

Australian Standard™

Design, construction and fit-out of food premises

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PREFACE

This Standard was prepared by Standards Australia Committee BD-095, Retail Food Premises, in response to a request from the Food Standards Australia New Zealand (formerly ANZFA), to provide the food industry, the construction industry and governments across Australia with uniform criteria for the hygienic design, construction and fit-out of food premises.

The objective of this Standard is to provide criteria for architects, the construction industry and health and building regulators to cooperatively ensure that buildings used by food businesses are designed, constructed and fitted out in compliance with the requirements of the Australian Food Standards Code, Standard 3.2.3, *Food Premises and Equipment*, which will assist food businesses to produce safe food.

The scope of the Standard is limited to permanent buildings used by the food service industry, by food retailers and by small-scale food manufacturers. The Australian Building Codes Board (ABCB) is also considering including specific requirements for food premises in the Building Code of Australia (BCA).

When preparing plans for new food premises or alterations to existing premises, advice should be sought from the appropriate government agency responsible for food safety in the area where the premises is located.

Notes to clauses in this Standard do not form a mandatory requirement for compliance with this Standard.

The Committee wishes to acknowledge the assistance of the Australian Institute of Environmental Health in the preparation of this document, particularly for permission to use their publication *The National Code for the Construction and Fitout of Food Premises*, which is superseded by this Standard. Valuable assistance was also given by organizations experienced in the design and construction of food premises and the Committee acknowledges their help.

FOREWORD

It is essential for Australian consumers that food is safe to eat and free from contaminants. Experience has shown that food prepared and sold from food premises that are clean and provided with essential services and equipment for preparing and holding food will enable food businesses not only to meet legal obligations to handle food safely but make it easier for them to do so.

Food businesses are required under State and Territory food legislation to use premises and equipment that comply with Standard 3.2.3, *Food Premises and Equipment*, of the Australia New Zealand Food Standards Code.

This Australian Standard provides criteria on design and construction to assist with compliance with Standard 3.2.3 for new buildings and alterations to existing buildings. Specifically, this Standard aims to ensure that food premises—

- (a) are easy to clean and maintain clean;
- (b) have sufficient space, facilities and suitable equipment to produce safe food;
- (c) are provided with services such as potable water, effective sewage disposal and sufficient light and ventilation for the food handling operations;
- (d) provides facilities for staff to maintain standards of personal hygiene and equipment cleanliness that will protect food from contamination; and
- (e) are proofed against entry by and harbourage of pests.

Food businesses should also be aware of obligations under the other food safety standards that will impact on the design and construction of their premises. Accordingly, they should consult their local health departments prior to alterations or new works. Standard 3.2.2, *Food Safety Practices and General Requirements of the Australia New Zealand Food Standards Code*, specifies obligations in relation to food handling operations. Businesses will have to ensure that the equipment or facilities that are necessary to carry out their specific food handling operations are provided on their premises.

This Standard reflects long established design and construction criteria for food premises. Therefore, most well designed and constructed premises will already meet the obligations under this Standard and the food safety standards.

The Standard will ensure that design, construction and fit-out of food premises are maintained at high standards to facilitate the production of safe food.

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STANDARDS AUSTRALIA

Australian Standard Design, construction and fit-out of food premises

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard provides design, construction and fit-out criteria for new food premises and for the renovation or alteration of existing food premises. The scope of the Standard is limited to permanent buildings used by the food service industry, by food retailers and by small-scale food manufacturers.

This Standard does not provide criteria for the design, construction and fit-out of the following premises:

- (a) Temporary food premises.
- (b) Mobile food premises.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

- AS
- 1319 Safety signs for the occupational environment
 - 1345 Identification of the contents of pipes, conduits and ducts
 - 1680 Interior lighting
 - 1680.2.0 Part 2.0: Recommendations for specific tasks and interiors
 - 2945(Int) Batch-type washer/disinfectors for health care facilities
 - 3554 Adhesives—Epoxy—For raised pavement marker installation
 - 3958 Ceramic tiles
 - 3958.1 Part 1: Guide to the installation of ceramic tiles
 - 3958.2 Part 2: Guide to the selection of a ceramic tiling system
- AS/NZS
- 1668 The use of ventilation and airconditioning in buildings
 - 1668.1 Part 1: Fire and smoke control in multi-compartment buildings
 - 1668.2 Part 2: Ventilation design for indoor air contaminant control
 - 1680 Interior lighting
 - 1680.1 Part 1: General principles and recommendations
 - 1680.2.4 Part 2.4: Industrial tasks and processes
 - 3500 National Plumbing and Drainage Code
 - 3500.1.2 Part 1.2: Water supply—Acceptable solutions
 - 3500.2.2 Part 2.2: Sanitary plumbing and drainage—Acceptable solutions
 - 3500.4.2 Part 4.2: Hot water supply systems—Acceptable solutions
- BCA Building Code of Australia
- ANZFA Food Standards Code of Australia

1.3 DEFINITIONS

1.3.1 Open food

Open food is—

- (a) food not protected by packaging; or
- (b) fruit and vegetables that have been cut or otherwise prepared for eating and are not intended to be further washed, peeled, hulled or shelled before being consumed.

1.3.2 Wet washed areas

Areas in food premises where the walls, floors and ceilings resist frequent contact with steam, water or other liquids.

NOTE: Wet areas may be areas of the premises that are cleaned using chemicals and are hosed down or washed with water. Areas where equipment and utensils are washed would also likely to be 'wet areas'. It also includes areas where the walls and floors are in contact with liquid from cooking processes.

1.3.3 Rinsing baskets

Containers, usually of wire or heat-resistant plastic, that can be submerged in very hot water to sanitize utensils.

1.3.4 Potable water

Water that is acceptable for human consumption.

SECTION 2 DESIGN AND CONSTRUCTION REQUIREMENTS FOR FOOD PREMISES

2.1 GENERAL REQUIREMENTS

2.1.1 Appropriate for purpose

The premises shall be designed so that food flow is in one direction from receipt, to storage, to preparation, to packaging/serving/dispatch (see Figure 2.1).

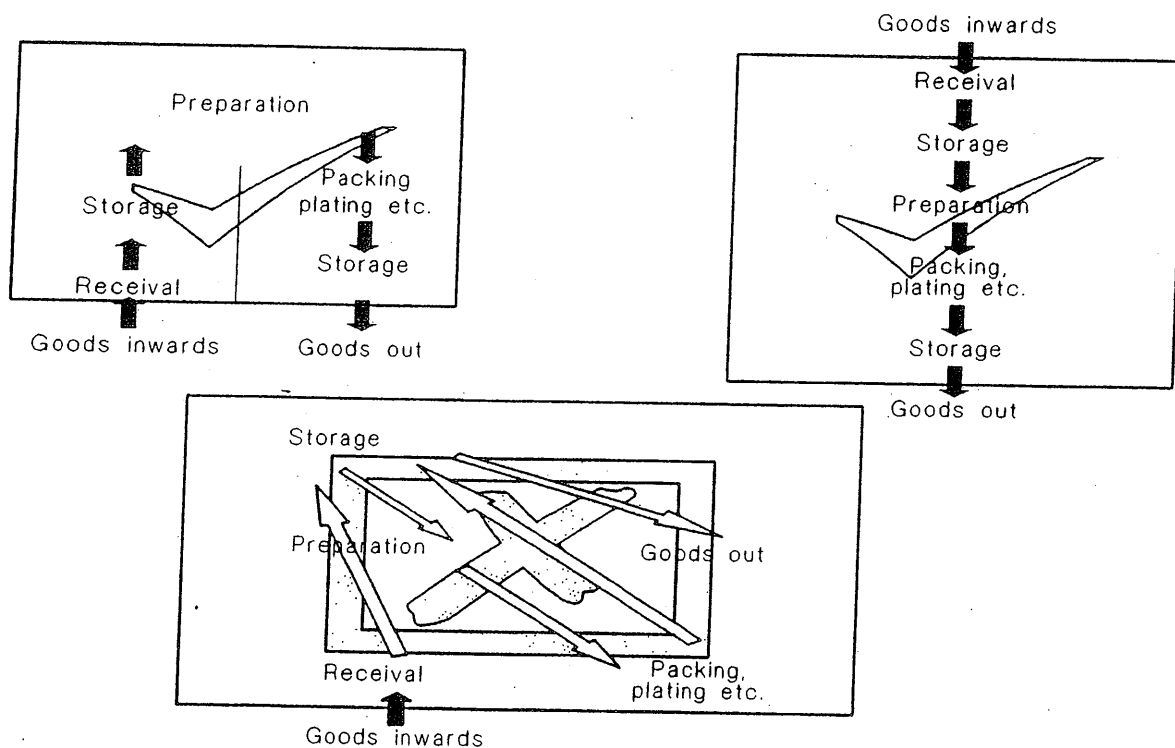


FIGURE 2.1 TYPICAL EXAMPLES OF CORRECT FLOW OF FOOD THROUGH PREMISES

2.1.2 Separation of areas

Areas intended to be used for storing or preparing food or for storing food packing and equipment used for food preparation shall be designed and constructed to be physically separated from—

- (a) chemical storage areas;
- (b) living and sleeping areas;
- (c) toilets and change rooms;
- (d) garbage and recyclable material storage areas/compactor areas;
- (e) areas where animals are permitted (under food safety law or other law); and
- (f) areas used for activities which could contaminate food or food preparation surfaces, e.g., receipt of soiled laundry.

2.1.3 Provision for adequate space

Adequate space shall be provided on the premises for food handlers and other staff to handle food and perform other activities that are part of the food business.

Space shall be provided for—

- (a) food preparation and service;
- (b) separation, preparation and storage of raw food, from preparation and storage of cooked, and other ready to eat foods; and
- (c) washing and sanitizing operations for utensils and equipment.

Space shall be provided for storage of—

- (d) dry goods;
- (e) chilled and frozen food;
- (f) fresh fruit and vegetables;
- (g) returned/recalled food;
- (h) packaging material;
- (i) utensils, equipment;
- (j) cleaning equipment and chemicals;
- (k) clothing and personal belongings of staff;
- (l) garbage and recyclable material;
- (m) hot water (and cold water if storing on site); and
- (n) any other goods or materials that are associated with operating the food business on the premises.

The amount of space required will depend on the food operations proposed for the premises.

Coolroom, refrigerator and freezer capacity (including display equipment) and storage and display capacity for hot food shall be adequate for the business to—

- (i) comply with Food Safety Standard 3.2.2 of the Food Standard Code for the storage and display of potentially hazardous foods; and
- (ii) ensure that there is sufficient additional capacity for any other foods that the business stores chilled, frozen or hot.

2.1.4 Cleaning and sanitizing of premises

The layout and design of premises shall provide access for cleaning and for sanitizing, if required.

2.1.5 Proofing against pests

Where premises are enclosed, windows shall be protected against the entry of pests by being—

- (a) tight-fitting and permanently fixed closed;
- (b) fitted with mesh screens that can be removed for cleaning; or
- (c) protected by a permanent mesh screen that can be cleaned in place.

Entrances/exits, serving hatches and similar openings to food premises shall be protected against the entry of pests by—

- (a) tight-fitting solid self-closing doors, roller shutters or other means of closing off the entrance; or
- (b) tight-fitting self-closing mesh screen doors.

Where doors and windows (and other openings) need to be pest-proofed against flying insects only, door and windows may be protected by—

- (i) air curtains that effectively prevent insects entering the premises (restaurants and similar);
- (ii) being fitted with plastic strip curtains that effectively exclude flying insects;
- (iii) opening into vestibules with self-closing doors; or
- (iv) fitting the bottom edge of doors or bottom sash of windows (where practicable) with a seal.

NOTE: This is to allow doors of premises to be open during trading. These requirements do not apply if food premises opens into a larger structure such as a shopping mall, airport or office building, or into an attached structure and the attached or larger structure effectively protects the food premises against the entry of pests.

Where pipework, drains, cables and ducts penetrate walls, ceilings and roofs, holes shall be sealed, filled and finished to prevent the entry of pests.

Spaces between adjoining structures, such as between coolroom walls and premises walls, shall be accessible for inspection and cleaning or sealed with a suitable compound so that they are inaccessible to pests.

Spaces between the top surface of equipment or structures such as coolrooms shall be accessible for inspection and cleaning or sealed or boxed in so that they are inaccessible to pests.

2.1.6 Installation of insect control devices

Insect control devices shall be installed so that the devices are not located directly over food preparation working areas, exposed food, clean equipment and unwrapped packaging material.

Insect control devices that are used to electrocute or stun flying insects shall be designed to retain the insect within the device.

NOTE: This to reduce the likelihood that insect particles from the device may contaminate food or food contact surfaces.

2.1.7 Exclusion of dirt, dust, odours, smoke and other contaminants

Premises shall be designed and constructed to exclude, to the extent that is practicable, the introduction of outside contaminants, for example, dirt, dust, fumes, and smoke.

2.2 WATER SUPPLY

2.2.1 Use of potable water

Water used for any activities involved in the preparation of food, personal hygiene, cleaning and sanitizing shall be potable.

Non-potable water may be used for cleaning and similar uses, only where it will not compromise the safety of food on the premises.

Pipes carrying non-potable water shall be identified as containing non-potable water in accordance with AS 1345.

Taps in food handling areas discharging non-potable water shall be identified as discharging non-potable water in accordance with AS 1319.

NOTE: Advice on suitability of water may be obtained from the Australian Drinking Water Guidelines.

2.2.2 Compliance with Australian Standards

The water supply shall be supplied in accordance with the requirements of AS/NZS 3500.1.2.

Heated water shall be supplied in accordance with the requirements of AS/NZS 3500.4.2.

NOTE: It is recommended that water storage tanks are designed and built in accordance with Guidance on the Use of Rainwater Tanks (National Environmental Health Forum Monographs, Water Series No. 3 1998) which provides advice on matters including water quality, construction and installation of tanks, maintenance and repairs and disinfection.

2.3 SEWAGE AND WASTE WATER DISPOSAL

2.3.1 Access opening

Access openings to the sanitary drainage system shall not be located in areas of the premises where open food is handled.

2.3.2 Grease arrestors

Grease arrestors shall not be located in areas where food, equipment or packaging materials are handled or stored.

Access to grease arrestors for emptying shall not be through areas where open food is handled or stored or where food contact equipment and packaging materials are handled or stored.

2.4 GARBAGE AND RECYCLABLE MATERIALS

2.4.1 General requirements

Provision shall be made for storage of garbage containers, containers for recyclable material and compactors in an external area of the premises or in a room specifically for that purpose.

2.4.2 External areas used for storage of putrescible material

Ground areas where garbage containers holding putrescible material and containers used for storage of putrescible recyclable material and recyclable oil are stored shall be—

- (a) provided with a hose tap connected to the water supply;
- (b) paved with impervious material; and
- (c) graded and drained to a waste disposal system in accordance with the requirements of the relevant regulatory authority.

NOTE: Regulatory requirements may vary between jurisdictions.

2.4.3 Rooms where garbage and garbage bins are stored (including refrigerated garbage rooms)

The floor of garbage rooms shall be—

- (a) impervious;
- (b) coved at the intersection with the walls with coving integral to the floor; and
- (c) graded and drained to a floor waste gully connected to the sewerage system and traps (where required) of the premises.

Walls shall be finished with a smooth, impervious surface.

NOTE: Criteria on materials is given in section on floors, walls and ceilings (cross reference).

The room shall be—

- (i) ventilated;
- (ii) proofed against pests; and
- (iii) provided with a hose tap connected to the water supply.

NOTE: In premises that have potable and non-potable supplies, water used for cleaning garbage areas may be non-potable.

2.4.4 Garbage containers

Bins, hoppers and other containers used for storing garbage or recyclable material shall be—

- (a) constructed of impervious material such as metal or plastic; and
- (b) have tight fitting lids or be kept inside pest-proofed areas of the premises.

Bins that cannot be lifted for draining after cleaning shall have drainage bungs at the base.

2.4.5 Containers for recyclable material

Containers for clean, dry, recyclable material may be constructed of materials such as reinforced polythene material, wire mesh or similar material.

Containers for any other recyclable material (e.g., putrescible material and oil) shall meet the requirements for garbage containers.

2.5 VENTILATION

2.5.1 General requirements

All food premises shall have either natural or mechanical ventilation in accordance with the Building Code of Australia.

Equipment installed in areas of the premises, after the mechanical exhaust ventilation system has been designed and installed in that area, shall not be located so as to impair the efficiency of the mechanical exhaust ventilation or of natural ventilation.

2.5.2 Mechanical ventilation and filtration

In addition to the requirements of AS/NZS 1668.1 and AS 1668.2, an extraction system shall be provided where there is any dishwasher and other washing and sanitizing equipment that vents steam into the area to the extent that there is, or is likely to be, condensation collecting on walls and ceilings.

NOTE: At present the Building Code of Australia (BCA) references the AS 1668.2—1991 edition.

2.6 LIGHTING

2.6.1 General requirements

All food premises shall have natural or artificial lighting in accordance with the requirements of the Building Code of Australia (BCA), with the following exceptions:

- (a) Where natural lighting is provided the lighting levels shall be equivalent to the levels for artificial lighting.
- (b) Where artificial lighting is provided the lighting shall also comply with the requirements of AS 1680.1 and AS/NZS 1680.2.4.

Subdued lighting may be provided in dining and drinking areas, provided that there is lighting available that complies with the above requirements during cleaning and inspection operations.

The exposed surface of all conduits installed on the surface of walls or ceilings shall be smooth.

2.6.2 Light fittings

In areas where open food is handled or stored, light fittings shall be—

- (a) designed and constructed to prevent contamination of food should the globe or tube shatter; and
- (b) free from any features that would harbour dirt, dust or insects or make the fitting difficult to clean.

Light fittings, whether intended to provide light or heat, that are part of equipment used to process or display open food shall comply with the requirements for light fittings above.

SECTION 3 FLOORS, WALLS AND CEILINGS

3.1 FLOORS

3.1.1 General requirements

Floors shall be—

- (a) appropriate for the area;
- (b) able to be effectively cleaned;
- (c) non-absorbent; and
- (d) laid according to the relevant Standards (see AS 3958.1 for ceramic tiles) so that there is no ponding of water and harbouring of pests.

3.1.2 Suitability of floor finishes for food premises areas

Floors shall be finished with surfaces as specified in Table 3.1.

3.1.3 Food preparation areas

Floors in food preparation areas shall be finished with one or a combination of the following materials:

- (a) Sealed quarry tiles or ceramic tiles.
- (b) Stainless steel.
- (c) Laminated thermosetting plastic sheeting.
- (d) Polyvinyl sheeting with welded seams.
- (e) Epoxy resin.
- (f) Steel trowel case hardened concrete.
- (g) Similar impervious material.

NOTE: The above is to allow the floors to be effectively cleaned.

TABLE 3.1
SUITABILITY OF FLOOR FINISHES FOR FOOD PREMISES AREAS

Finish									Comments
	Wet washed areas	Food preparation	Vegetable preparation	Servery	Store room	Chillers/freezers	Bin store	Eating areas	
Stainless steel non-slip profile	•	•	•	•	•	•	•	•	Welded joints
Ceramic tiles	•	•	•	•	•	•	•	•	Epoxy grout
Quarry tiles	•	•	•	•	•	•	•	•	Sealed
Steel trowel case hardened concrete			•		•	•	•	•	Smooth-sealed finish, no joints
Carpet/carpet tiles								•	
Wooden flooring								•	Sealed
Polyvinyl sheet	•	•	•	•	•	•	•	•	Heat-welded joints (not suitable adjacent hot fat appliances)
Laminated thermosetting plastic sheet	•	•	•	•	•	•	•	•	Heat-welded joints (not suitable adjacent hot fat appliances)
Vinyl tiles					•			•	
Plastic matting				•				•	Should be used for safety reasons only It shall be easily cleaned and laid in sections that can be removable for cleaning
Cork tiles								•	Sealed
Epoxy resins	•	•	•	•	•	•	•	•	Complying with AS 3554

Ceramic floor tiles shall be epoxy grouted and laid in accordance with the requirements of AS 3958.1.

Floors draining to a floor waste shall be evenly graded (at least 1:100) so that water falls to the floor waste.

The intersection of floors with walls and plinths shall meet the coving requirements as given in Figure 3.1.

3.1.4 Food storage areas

Storage areas for unpackaged food, including temperature-controlled storage (coolrooms), shall have floors that comply with requirements for food preparation areas.

Floors of rooms used for the storage of food enclosed in hermetically sealed containers, dry packaged goods, vegetables, and equipment shall be finished with a non-absorbent surface.

Where floors are cleaned with hose and water (or otherwise flushed with water) the intersection of floors with walls and plinths shall meet the coving requirements as given in Figure 3.1.

3.1.5 Coving

Where coving is installed at the intersection of floors with walls/plinths shall be integral to the surface finish of both floor and wall in such a manner as to form a continuous uninterrupted surface.

'Feather edge skirting' is not permitted.

Coving shall be installed in accordance with the examples in the diagrams or other method that achieves the same outcome (see Figures 3.1 and 3.2).

NOTE: Coving is required to assist with cleaning to ensure that accumulations of dirt, grease, etc., does not occur at the wall/floor junctions.

Where vinyl or similar sheeting is installed, and the sheeting turned up to form a cove, a solid preformed coving fillet shall be used to support the sheeting.

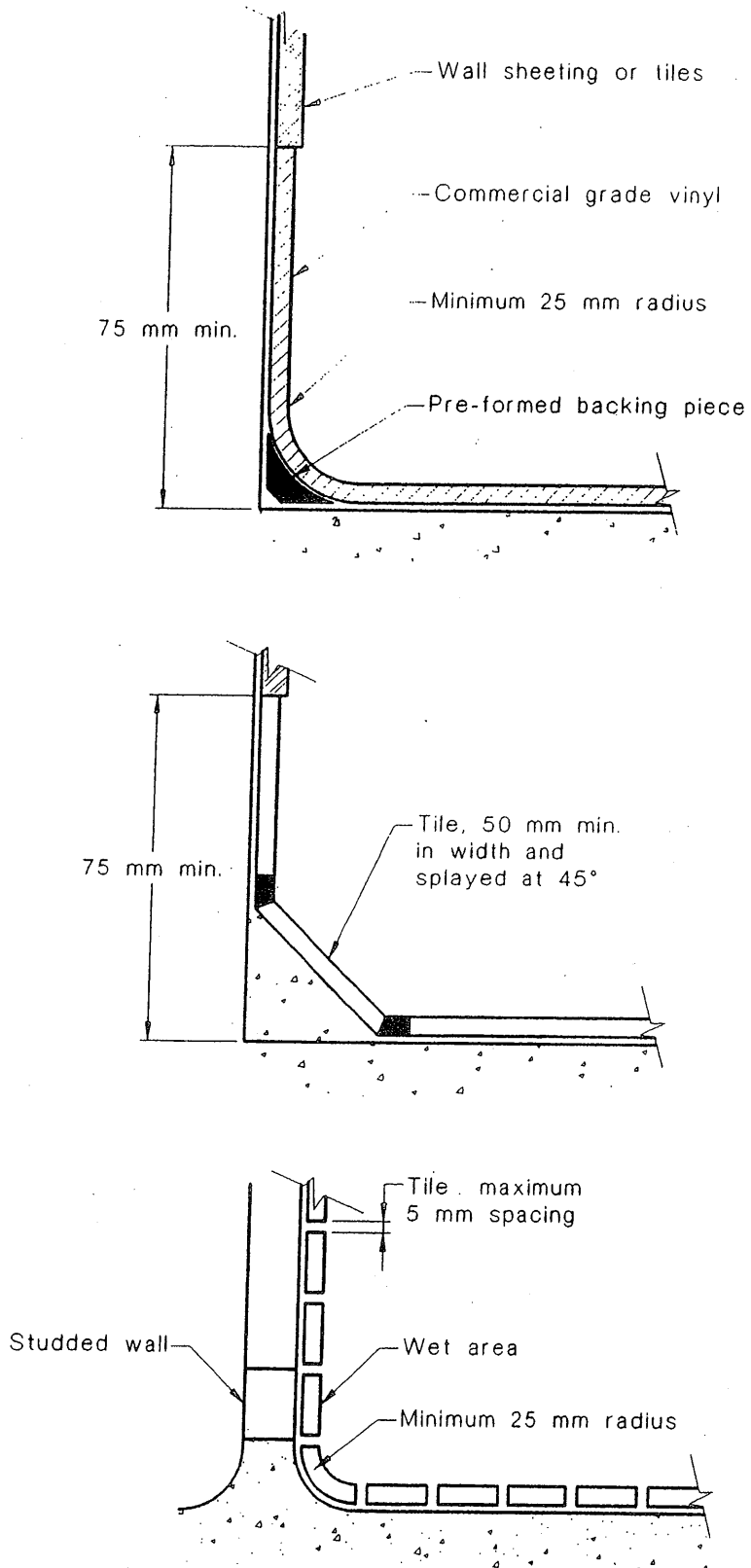
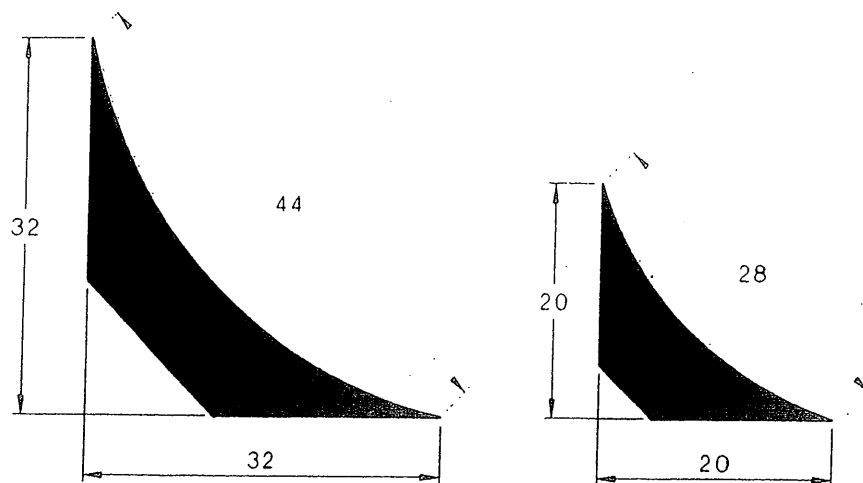


FIGURE 3.1 TYPICAL COVING METHODS



DIMENSIONS IN MILLIMETRES

FIGURE 3.2 TYPICAL PREFORMED FILLET TO SUPPORT VINYL COVING

3.1.6 Plinths

Plinths shall be of solid construction of a minimum of 75 mm in height and—

- (a) meet the same specifications as floors;
- (b) have an impervious finish;
- (c) be rounded at all exposed edges; and
- (d) be coved at the intersection of the wall and floor.

3.2 WALLS AND CEILINGS

3.2.1 General requirements for walls

Walls of all food premises shall be of solid construction and finished as specified in Table 3.2.

NOTE: The above is to prevent access and harbourage of vermin in voids and cavities. Walls made of preformed panels that are filled with suitable material meet the requirements of this Section.

TABLE 3.2
SUITABILITY OF WALL FINISHES FOR FOOD PREMISES AREAS
 (see also Clause 3.2.4)

Finish									Comments
	Wet washed areas	Food preparation	Vegetable preparation	Servery	Store room	Chillers/freezers	Bin store	Eating areas	
Stainless steel	•	•	•	•	•	•	•	•	Welded joints Waterproof screw covers
Ceramic tiles	•	•	•	•	•	•	•	•	Epoxy grout
Vinyl sheet	•	•	•	•	•	•	•	•	Heat-welded joints
Painted plaster					•			•	Smooth finish
Feature brick								•	
Aluminium sheet	•	•	•	•	•	•	•	•	Welded or sealed joints
Steel sheet							•		Welded or sealed joints
Trowelled cement		•	•	•	•	•	•	•	Polished surface
Wood panelling								•	Wood sealed
Painted brickwork					•		•	•	Flush joints and solid surfaces
Concrete					•		•	•	Sealed smooth finish
Pre-formed panels	•	•	•	•	•	•	•	•	H bars joints mastic sealed. In wet areas/food preparation shall be integrated into a dwarf wall or set on plinth

NOTE: Finishes may be used in combination.

3.2.2 Wall finishes for food preparation areas

Walls in food preparation areas shall be finished with one or a combination of the following materials:

- (a) Glazed tiles.
- (b) Stainless steel or aluminium sheeting.
- (c) Laminated thermosetting plastic sheeting.
- (d) Polyvinyl sheeting with welded seams.
- (e) Similar impervious material adhered directly to the wall.

NOTE: Polyvinyl sheeting is not suitable in areas of kitchens with excessive heat or high impact areas.

The intersection of walls and plinths with floors shall be covered.

The use of feather edge skirting is not permitted under this Standard.

The junction between adjacent wall finishes shall not form a ledge upon which dust or grease can accumulate.

The finishing materials of the wall surfaces shall provide a smooth even surface, free of buckles or ledges, fixing screws, picture rails, open joint spaces, cracks or crevices.

NOTE: This is to ensure that dirt, grease and other contaminants do not accumulate in the wall surface and to facilitate proper cleaning.

3.2.3 Wall finishes in storage areas for open food

Walls in storage areas for open food, including temperature-controlled storage, shall meet the specifications for walls in food preparation areas.

3.2.4 Wall finishes in other areas

Walls of areas not specified in Clauses 3.2.2 and 3.2.3, including storage rooms used for food enclosed in hermetically sealed containers, dry packaged goods, uncut vegetables, and equipment shall be finished with the surfaces indicated in Table 3.2.

3.2.5 General requirements for ceilings

Ceilings shall be non-perforated and finished free of open joints, cracks, crevices.

NOTE: This is to prevent contamination of food and to allow effective cleaning. It also pest proofs the ceiling.

The intersection of the walls and ceiling shall be tight jointed, sealed and dustproof.

Where a sealant is used, the sealant shall be of washable, impervious material.

NOTE: It is recommended that walls and ceilings (in areas other than dining or drinking areas of the premises) are finished in a light colour to facilitate cleaning. This is to allow dirt to be easily visible.

3.2.6 Ceilings in food preparation and storage areas

Ceilings in food preparation areas and storage areas shall be finished with impervious sealed material.

3.2.7 Ceilings in other areas

Ceilings of areas not specified in Clause 3.2.6 shall comply with Table 3.3.

TABLE 3.3

SUITABILITY OF CEILING FINISHES FOR FOOD PREMISES AREAS

Finish								Comments
	Wet areas	Vegetable preparation	Servery	Store room	Chillers/freezers	Bin store	Eating areas	
Painted plaster	●	●	●	●		●	●	Smooth finish
Steel sheet	●	●	●	●		●	●	
Trowelled cement	●	●	●	●		●	●	Polished surface
Wood panelling							●	Sealed surfaces
Concrete	●	●	●	●		●	●	Sealed smooth finish
Pre-formed panels	●	●	●	●	●	●	●	
Acoustic panels							●	Suspended T-bars
Decorative panels							●	

3.2.8 Drop-in panel ceilings (false ceilings)

Drop-in, removable panel ceilings shall not be used in food preparation areas or over areas where open food is displayed or served.

3.2.9 Pipes, conduits and electrical wiring

Service pipes, conduits and electrical wiring shall either be—

- (a) concealed in floors, plinths, walls or ceilings; or
- (b) fixed on brackets so as to provide at least 25 mm clearance between the pipe and adjacent vertical surface and 100 mm between the pipe or conduit and adjacent horizontal surfaces (see Figure 3.3).

NOTE: The brackets ensure that there is a gap between the wall and the pipes, conduits or wires to facilitate cleaning and to avoid providing harbourage areas for pests.

All penetrations shall be sealed to maintain the integrity of the original structure. Service pipes, conduits and electrical wiring shall not be placed in the recessed toe space of plinths or of any equipment.

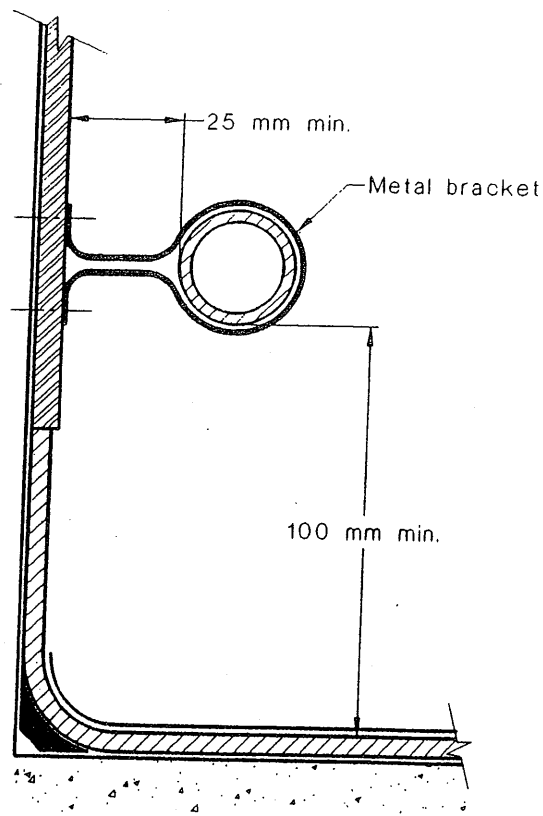


FIGURE 3.3 TYPICAL CLEARANCES FOR SERVICE PIPES AND CONDUITS

SECTION 4 FIXTURES, FITTINGS AND EQUIPMENT

4.1 EQUIPMENT FOR CLEANING AND SANITIZING

4.1.1 Provision of equipment

Premises shall be provided with equipment for cleaning and sanitizing as specified in Tables 4.1 and 4.2.

4.1.2 Hot and cold water supplies

All equipment in Tables 4.1 and 4.2 shall be connected to a continuous supply of hot and cold, or warm (if appropriate) supply of potable water.

Sinks shall be provided with water at a temperature of not less than—

- (a) 45°C for washing operations; and
- (b) 80°C for sanitizing if hot water sanitizing takes place at the sink.

All equipment shall be connected to a drainage system.

NOTES:

- 1 Refer to the relevant regulatory authority for the appropriate requirements. These requirements vary between jurisdictions.
- 2 Businesses are required under Food Safety Standard 3.2.2 of Food Standard Code, to sanitize eating and drinking utensils and food contact surfaces that are likely to contaminate food. The type of equipment that is necessary will depend on the methods used for cleaning and sanitizing.
- 3 Equipment for washing or otherwise preparing food will depend on the food operations proposed (or taking place).
- 4 Dishwashers and glasswashers are a more effective method of sanitizing.

TABLE 4.1
MINIMUM REQUIREMENTS FOR EQUIPMENT IN PREMISES

Type of premises	Minimum facilities
Premises selling pre packaged food and drink and/or uncut fruit and vegetables	Single bowl sink
All other premises.	Double bowl sink <i>or</i> Dishwasher/glasswasher and single bowl sink (where all the food contact equipment will fit in the dishwasher/glasswasher) <i>or</i> A double bowl sink and a dishwasher/glasswasher (where some equipment has to be washed/sanitized in the sink) <i>or</i> A triple bowl sink (where rinsing is required before or after sanitizing e.g., wash, rinse, sanitize procedure or wash, rinse/sanitize, rinse procedure)

TABLE 4.2
FACILITIES FOR CLEANING AND SANITIZING

Cleaning and sanitizing operations	Minimum facilities
Premises using equipment that is— <ul style="list-style-type: none"> ◦ to be washed in sinks; ◦ will not fit into a standard double bowl sink; and ◦ the equipment does not require sanitizing 	Pot sink of size adequate for largest equipment
Premises using equipment that is— <ul style="list-style-type: none"> ◦ to be washed in sinks ◦ will not fit into a standard double bowl sink; and ◦ the equipment has surfaces that are to be sanitized 	Double pot sink adequate for largest equipment
Premises where foods are prepared by immersion in water	Designated food preparation sink(s)
Premises where floors, etc., are wet washed	Cleaners sinks floor waste or the like
Premises where floors and/or equipment are to be hosed	Hose connections

4.1.3 Requirements for double- and triple-compartment sinks including double- and triple-compartment pot sinks

Where a double- or triple-compartment sink is used for hot water sanitizing, the rinsing compartment shall be provided with heating elements capable of maintaining the water temperature at a minimum of 80°C and provision for rinsing basket(s) (see Figure 4.1).

4.1.4 Loading, drainage and drying space at sinks

All sinks shall be provided with—

- (a) adjacent loading space; and
- (b) adjacent draining and/or drying space.

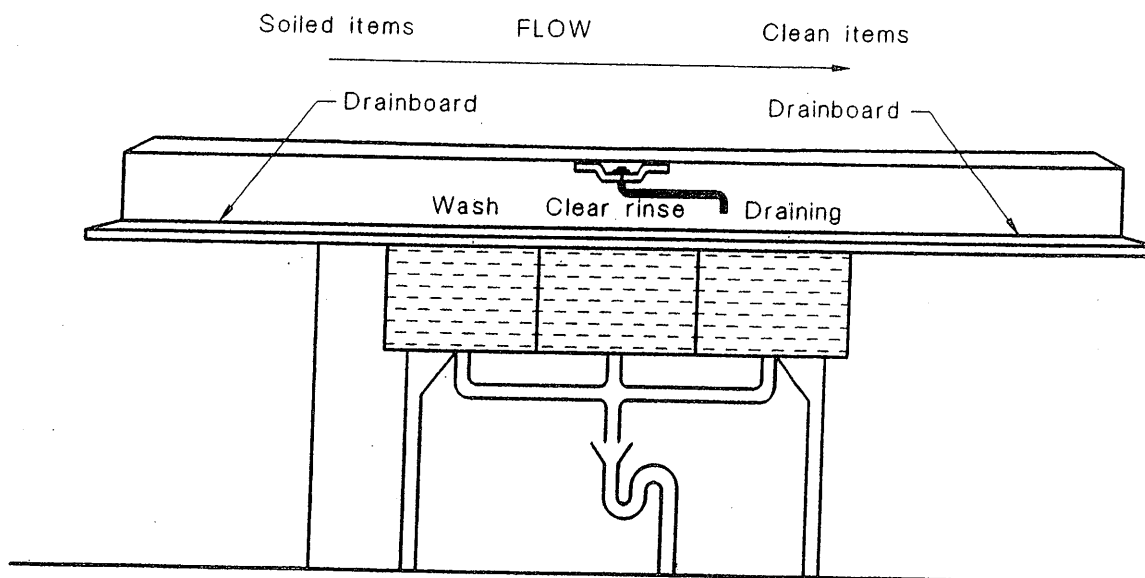


FIGURE 4.1 TYPICAL TRIPLE-COMPARTMENT SINK AND WASTE

4.1.5 Requirements for dishwashers/glasswashers

Heated water shall be supplied to dishwashers and glasswashers.

The dishwasher/glasswasher shall be capable of washing and rinsing in one continuous operation.

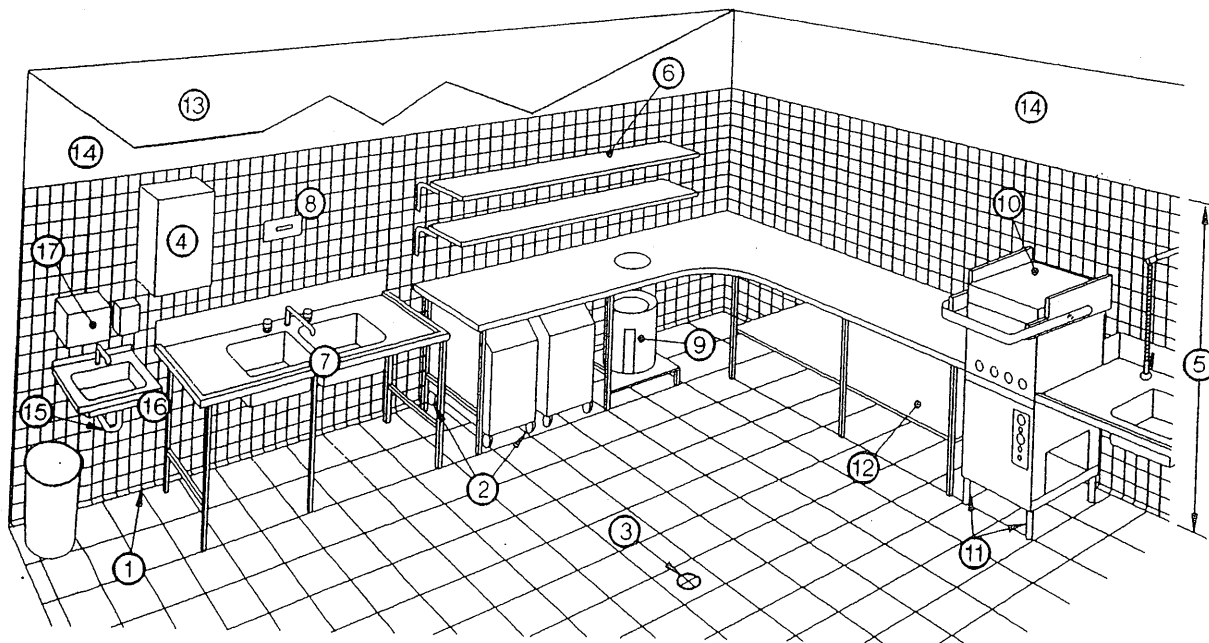
Where hot water in the dishwasher/glasswasher is used to sanitize, the dishwasher/glasswasher shall only operate on the sanitize cycle when the water is at sanitizing temperature.

Brushes are not permitted in glasswashers used for washing and sanitizing or in glasswashers used solely for sanitizing.

4.1.6 Dishwasher/glasswasher sanitizing temperatures

Dishwashers and glasswashers that are used to sanitize food contact surfaces and eating and drinking utensils shall be designed to operate so that the temperature of water used in the sanitizing rinse cycle, combined with the time that the utensils are rinsed in water at that temperature (or a combination of time and temperature in wash, rinse and sanitizing rinse and or drying cycles) shall be sufficient to ensure that the utensils are sanitized.

NOTE: AS 2945 requires utensils to undergo a sanitizing rinse at 80°C for 2 min or 75°C for 10 min or 70°C for 15 min.



LEGEND:

- | | |
|---|--|
| ① = Floor/wall coving | ⑩ = Dishwasher with temperature indicating device |
| ② = Castors to under bench storage | ⑪ = Legs 150 mm min. |
| ③ = Impervious floor graded and drained | ⑫ = Underside of support bracket 150mm to the finished floor surface |
| ④ = Hot water heater sealed to wall | ⑬ = Painted plasterboard ceiling |
| ⑤ = Walls tiled | ⑭ = Smooth cement rendering |
| ⑥ = Shelving 25 mm clear of wall | ⑮ = Water drainage pipes concealed into walls |
| ⑦ = Sink unit on metal frame | ⑯ = Hand basin, hot and cold water mixing set |
| ⑧ = Thermometer | ⑰ = Soap and towel dispenser |
| ⑨ = Garbage receptacle | |

FIGURE 4.2 TYPICAL WASH-UP AREA

4.1.7 Chemicals

Where chemicals are used in the dishwasher/glasswasher to sanitize—

- (a) the dishwasher/glasswasher shall be designed to use chemical sanitizers; and
- (b) rinsing shall ensure that no chemical residue remains.

Dishwashers/glasswashers shall be installed in accordance with requirements for fixtures, fittings and equipment (see Clause 4.3).

4.1.8 Requirements for disposal of waste water

Premises shall be provided with facilities for disposing of mop water and similar liquid waste. These facilities shall be—

- (a) a cleaner's or sluice sink;
- (b) floor waste; or
- (c) other similar facility connected to drainage that is not intended for use to prepare food, wash any equipment or for hand/face/arms washing,

and located outside of areas where open food is handled.

4.2 DESIGN AND CONSTRUCTION OF FIXTURES, FITTINGS AND EQUIPMENT

4.2.1 Design and construction requirements

Fixtures, fittings and equipment shall be designed and constructed in accordance with the requirements given in Table 4.3.

Any fixtures, fittings and equipment not included in Table 4.3 shall be constructed so as to be capable of being easily and effectively cleaned.

TABLE 4.3
SPECIFIC REQUIREMENTS FOR FIXTURES, FITTINGS AND EQUIPMENT

Type of fixture, fitting or equipment	Requirements
Refrigerated counters—whether a number of refrigerated cabinets or a frame in one piece	A continuous top of stainless steel cast or welded in one piece, free of open or rough joints, cracks and crevices and rough surfaces Raised edge or lip formed around each opening in the bar top sufficient to prevent material falling into the food wells
Counters and bars, food display units, window display and self-service display cabinets and bain-maries	All surfaces shall be smooth, durable, impervious and free from cracks, crevices and cavities The underside shall have an impervious finish Window displays for wet foods, e.g., meat, fish shall be covered at all intersections and installed in accordance with AS/NZS 3500.2.2
Cupboards and cabinets	The rear face of plywood, hardboard and similar materials used for backing shall be finished with a smooth, washable surface No backing shall be provided where the cupboard abuts a wall but the wall shall be finished with a smooth washable surface
Doors for cupboards and cabinets	Sliding doors shall be hung from the top of the door (if fitted) Bottom guides or runners shall terminate not less than 25 mm from each end of the door opening
Counters for food preparation in front of the customer	Protective barrier to provide a physical barrier between the customer and the food
Dumb waiters (food conveyors)	The compartment holding the food must be made of smooth impervious surfaces, free from crevices and open joints The walls of the shaft of vertical conveyors must be made of smooth material, free of crevices and cracks Access must be provided for cleaning

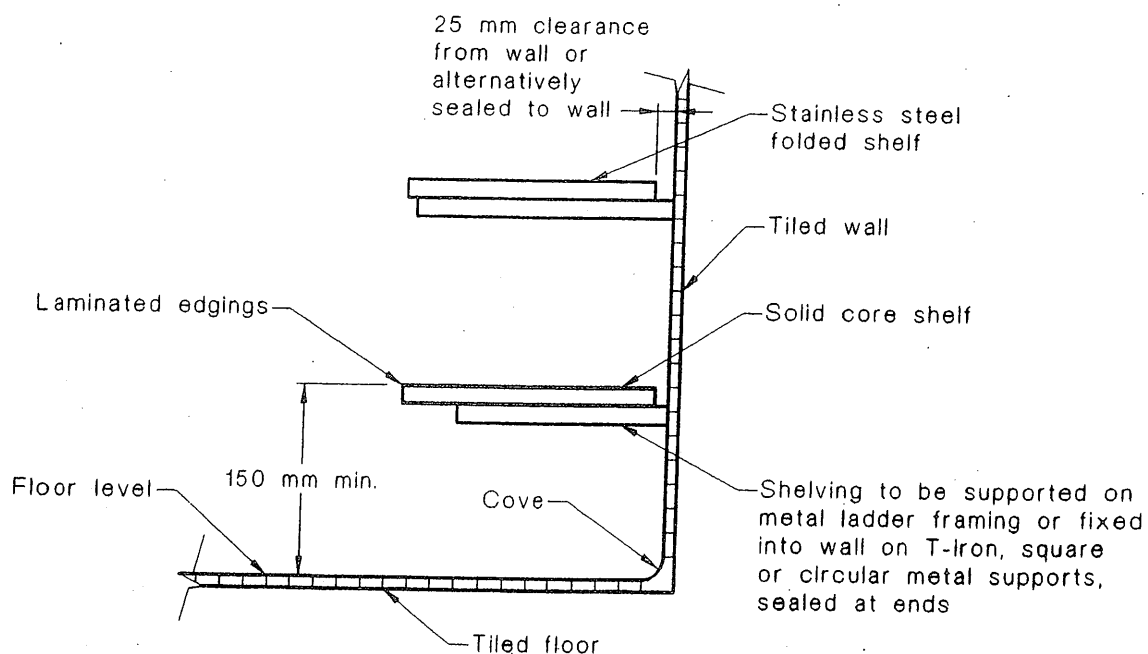


FIGURE 4.3 TYPICAL ARRANGEMENT—SHELVING

4.2.2 Materials

Fixtures, fittings and equipment shall be designed and constructed of metal, plastic or sealed timber sheeting or other impervious material in accordance with Table 4.4.

TABLE 4.4
MATERIALS

Materials	Application	Comments
Stainless steel of grade appropriate to use	To be used where the surface is in direct contact with food	Durable Withstands chemicals and contact with food
Iron and mild steel	To be used where the surface does not come into direct contact with food	Very susceptible to corrosion although this can be partially controlled by painting Galvanized iron not recommended for equipment since zinc is toxic, soluble in fruit acids and in both acidic and alkali detergents Zinc wears off and exposed iron corrodes
Copper and alloys (brass, bronze)	Unsuitable for general use in contact with food unless coated with tin	Fairly resistant to corrosion and good heat conductor
Aluminium	Suitable for cooking equipment where not in contact with corrosive acids or alkalis	
Plastics	Suitable for a wide variety of uses	Wide variety of types and uses
Laminates	Laminated chipboard or other laminated absorbent materials are not to be used for shelving or surfaces where they may be affected by water	More easily abraded than metals
Sealed wood	Only to be used if sealed to be impervious to moisture and grease Not to be used in contact with food or in areas cleaned frequently using water	Wooden chopping boards and benches suitable under specific circumstances for example butchery, some bread-making operations and some cheese processing

4.3 INSTALLATION OF FIXTURES FITTINGS AND EQUIPMENT

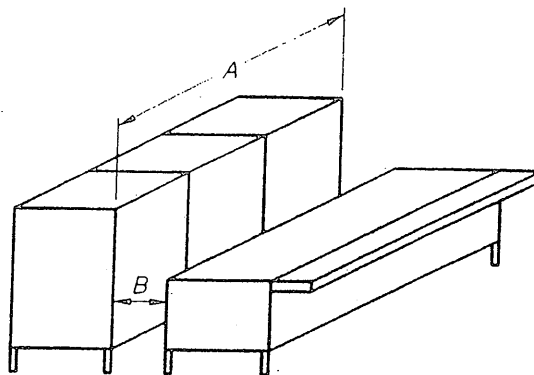
4.3.1 Installation

Equipment shall be—

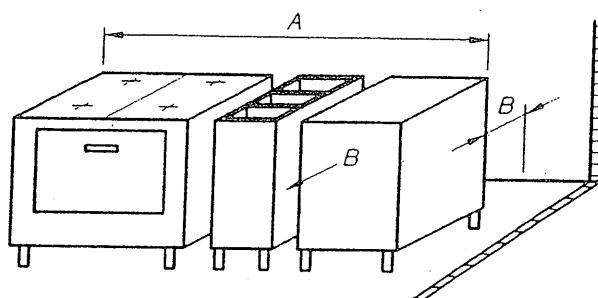
- (a) moveable for cleaning;
- (b) built into walls with the enclosure completely vermin proofed;
- (c) butted against walls or other equipment and the joints sealed;
- (d) installed at the clearance specified in Figure 4.4; or
- (e) if installed on a plinth, installed such that it overhangs the plinth.

Where equipment cannot be moved easily, clearance space shall be provided (see Figure 3.1) so that the area surrounding the equipment and that beneath can be cleaned without moving it.

NOTE: 'Moved easily' is intended to mean that the equipment can be moved by one person (either on wheels, castors, legs or sitting direct on a surface) to enable cleaning as frequently as necessary to ensure that, for example, food debris can be swept from underneath and the floor mopped.



(a) Equipment seated together



(b) Equipment spaced apart

Equipment length A, mm	Space from walls and equipment B, mm
1200 or less	150
1200–2400	300
2400 or more	450

FIGURE 4.4 EQUIPMENT SPACING FROM WALLS, PROVIDED ACCESS IS AVAILABLE FROM BOTH ENDS

4.3.2 Supports for equipment

Supports shall be in accordance with Table 4.5 and Figure 4.5.

Open ends of tubular steel used for legs and brackets shall be permanently capped or sealed.

Equipment that is fitted directly to the floor or directly to plinths shall be—

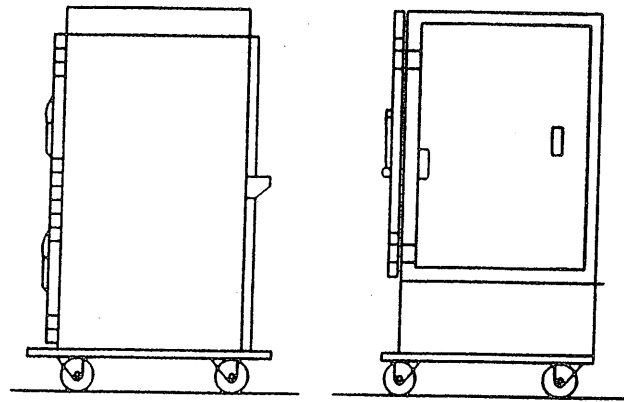
- (a) fitted with a base that will not corrode when in contact with water and cleaning chemicals; or
- (b) installed in such a manner that a complete seal is made between the floor and the base of the cabinets and grease, dirt or water cannot penetrate beneath.

Equipment that is placed on bench tops or other work surfaces shall be—

- (i) moveable by one person (see Figure 4.5);
- (ii) sealed to the bench or counter top in such a manner as to eliminate any open joint, space, crevice or cavity.

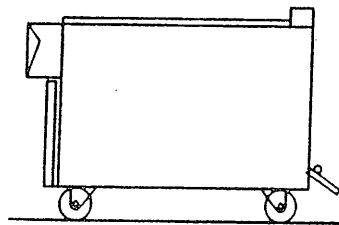
TABLE 4.5
SUPPORTS FOR EQUIPMENT

Support	Requirements
Wheels or castors	<p>Wheels or castors shall be able to support the weight of the fully loaded equipment and enable it to be easily moved</p> <p>There shall be sufficient space to move the equipment to allow access to the floor beneath and the walls adjacent to the equipment for cleaning purposes</p> <p>(under OH&S legislation restraining straps may be required to be fitted to equipment connected to gas and the wheels to be lockable)</p>
Plinths	See floors
Legs	<p>Supporting legs shall be metal or moulded plastic that will not be corroded by water or cleaning chemicals</p> <p>Tubular steel that is used as supporting legs shall be capped or sealed to prevent the access of vermin</p> <p>Legs shall be—</p> <ul style="list-style-type: none"> • finished smooth, and • free of cavities, crevices, ledges, recesses, etc., that permit the lodgement of dust and grease or provide areas inaccessible for cleaning <p>Legs shall be designed and securely fixed so that there is a clear space between the floor and the underside of the fitting of not less than 150 mm</p> <p>Service pipes shall not be located in the space beneath fittings unless they run vertically and a clear space of not less than 25 mm is provided between the service pipe and any adjoining surface</p>
Brackets	<p>Brackets shall be metal that will not be corroded by water or cleaning chemicals</p> <p>Where tubular steel is used, the open ends shall be capped or sealed to prevent the access of vermin</p> <p>Pressed metal brackets having hollow backs shall not be used unless any gap is completely filled</p> <p>Supporting brackets shall be securely fixed so that—</p> <ul style="list-style-type: none"> • cracks and crevices are not formed; and • a clear space between the floor and the underside of the fitting of not less than 150 mm is provided. <p>Service pipes are not permitted in the space beneath fittings unless they run vertically and a clear space of not less than 25 mm is provided between the service pipe and any adjoining surface</p> <p>Brackets shall be—</p> <ul style="list-style-type: none"> • finished smooth; and • free of cavities, crevices, ledges, recesses, etc. that will permit the lodgement of dust and grease or provide areas inaccessible for cleaning
Framework	<p>As above</p> <p>In addition to the above, framework shall be—</p> <ul style="list-style-type: none"> • designed and fixed in such a manner that easy access is available for cleaning the framework and adjacent surfaces; and • designed to prevent access and harbourage of vermin.



(a) Holding cabinet

(b) Reach-in refrigerator



(c) Electric fryer

FIGURE 4.5 TYPICAL KITCHEN EQUIPMENT MOUNTED ON CASTORS

4.4 HAND WASHING FACILITIES

4.4.1 General requirements

Handbasins shall be provided in all parts of the premises—

- (a) where open food (see Clause 1.3.1) is handled;
- (b) in utensil/equipment washing areas; and
- (c) in toilet cubicles or immediately adjacent to toilets.

NOTE: Handbasins should be located at the staff entrance to areas where open food is handled; that is, the entrance used by staff returning to the food handling area (see Figure 3.3).

Handbasins shall be located and installed so that they are—

- (d) not obstructed;
- (e) are at bench height either permanently fixed to the wall, to a supporting frame (freestanding handbasins) or set in a bench top; and
- (f) accessible and no further than 5 m, except for toilet handbasins, from any place where food handlers are handling open food (see Clause 1.3.1).

4.4.2 Water supply to basins

The handbasin shall have a permanent supply of warm running potable water delivered through a single outlet.

NOTES: The above may be achieved by any one of the following:

- (a) Instantaneous water heater preset to provide warm water to the basin.
- (b) Thermostat-controlled water heater.
- (c) Hot and cold water supplies delivered through a mixer tap.
- (d) Water from a single outlet at a temperature controlled by a thermostatic mixing valve.

Where the supply of water is automatically timed, warm water shall be available for a minimum time of 15 s before flow ceases.

NOTE: It is not implied that handwashing can be completed in 15 s but that several bursts of water (each of 15 s min.) may be needed to complete a wash and rinse.

4.4.3 Specific design requirements

Space for washing between the spout and base of the handbasin shall not interfere with the carrying out of the following operations:

- (a) Washing of hands.
- (b) Washing of hands and arms.

Taps that operate hands free shall be provided at all handbasins.

Handbasins shall be provided with—

- (i) a towel dispenser that dispenses a single-use paper or cloth towel or automatically dispenses a single-use portion of paper or cloth towel; or
- (ii) other means of effectively drying hands and arms, which prevents the transfer of pathogenic microorganisms to the hands or arms.

Airdryers installed as the sole means of drying hands are not permitted.

A receptacle for used towels shall be provided.

NOTE: It is recommended that single-use paper or cloth towels are used. These may be used in combination with air dryers. Studies indicate that thoroughly drying hands is a key factor in preventing pathogen transfer.

SECTION 5 STORAGE AND TOILET FACILITIES

5.1 STORAGE

5.1.1 Clothing and personal effects

Facilities for storing clothing and personal effects belonging to staff shall be—

- (a) a change room;
- (b) lockers or cupboards in a change room; or
- (c) enclosed cupboards dedicated for the storage of clothing and personal belongings located outside of food preparation, food processing, food storage and utensil washing areas.

Where staff routinely change uniforms and/or clothes on the premises, the facilities for clothing and personal belongings shall be provided in a change room.

NOTES:

- 1 WA reg 22 Sc 4 size given for change room is at least 3 m² with an additional 0.75 m² for each person in excess of four.
- 2 In BCA Qld, where the nature of the work requires employees to change in and out of apparel specific to that work, a dressing room for each sex has to be provided. There are specific details as to the design and fit out of those dressing rooms-Qld H101.9.

5.1.2 Cleaning chemicals and similar materials

Facilities for storing cleaning chemicals, cleaning equipment, pest control chemicals and equipment shall be—

- (a) a room designated for that use; or
- (b) enclosed cupboards dedicated for that use, located away from food preparation, food storage and display areas and not able to contaminate personal effects/clothing.

5.1.3 Office materials

Facilities for storing paperwork and other materials associated with the administration of the business shall be—

- (a) a room designated for office use; or
- (b) enclosed cupboards, drawers or similar sealed storage dedicated for that use.

5.2 TOILET FACILITIES

5.2.1 General

Provision of sanitary facilities shall be in accordance with the Building Code of Australia.

Where toilets are provided on the food premises, toilet cubicles shall be—

- (a) separated from areas where open food is handled, displayed or stored by an intervening ventilated space fitted with self-closing doors; or
- (b) provided with self-closing doors and mechanical exhaust system that operate when the sanitary compartment is in use and for at least 30 s after the cubicle is vacated.

Food premises should be provided with toilets for staff on the premises. Separate toilets, including handwashing facilities, should be provided for public/customers, as per the requirements at Clause 4.4.

5.2.2 Access to toilets

Toilets intended for public and/or customer use shall not be accessed through areas where open food (see Clause 1.3.1) is handled, displayed or stored (other than customer areas such as dining areas).

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