 3.2.1 - Food Safety Programs
- Standard 3.2.2 - Food Safety Practices and General Requirements
- Standard 3.2.3 - Food Premises and Equipment
- State and Territory enforcement of the Food Safety Standards
- Sources of Information and Advice
- Food Safety Standards Definitions

Technical Fact Sheets:

- Food Handling Skills and Knowledge
- Food Business Notification Requirement
- Health and Hygiene: Responsibilities of Food Handlers
- Health and Hygiene: Responsibilities of Food Businesses
- Receiving Food Safely
- Food Recall Systems for Unsafe Foods
- Thermometers and using them with Potentially Hazardous Food
- Temperature Control Requirements

Translated Technical Fact Sheets:

The Food Safety Technical Fact Sheets are available on the website in the following languages: Arabic, Cambodian, Chinese, Croatian, Greek, Hindi, Italian, Indonesian, Macedonian, Serbian, Spanish, Filipino/Tagalog, Thai, Turkish and Vietnamese. (May 2001)

Facts Sheets for Charities and Community Organisations:
Information specifically for charities and community organisations covering the following topics:-

- An introduction to new Food Safety Standards
- Notification, Skills and Knowledge
- Labelling
- Temperature Control
- Sausage Sizzles and Barbecues
- Preparing and Cooking Food
- Transporting Food
- Camping
- Health and Hygiene for Food Handlers

Essential Food Safety Practices Fact Sheets:

- Cool and Reheat Food Safely - to the Right Temperatures
- Store, Display and Transport Food at the Right Temperature

The State government department, **Queensland Health**, also provides information on Food Safety and legislation relevant to Queensland businesses. Each state has different provisions for adopting parts of the standards including requirements for mandatory Food Safety Programs for certain food operations. Useful information is available on their website **www.health.qld.gov.au** under Services – State-wide & Community Health Services - Public Health Services – Environmental Health Unit - Food - Food Industry. It includes the following:

Food Safety and Standards Fact Sheets:

- Cleaning and Sanitising
- Provisions Associated with Operating a Mobile Catering Business
- Cross Contamination
- Donating Food to Charities and Community Groups
- Food Safety for Fundraising Events: A Pocket Book Guide to the Food Safety Standards for Community and Charity Groups
- Hazardous Foods Cooling and Heating
- Know Your Food Business - A Self-Assessment Guide to the Food Safety Standards for Food Businesses
- Label Buster - Guide to the Food Standards Code Labelling Requirements for Food Businesses
- Personal Hygiene for Food Handlers
- Reheating Foods Temperature Control

Other Fact Sheets:

- Food Safety Information for Doggy Bags
- What Mandatory Skills and Knowledge Requirements Must a Food Service Business Have?
- Food Safety Standards Skills and Knowledge Resources
- Directory of Food Safety Training Programs and Other Resources
- Queensland Food Legislation - Information for Outside School Hours Care Providers
- Licensing Guidelines for Mobile Catering Businesses
- Factsheet 18 - Food Safety Supervisors

Note 2 - Food Safety Supervisors (FSS)

All licensed food businesses including existing premises will be required to nominate an FSS, whose role is to ensure food hygiene and safety standards are achieved and maintained within the food business. To be nominated as an FSS, a person must:

- Hold a Statement of Attainment of specified competencies, issued by a Registered Training Organisation. (See the attached Food Safety Supervisor Fact Sheet)
- Have the ability to supervise food handling in the food premises.
- Have the authority of supervise food handlers.
- Have skills and knowledge relating to food safety and identification of food safety hazards.

The minimum competency standards for an FSS are listed in Table 1 of the Food Safety Supervisor Fact Sheet 18 and are dependent on the type of business the FSS is working within as detailed in Table 2. The minimum competencies apply regardless of whether the business has a food safety program. A copy of the Fact Sheet 18 can be found on Queensland Health Website at http://www.health.qld.gov.au/foodsafety.

It is to be noted that food vendors have 30 days from the issue of their Food Business Licence to nominate to Council their food safety supervisor with a copy of the appropriate qualifications. The nominated Food Safety Supervisor must be reasonably available to be contacted at all times by Council or by persons working in the food business. A food business may have more than one Food Safety Supervisor.

Note 3 - Floors

Floors in areas where there is food handling, storage, cleaning, sanitising and where personal hygiene activities are carried out are required to meet these requirements. Floors in dining or drinking areas and other public access areas not used for Food Handling do not need to meet these requirements, provided they can be maintained in a clean manner appropriate to a food business.

The standards propose that floors must be smooth & impervious, easily cleaned, unable to absorb water, grease etc, resistant to harbourage by pests. In wet areas floors must be graded and drained to prevent ponding of water. Coving should be provided in new premises in wet areas likely to be cleaned by flushing with water.

Examples of approved materials include:

- Glazed ceramic tiles of an approved size spaced no more than 5 millimetres apart with epoxy grout finished flush with the tile surface.
- Vinyl sheeting with welded joints laid over a solid impervious base. The flooring must be able to withstand traffic and therefore commercial grade vinyl is recommended because of its greater durability.
- In a storage area where equipment or dry goods only are stored an Officer may approve the use of a concrete trowelled floor of dense mix with steel or machine float finish.

Note 3 – Floors continued

Laid carpet may be used as a floor finish only in the areas where customers stand or sit to receive food or service.

Floor drains or a cleaner's sink must be provided in certain circumstances.

Coving is a useful way of ensuring a floor is easily cleanable as it allows better access by brooms etc to the junction between floors and walls or plinths.

Prior to the introduction of the Food Safety Standards coving was a mandatory requirement in food premises. This has been relaxed to mandatory in wet areas only where floors will be hosed out and are graded to a drain or at a junction between the floor and any plinths used. Coving is still recommended as a useful means of assisting cleaning and maintenance of the floor to wall junction throughout a food premises.

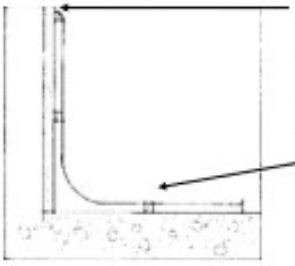
Installing coving over existing floor surfaces is no longer recommended as it is difficult to secure it in such a manner as to prevent crevices and potential vermin harbourage. Therefore, careful consideration of inclusion of coving should be made in the planning stages.

Examples of coving methods include:

Examples of coving methods include:

Pre-formed tiles without any hollow formed behind and grouted as required for the floor surface. (Figures 1a & 1b)

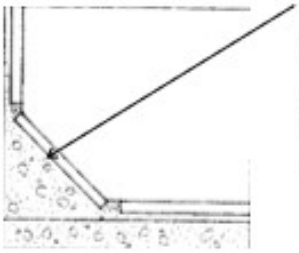
Figure 1a - with epoxy grout



Splayed at 45° or flush with wall surface

Impervious grout flush with tile surface

Figure 1b



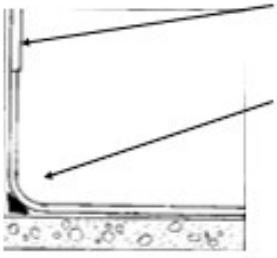
Height of coving - 70mm

Tile – min 50mm

in width at 45°

A tile splayed at a 45-degree angle adequately filled behind so that no hollow is formed and grouted as required for the floor surface. (Figure 1c)

Figure 1c - Tile Coving



Height of coving - 70mm

Wall Sheeting or tiles

Commercial Grade Vinyl Minimum 25mm radius of cove with Pre-formed backing piece

Figure 1d - Continuous Coving

Continuation of the floor surface material up the wall, adequately supported with a pre-formed backing piece if not integral with the floor base. (Figure 1d)

Note 4 - Walls, Ceilings & Windows

The **walls** must be sealed appropriately at junctions to prevent dust and dirt accessing the food area. The wall finish must be able to be easily and effectively cleaned and unable to absorb grease or water.

Acceptable materials include:

- Cement rendered brickwork or masonry with a smooth even surface and painted with washable gloss paint. (Painted plaster board is not sufficient in wet areas or where likely to come into contact with food or grease)
- Glazed Tiles
- Stainless Steel
- Laminated Plastics (Formica, Laminex, Panelyte)
- other impervious material adhered to the wall subject to prior approval by an Environmental Health Officer.

Raked brick or blockwork, painted blockwork or textured wall sheeting may be permitted in dry goods storage areas but are not considered appropriate for areas adjacent to food preparation and cleaning. By their nature, use of these surfaces in dry storage areas will require extra effort in cleaning and may be subject to review if not maintained suitably.

Cover strips should not be used. Joints between sheeting need to be filled with an approved filler and finished flush with the surface of the sheeting material. The exclusion of architraves, skirting boards and the like will avoid potential dust and vermin harbourage and increased cleaning issues.

In areas where walls may come into contact with water, grease or food, e.g. behind sinks and adjacent to preparation benches, the walls must be able to withstand frequent cleaning and be non-absorbent. In such areas it is appropriate to line the wall with ceramic tiles or stainless-steel sheeting for example. Where the material does not form an integral part of the bench top etc, it shall be adhered directly to the wall and be sealed so as to be waterproof and vermin proof with no cracks or crevices. In existing premises where plasterboard with washable paint is not resisting steam, grease, etc. due to flaking paintwork, discolouration or general cleaning failure an Environmental Health Officer may require upgrade of the surface.

Where tiles are used it is recommended that the top edge of the wall tiling be splayed with an impervious material or finished flush with the wall material so as not to form a ledge upon which dust or grease can accumulate. (Figure 2a)

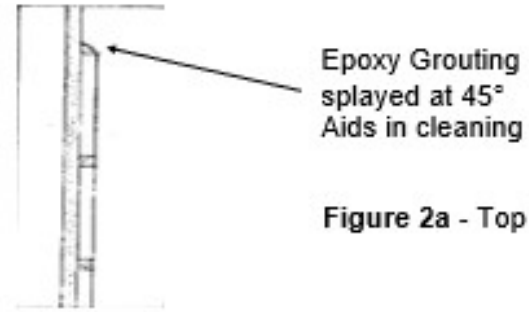


Figure 2a - Top Edge of Wall Tiling

Walls at the rear of cooking appliances need to be able to withstand heat from cooking processes and potentially a heavy steam and grease load. It is recommended that they be surfaced with approved impervious non-combustible material (traditionally stainless steel) that extends from the exhaust canopy to the floor. In some cases, the wall covering extending down from the canopy can be lapped over the top edge of the appliances to form a grease and vermin proof seal.

Ceilings shall be provided over food preparation, display and storage areas and are to be of an approved material that is smooth, impervious, durable, free from cracks or crevices and finished in a light colour. As a general rule, drop in panel ceilings should not be installed in food preparation areas in new premises because they are very difficult to seal. In an existing premises, if the panels are well fitted and the business keeps the ceiling clean, they may be permitted to remain.

Approved materials include:

- Fibrous plaster, Plasterboard
- Fibrous cement, Cement render
- other approved material painted with a washable gloss paint of light colour.

Ceiling finishes should be free from open joints, cracks or crevices in which grease or vermin may collect. Where possible, access panels should be located outside of food preparation areas. If this is impossible the access panel should fit very tightly into its surround.

Light fittings should be recessed or sealed flush with the ceiling surface to provide the least likely harbourage for vermin or dust and should be easily cleaned.

Window openings in kitchens and food preparation areas are to be constructed to minimize dust collection and access by being free from cracks crevices and ledges where possible. Use of windowsills that are splayed at an angle of 45^0 will reduce the incidence of dust collection (see Figure 2b). Using rounded or bullnose edges around a window eliminate cracks and crevices associated with architraves. Windows should be 300mm above benches and wash up areas to reduce the need for cleaning.

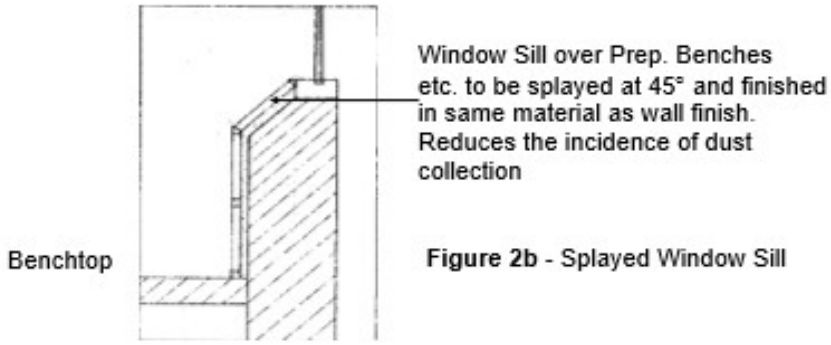


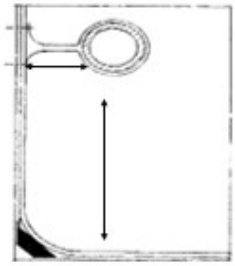
Figure 2b - Splayed Window Sill

Premises shall be rendered **fly proof** upon requirement by an Environmental Health Officer. Windows shall be protected by removable fly proofing such as the “clip on” type to allow for easy removal for cleaning. In cases where required, door openings should have screen doors fitted with an approved self-closing device with the gauze portion protected by approved metal framework.

Note 5 - Fixtures, Fittings and Equipment

Inaccessible crevices formed by the butting together of fittings or appliances create potential dust and vermin harbourage. All fittings that abut each other or walls must be fixed or sealed in such a manner as to eliminate any open joint, space, crevice or cavity which will allow liquids, food particles, grease or other refuse to collect therein.

Where a space is provided between fittings it should be such that it allows adequate access for cleaning. A cover flashing of approved material and easily removable by hand may be provided to such space.



Where possible all service pipes are to be concealed in floors, plinths, walls or ceilings. In many cases it is not possible to conceal pipes, or it is contrary to the regulations of other authorities. In these instances, to avoid dust gathering behind the fitting, pipes can be fixed on brackets to provide at least 25mm clearance between the pipe and adjacent vertical surfaces and 100mm between the pipe and adjacent horizontal surfaces (Figure 3a).

Figure 3a Service Pipe Clearance

All openings in walls, floors and ceilings through which service pipes and the like, pass, shall be sealed to prevent the access of vermin. The location of sewerage pipes in food preparation storage or serving areas is not desirable, however where circumstances will not permit an alternative position, cleaning eyes and access openings will not be permitted unless special precautions are taken to prevent likely contamination of the food in that area should any defect or blockage occur in the line.

Legs and brackets should be made from non-corrosive solid or tubular metal with caps over any open ends. A clear space between the floor and the underside of the fitting of not less than 150mm is recommended to allow cleaning underneath. Legs should be fitted 25mm from the wall to avoid creating a space that would be hard to keep clean if the leg was against the wall.

A very good option is for large equipment to have **wheels or castors** fixed to them. When equipment is easy for one person to move it is more likely to be cleaned underneath. It also provides flexibility in changing food preparation layouts to meet business and food safety needs.

Plinths (Figure 3b) are to be an integral part of the floor, constructed of solid impervious material and can be used to place equipment on. This may be the case in a wet area where the wall may be damaged if it joins to the floor level.

Plinths should be:

- At least 100mm high.
- Of solid material (i.e. cement) finished level to a smooth even surface. Hollow plinths could provide potential vermin harbourage.
- Rounded at exposed edges.
- Coved to a radius of 25 millimetres at the intersection with the floor and exposed walls.

Where appliances, equipment, fittings or fixtures are placed on plinths they should be effectively sealed to the plinths, so as to prevent any floor washings, food spillage, liquids, vermin or miscellaneous refuse from gaining access to the surface of the plinths. Service pipes may be concealed in plinths provided that the surface finish of the plinth is restored.

The use of plinths should be carefully considered prior to installation because they can limit the flexibility of the arrangement of equipment and any later alterations can become more difficult.

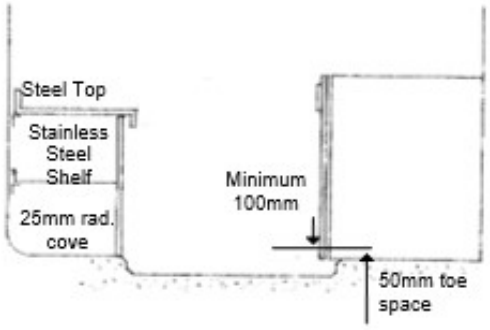


Figure 3b - Plinths

In wet areas benches, table tops, shelving and brackets etc should be constructed of stainless steel. Storage shelving should be kept 25mm clear of walls and vertical surfaces to eliminate any dirt or other material gathering at the rear of shelving in hard to reach places.

Note 6 - Cold Rooms & Freezer Rooms

Cold storage rooms should run at a working temperature such that the stored food temperature does not exceed 5°C. Freezers designed for the purpose of holding frozen food should operate so as to ensure that the temperature of the food is not higher than -15°C. An external temperature gauge must be fitted to each cold room or freezer room. This enables a quick check to ensure the fridge is working properly.

Low temperature rooms (Cold rooms and Freezer rooms) may be of solid construction which includes such materials as bricks, concrete, or similar approved material, cement rendered to a smooth even finish.

They may also be constructed of pre-fabricated wall and ceiling sections with internal and external finishes of the following material; non-corrosive aluminium, stainless steel, polyester faced or other approved smooth, impervious materials.

The floor in cold rooms and freezer rooms should be graded to the doorway, coved at the intersections with the walls and finished so as to be impervious to liquids. This method is required where the room would be cleaned out by flushing with water. Where a plinth is used its dimensions shall be identical with the external face of the cool room so as not to protrude beyond or recede under the vertical face.

Internally, **joints** at all intersections are to be maintained so that dirt or moisture etc cannot gather in them. An easily cleanable method is to use metal coving tightly sealed to all wall-to-wall and wall to floor joins.

Where the room is built in such a position that an inaccessible cavity is formed between the top of the cool room and the ceiling above or between the cool room and any other wall or fixture, such cavities are to be made proof against the access of rats or other vermin.

Hanging bars and storage racks should be constructed of galvanised pipe, angle iron, "T" iron, channel iron or flat metal which should be treated to prevent corrosion. Racks may be fixed or freestanding; the underside of the lowest shelf or rack to have sufficient clear space to provide access for adequate cleaning. Shelves that have plastic coating need to be regularly replaced and maintained to ensure the coating does not deteriorate and start to easily flake off. This is a potential food contamination issue. Due to the moist nature of cold rooms thoroughly cleaning wire racks and shelves is also essential to prevent build up.

The refrigeration equipment and all associated fittings are to be installed in such a manner that the refrigeration system is capable of operating without causing a noise or vibration nuisance.

Floor drains connected directly to the sewerage service are not permitted within a low temperature room. Floor wastes may be permitted with a low temperature room where the room is used as a work or preparation room and shall be subject to special approval in each individual case. Where circumstances require drainage, a floor waste is to be located outside the low temperature room as near as practicable to the door opening.

Refrigerated cabinets and ice wells for storage and display of foods should be designed:-

- So that a raised edge or lip is to be formed around each opening in the bar top to prevent foreign material falling into the food wells.
- With hinged lids constructed so that when they are opened any liquid that may be on top of the lid will flow off into a channel formed along the hinged portion.
- With the channel extending the full length of the lid so that the liquid will not gain access to the food well.

The **refrigeration system** is to be capable of maintaining at all times the designed temperature within the cabinet commensurate with its proposed use. Refrigerators should be able to maintain the temperature of the **food** at no greater than 5°C.

Note 7 - Mechanical Exhaust Ventilation Systems

Ventilation is to be provided either by natural means or by an approved mechanical ventilating system. Where cooking or extensive heating processes or such other processes as may be specified are carried out in the kitchen or in food preparation areas, an approved mechanical ventilating exhaust system is required.

Where insufficient natural ventilation is available, an approved system of mechanical ventilation shall be provided.

The presence of grease on walls or ceilings and flaking paint in cooking and wash up areas can indicate ventilation that is ineffective. In existing premises where the ventilation does not meet the standards it might not require change provided there is no evidence as described.

An **approved system of mechanical exhaust**, known as a Mechanical Exhaust Ventilation System (MEV), with collection hood may be required to be installed above cooking or heating appliances if the natural ventilation is not sufficient to remove excess smokes, fumes, etc. Generally, MEV's are required for appliances having a maximum input exceeding 8kW and/or total gas input of or above 29MJ/h. Businesses using deep fryers as part of their operation will also require the installation of an MEV above the deep fryer. The size of the premises, airflow and natural ventilation are also taken into account when assessing if an MEV is required. Advice on requirements for exhaust systems in approved domestic kitchens is available in relevant notes from FSANZ website www.foodstandards.gov.au.

Exhaust systems convey by means of suitable hoods, ducts and fans all smoke fumes, grease and water vapours, heat and odours via filters to a suitable discharge point. Salamanders and similar equipment should not be located directly above other cooking appliances where the efficiency of mechanical exhaust ventilation will be impaired.

The Food Standards refer to **Australian Standard 1668.2**, which provides guidelines on the design and installation of mechanical exhaust ventilation systems. Compliance with AS1668.2 will reduce the incidence of cases where supplied Mechanical Ventilation is inefficient.

An Exhaust Hood should be:

- In compliance with the requirement of AS1668.2.
- Be capable of being easily cleaned.
- Constructed of galvanised sheet steel or other approved impervious material in a permanent and workmanlike manner, smooth and free from obstructions. All joints are to be welded or lapped, riveted, and soldered grease tight. Other joints of satisfactory mechanical strength and grease-tightness shall be permitted.
- Reinforced where necessary to provide stability and freedom from vibration.
- Provided with a condensation gutter around the base of the hood. Such gutter to be not less than 50 millimetres wide or more than 25 millimetres deep and fitted with a brass cleaning screw in such a manner as not to impede the flow of grease in the gutter.

Wall type canopy hoods (Figure 4a) shall be designed to:-

- Extend not less than 150 millimetres beyond the perimeter of all fittings to be ventilated calculated from the internal edge of the grease gutter of the canopy to the outer edge of all cooking appliances (except on the side where the equipment abuts the wall). This distance is required to be increased to 300mm where the cooking equipment is a wok burner, charcoal burner with solid fuel or a salamander.
- Be so constructed as to provide a flat surface where it abuts walls, partitions or ceilings and shall be sealed to such wall, partition or ceiling and shall be incapable of affording any possible vermin harbourage.

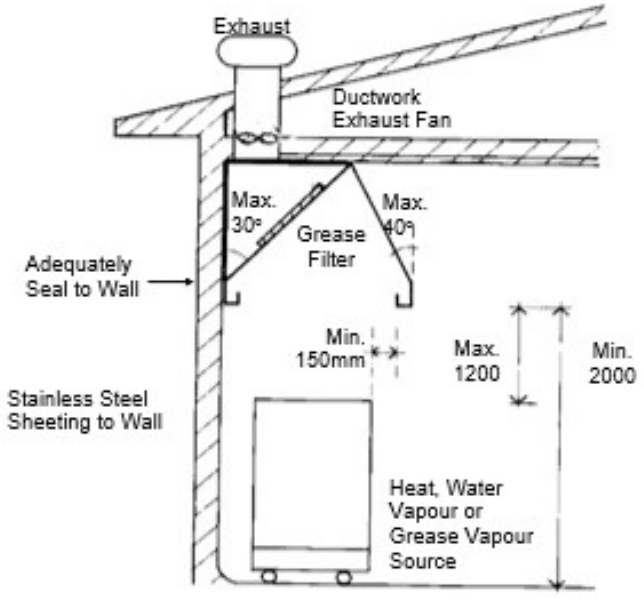


Figure 4a - Wall type canopy hood

- The wall behind cooking equipment shall be protected by stainless steel sheeting from the lower edge of the exhaust canopy to the floor or top of coving. In cases where a stainless-steel splashback forms an integral part of the cooking appliance surface it can be extended up to the lower edge of the canopy and in this case the wall below the cooking equipment does not require stainless steel sheeting provided the surface is impervious and heat resistant. (Figure 4b)

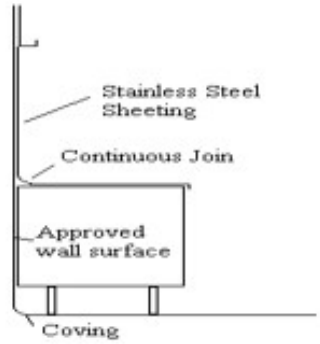


Figure 4b - Stainless Steel Splashback

Island type canopy hoods (Figure 4c) are used where they are located in the centre of the kitchen with equipment not against the wall. On all sides, 150mm between the inside edge of the grease gutter and the perimeter of fittings applies.

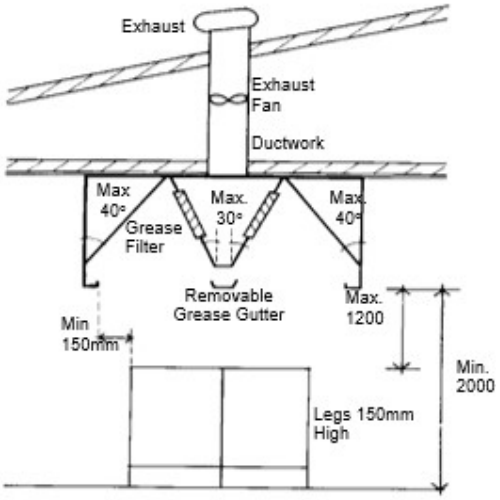


Figure 4c - Island Type canopy hood

The lower edge of a canopy type kitchen exhaust hood should be not less than 2000mm above the floor level. The maximum distance between the lower edge of the canopy hood and the cooking surface is 1200 mm.

Unless otherwise approved the grease filters should be vertical or sloped at an angle not exceeding 30° to the vertical. The internal surfaces of the exhaust hood shall be vertical or sloped at an angle not greater than 40° from the vertical.

The airflow across the hood should be sufficient so as to collect all cooking vapours and heat. The recommended capture velocities are as follows:

	CAPTURE VELOCITY m/s	
	Wall type Canopy	Island type Canopy
Water Vapour	0.3	0.47
General Cooking	0.4	0.6
Flame Cooking	0.6	0.95

Discharge from the Mechanical Exhaust Ventilation System must be located such that it does not cause nuisance to neighbouring properties. It should be at least 6m from any outdoor air intake opening, or natural ventilation opening.

A certificate of compliance with AS1668.2 will be required to be submitted prior to operation.

Note 8 - Washing Facilities

Basins, **used solely for the purpose of washing hands**, shall be provided in sufficient number in close proximity to where food is prepared. All food preparation areas to which the Food Standards apply shall have at least one easily accessible hand wash basin. The positioning of hand wash basins is determined by the operations in each area and is subject to approval in each individual case. The standards require that hand basins are not to be installed under benches or similar fittings as they are required to be readily accessible during hours of operation. For guidance purposes basins should be of 11 litres capacity with minimum dimensions 500mm x 400mm 'off the wall'.

Hot and cold water shall be supplied to the hand wash basin and delivered through a common outlet. The resulting water temperature should fall between 20°C-40°C. A liquid soap and single use towel dispenser shall be supplied adjacent to the hand washing facility. In new premises or when installing new hand basins in existing premises the use of hands-free taps are encouraged.

Adequate **washing sinks and equipment** for the cleaning of eating or drinking utensils is required. The number of sinks, dishwashers etc. may depend on the cleaning and sanitising option used. The standards require adequate rinsing and removal of obvious food particles prior to sanitising. This ensures that sanitisers will be effective and not wasted on treating high levels of bacteria in food residue. Use of detergent in this process aides in removing grease etc but is not largely involved in killing micro-organisms (bacteria).

In addition to rinsing considerations is a need for facilities that will accommodate sanitising of equipment as well. Sanitising is a process that will destroy harmful bacteria not visible to the eye. Current acceptable sanitising processes include exposure to hot water via commercial or domestic dishwashers or the use of chemical sanitisers. The use of hot water immersion alone is not recommended due to difficulty maintaining temperature and scalding risks. Consideration of whether a domestic dishwasher is sufficient depends on the size of operation and frequency of use. For small businesses serving few meals or meals once a day e.g. child or aged care centres, a domestic dishwasher may be suitable.

In any case where the authorising officer feels a **domestic dishwasher** may be suitable it will need to meet the following requirements:

- Have a temperature activated sanitising cycle that requires a temperature of 65.6oC or above to be reached before it progresses to the next function.
- If there is no sanitising cycle or where it is linked to time rather than temperature, the inlet water temperature above 68oC.

The recommended size for each sink used for washing equipment is a minimum of 450mm x 300mm x300mm. Sinks may need to be larger depending on the size of equipment to be regularly washed. Carrying out cleaning and sanitising in sinks generally requires a separate bowl for each process to ensure efficiency.

A separate sink shall be required when foodstuffs need to be prepared by immersion in water. Such sink is to be provided solely for that purpose to prevent cross contamination.

To summarise, as a general rule, a food premise ***must*** have the following sinks:
- A minimum of 1 hand wash basin. (Speak to an EHO regarding number of hand wash basins required)
- Either 1 double bowl sink (Rinse/Sanitise); or
  1 single bowl sink **and** a commercial dishwasher
- A food preparation sink (Speak to an EHO regarding whether a preparation sink is required)

Dependant on operations;
- A cleaners sink for floor waste drains

Hot water systems must be capable of supplying adequate hot water at minimum temperatures as outlined above at all times, especially at peak washing up periods.

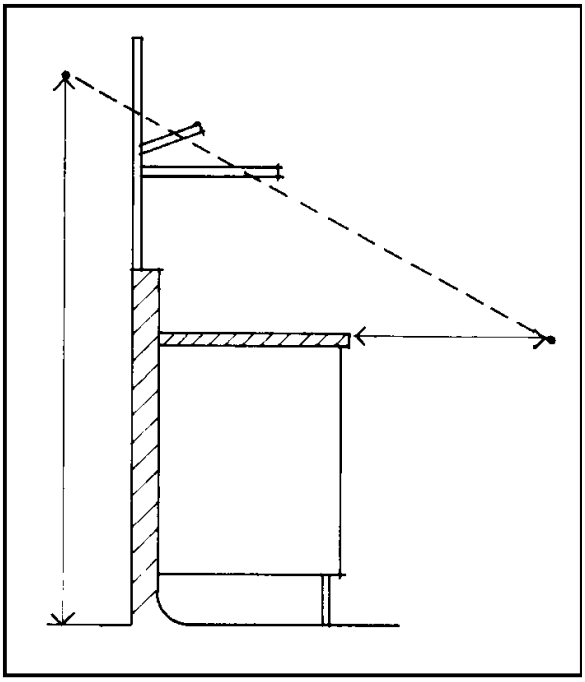
If a cleaner's sink is supplied for the cleaning of floors it should be located in a room or space away from the food preparation area. Materials and equipment for cleaning are also to be stored in such a manner that they cannot be a source of contamination to food. Such hazardous materials are required to be clearly labelled.

Note 9 - Sneeze guard and Protective Barriers

At all times food is stored, prepared or displayed it should be protected from any likely form of contamination including customer's breath, handling, flies, dust, and smoking. Customers are a likely source of contamination where they have access to food preparation or storage areas within a distance of 1.5metres. In general equipment purchased for the display of food will have an adequate sneeze guard. The following information and measurements is intended as a guide where a sneeze guard is to be designed to suit an existing counter.

A sneeze guard may be constructed of glass, Perspex or other approved smooth, durable, impervious and thermo-resistant material with dimensions such that it protects the food from contamination by the customer. Sliding doors or other protective means should enclose a display canopy.

Figure 5a provides a diagram to determine **height requirements** of different styles of sneeze guards. The minimum height from the ground required for a vertical barrier is 1700 millimetres. While barriers that angle back over the food are required to be of such height that they intersect the direct line of contamination. The direct line of contamination runs between a point 600mm horizontally from the surface of the bench on the preparation sign to a point depicting the average height of a standing customer which is 1700mm vertically and 200mm horizontally from the serving counter, as shown.



Where **"X"** is a point measured 600mm horizontally from the preparation bench or cooking surface.

Where **"Y"** represents the customers face level and is 200mm horizontally from the outside edge of the preparation area and a minimum of 1700mm vertically from the floor level.

Figure 5a - Sneeze guard

Note 10 - Self-Service Food Displays

Smorgasbords or self-service food bars should be designed such that the food is protected from contamination and correctly stored (Figure 6).

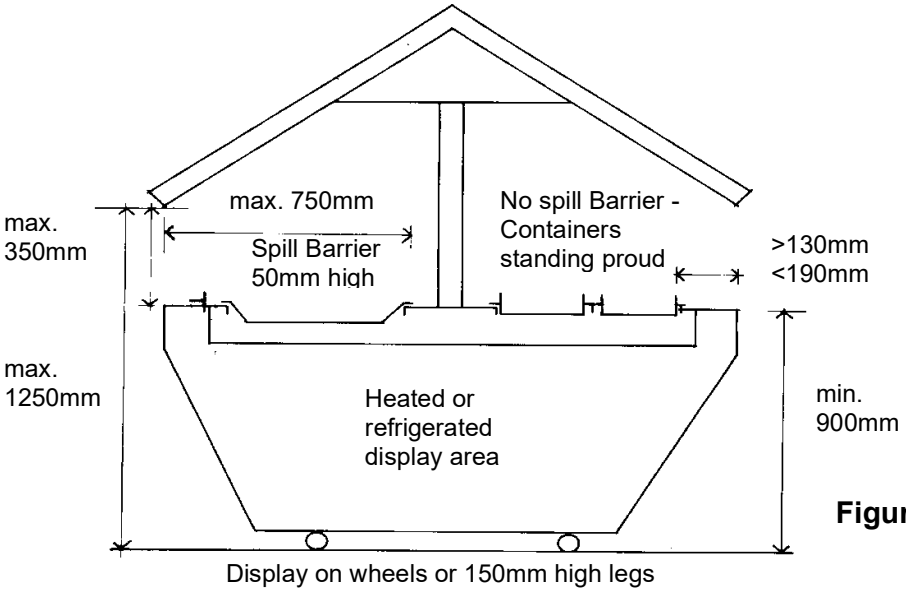


Figure 6a - Self Service Food Displays

This information is intended as a general guideline. When installing a Self-service food display the following points should be considered:-

- For self-service access the distance between the lower edge of the canopy and the top of the salad bar should not exceed 350mm.
- The top surface of the display containers should be at least 900mm above floor level.
- The distance from the outer edge of the canopy to the inside edge of the display containers should not be more than 750mm on all sides.
- The edges of the container should be above the surface of the display to protect the food from contamination.

Self-service food bars should be supervised by a staff member to reduce the likelihood of contamination. Food containers should be changed over regularly with leftover food being thrown away. Tongs or serving spoons must also be cleaned regularly.

Each unit should have a temperature gauge in a visible location so that it can be checked regularly. The temperature of the food must be above 60^{o}C for hot food and below 5^{o}C for cold food.

Note 11 - Temperature Control

Temperature gauges accurate to 1°C should be provided externally to each refrigerator, cold room or freezer room and to each hot and cold storage or display unit. Temperature gauges should be readily visible and fitted to display the internal operating temperature of the appliance. This ensures that the temperature of the food's environment can be monitored easily on a regular basis. Temperature gauges on equipment are not an indication of the temperature of the food inside.

To measure food temperature a probe thermometer should be used. A new type of infrared thermometer is useful to avoid contacting food but does not give an accurate temperature, as it is only a surface reading. Temperature probes should be calibrated as per instructions that normally come with them, to ensure they are working correctly over time. Alternatively contact the manufacturer.

The correct method of using a probe thermometer is as follows:

- make sure that the thermometer is clean and dry;
- place the probe into the food and wait until the temperature reading has stabilised before reading the temperature;
- measure different parts of a food as the temperature may not be the same, for example, if food is being cooled in a refrigerator the top of the food may be cooler than the middle of the food;
- clean and sanitise the thermometer after measuring the temperature of one food and before measuring the temperature of another food;
- if using the thermometer to measure hot and cold food, wait for the thermometer to return to room temperature between measurements;
- measure the temperature of different foods in a refrigerator or display unit as there will be colder and hotter spots within the refrigerator or unit; and
- measure the temperature of packaged chilled food by placing the length of the thermometer between two packages - the temperature will be approximate, but the package remains intact.

As the probe of the thermometer will be inserted into food, the probe must be cleaned and sanitised before it is used to measure the temperature of a different food. If the probe is not cleaned and sanitised, food poisoning bacteria may be transferred from one food to another food. Cleaning involves washing with detergent to remove any visible matter and sanitising to kill bacteria can achieved by using alcohol swabs, a chemical sanitiser and allowing too dry by air drying or using disposable paper towel.

Bacteria multiply at temperatures between 5°C and 60°C with optimum growth at 37°C. Therefore, it is important to keep food out of this Danger Zone by storing cold food below 5°C and hot food above 60°C. It should be noted that freezing foods does not kill bacteria but simply stops multiplication.

Foods can reach levels at which illness would be caused in three to five hours depending on the type of food, temperature and extent of contamination.

Transport, storage and display temperature requirements relate to potentially hazardous foods which include:

- raw & cooked meats, dairy products, processed fruits & vegetables e.g. salads, cooked rice & pasta, foods containing eggs, beans, nuts.
- sandwiches containing any of the above ingredients.
- cakes with fresh dairy products such as cream.

Cooling: It may take several hours for hot food to cool to below 5°C in the refrigerator. To speed up the cooling divide into smaller portions, shallow trays and stir regularly. Food is required to be cooled from 60°C to 21°C over a maximum of 2 hours and from 21°C to 5°C over a maximum of 4 hours. Using a probe thermometer to measure the temperature in the centre of the food as it declines during the cooling process can assess this.

Heating: Use **rapid** heating to reduce the time (max 2 hours) that it takes for cold food below 5°C to reach above 60°C. Heating small quantities and stirring occasionally can achieve this during the heating process. These lengthy heating times apply more to food that is designed to be heated and then held hot on display or until served. It does not apply to food cooked or reheated for immediate consumption, which should be a much quicker process. Bain Maries and Pie Warmers should only be used to maintain food above 60°C not as reheating devices. Ideally hot foods can be rapidly heated in an oven or microwave before storing them in hot food display cabinets.

Thawing: Freezing food does not kill bacteria and therefore frozen food should never be thawed at room temperature (Danger Zone). The best method of thawing frozen food is in a refrigerator for 24 hours as it keeps the food below 5°C.

Note 12 - Food Handling Skills & Knowledge

Division 2 of Standard 3.2.2 in the Food Safety Standards requires a food business to ensure food handlers and people who supervise food handling operations have skills and knowledge in relation to food safety and food hygiene matters.

Skills relate to the ability to perform tasks that may include setting equipment at the right temperature, correct cleaning and hygiene procedures and determining whether food is cooked properly. The knowledge food handlers require relates to an awareness of food safety principles such as what causes bacterial growth, cross contamination, correct storage temperatures etc. In some businesses where staff carry out one aspect, for example, cleaning, they would only need the knowledge relevant to that job such as correct methods for sanitising and preventing contamination of food by maintaining clean surfaces.

Compliance with this standard can be achieved by several methods that do not require compulsory training or qualifications.

Businesses options include:

- In house training by employees or the owner who have good skills and knowledge.
- Providing written food safety and hygiene information for staff to read.
- Developing and circulating operating procedures that set out the responsibilities of food handlers and supervisors.
- Sending staff to training run by agencies such as industry associations.
- Hiring a consultant to run a course for employees.
- Sending staff to formal training e.g. TAFE certificates.

When assessing knowledge and skills of food handlers, enforcement officers have regard to how well the business complies with the food safety standards in general. Following food safety requirements in relation to storage, handling, preparing and cleaning in a food safety business will go a long way to ensuring staff are carrying out correct procedures thereby displaying appropriate skills and knowledge. Use of a Food Safety Program where business have identified food safety risks and developed procedures to deal with them will also help ensure that handling skills and knowledge of correct practices are used.

There is a lot of information available on acceptable methods of food handling and hygiene procedures. Refer to Page 3 - Fact sheets that are listed from websites at www.foodstandards.gov.au and www.health.qld.gov.au
Council provides free on-line training to assist operators to improve the food safety practices in their business. Visit this free site at www.gladstone.imalert.com.au

Following is a brief description of some key aspects relating to food handling.

Cross-contamination
It is important to eliminate food coming into contact with anything that is contaminated with bacteria. This is called cross-contamination where the food poisoning organisms are passed from an item contaminated with bacteria onto an item with little bacteria.

Cross-contamination can be reduced by:

- Storing raw and cooked food separately to avoid the possibility of natural bacteria on raw food being transferred to cooked food, which has had its natural bacteria load killed by heating it to above 60°C.
- Storing cooked food above raw so that any leakage from raw food cannot drip onto cooked food.
- Having different cutting boards, clearly identified, for raw foods, cooked foods and vegetables.
- Using separate implements e.g. knives and plates, for raw and cooked foods and vegetables. (Try colour coding)
- Always washing hands after touching raw foods and before handling cooked food.
- Never mix old food into new food.
- Use only clean utensils to test food.
- Do not use tea towels or cloths to dry equipment, utensils or hands after washing. Single use disposable towels and air-drying are the preferred methods.
- Regularly wash and sanitise cloths that are used for wiping benches. (Ensure cloths used to clean toilets or similar are not used on food preparation benches.)

Personal Hygiene

To prevent contamination of food by bacteria from skin, dirty clothes etc. a high standard of personal hygiene must be maintained. This is also important as customers like to see clean and tidy food handlers.

Hands must be washed before starting work, after using a toilet, after smoking, after handling raw food, after touching ear, nose, hair, mouth (these actions are often performed by food handlers without them being aware), after handling refuse, poisons or chemicals.

Correct hand washing requires warm water **and soap** to be used. Hands must be dried so that they do not become dirty again. To guarantee hands are clean after washing, single use towels should be used so that hands are not contaminated with dirty towels.

Where possible **avoid direct handling of food** by using tongs or gloves. Gloves are only effective if changed regularly otherwise the bacteria level on them will build up. They must also be changed between handling raw or cooked products. A brightly coloured band-aid should be used to cover cuts on hands with disposable gloves worn over the top.

Cleaning

Equipment should be thoroughly rinsed prior to washing up to remove large particles, which have a high bacterial load. Use of detergent in the washing process aides in removing grease etc. but is not largely involved in killing micro-organisms (bacteria). Effective removal of obvious particles ensures sanitising methods are not wasted on treating high levels of bacteria in food residue.

Equipment and utensils should be sanitised after washing. Sanitising is a process that will destroy harmful bacteria not visible to the eye. Current acceptable sanitising processes include exposure to hot water via commercial or domestic dishwashers, immersion in hot water (at 77^{o}C for 30 secs) or the use of chemical sanitisers. Chemical sanitisers must be used in accordance with manufacturer's instructions to ensure they are effective.

A **cleaning roster** covering the entire food premises should state what is to be cleaned, by whom, when (how regularly), and how (chemicals and equipment to be used etc). This ensures that no areas are frequently missed.

NOTE: A clean kitchen with no access to food by vermin does not provide any source of food for pests.

Note 13 - Pest Control

Cockroaches, flies, mice etc. are a potential source of disease, which can contaminate food and also cause damage to premises.

The ideal control measure is to eliminate any potential access or harbourage for pests for example sealing all holes, cavities and gaps and installing flyscreens where possible. To help avoid a pest problem there should be no access to food. This is achieved by correct storage of food in tight fitting containers off the floor and effective cleaning to remove food sources from the floor, equipment etc. A refuse storage container also provides a potential food source and must therefore have a tight-fitting lid to prevent access.

What to look for
The presence of **adult flies, cockroaches and insects** is the most obvious sign that a problem exists. This could mean that the insects are gaining access from outside or that they are breeding inside the store. Signs of breeding include the presence of large numbers of similarly sized adults appearing inside the premises with no signs of potential access, a collection of larvae or egg cases in an area usually dark, moist and with a food source.

Rodents leave droppings and also visual damage to packaging and other materials can be found.

Small moths and weevils are pests typically associated with dry food storage such as flour, cereals etc. These small insects are often difficult to see with infestations detected by signs including webbing, droppings, clumping of food particles and holes in packaging.

If signs of pests are present treatment is required. The business may be able to manage pests using chemical or non-chemical means provided food, preparation surfaces and eating and drinking surfaces are not exposed to any chemicals. Treatment measures include electronic insectocutors, laying baits or traps and using sprays providing care is taken to ensure they are not used around food or utensils etc. If evidence suggests that a business cannot control a pest problem they will be required to hire a professional pest controller.

Keep pest operators dockets as a record of regular treatment so that you can show the Environmental Health Officer if necessary.

For further information about Food Safety please go to Councils Website or contact Councils Environmental Health Unit on (07) 4970 0700.