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Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

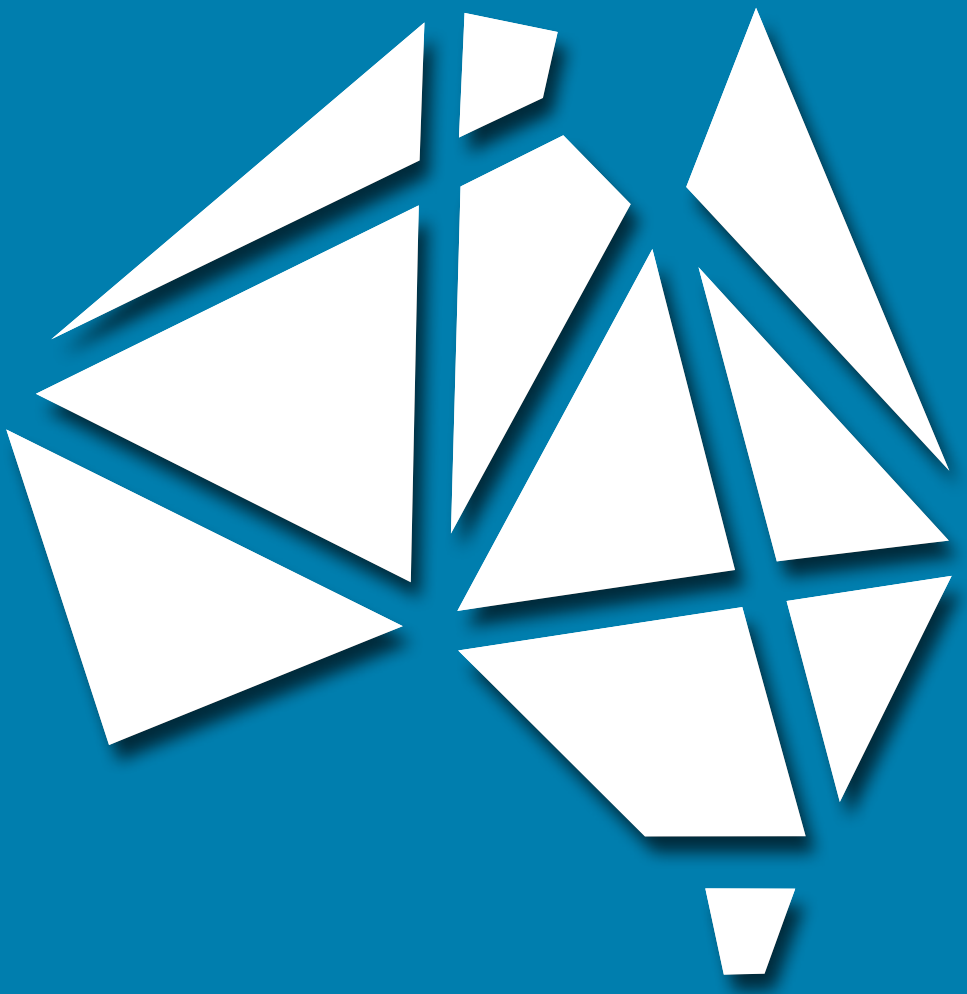
SAFE FOOD AUSTRALIA

4th Edition, February 2023 (Revised November 2024)

A Guide to the Food Safety Standards

Chapter 3 of the Australia New Zealand Food Standards Code (applies to Australia only)

2023



SAFE FOOD AUSTRALIA

A Guide to the Food Safety Standards

Chapter 3 of the Australia New Zealand Food Standards Code (Australia only)

Standard 3.1.1 – Interpretation and Application

Standard 3.2.2 – Food Safety Practices and General Requirements

Standard 3.2.2A – Food Safety Management Tools

Standard 3.2.3 – Food Premises and Equipment

Fourth Edition, February 2023 (Revised October 2024)

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Status and context of the document

This document relates to four food safety standards in Chapter 3 of the *Australia New Zealand Food Standards Code* (the Code). These standards apply only in Australia. They are:

3.1.1 – Interpretation and Application

3.2.2 – Food Safety Practices and General Requirements

3.2.2A – Food Safety Management Tools

3.2.3 – Food Premises and Equipment

The information provided in this document is not legally binding.

This document was prepared by Food Standards Australia New Zealand (FSANZ) to assist government agencies responsible for enforcing the Code in Australia.

State and territory food agencies are primarily responsible for interpretation and enforcement of the Code in Australia. This is because the food standards that comprise the Code are applied in Australia by state and territory food laws. It is the state and territory food laws that make failure to comply with Code requirements an offence. At the Commonwealth level, the Australian Government Department of Agriculture, Fisheries and Forestry administers the *Imported Food Control Act 1992* (Cth), which applies the food standards to imported food. These agencies work together through the Implementation Subcommittee for Food Regulation (ISFR) to ensure food laws are implemented and enforced consistently.

FSANZ prepared and published this document at the request of ISFR. FSANZ is not an enforcement agency and cannot provide advice or guidance on food compliance issues.

This document will be reviewed and amended as necessary. Readers may contact the Food Safety team of FSANZ if they have feedback. Email: information@foodstandards.gov.au.

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Introduction

There are six national food safety standards that apply in Australia:

- 3.1.1 — Interpretation and Application
- 3.2.1 — Food Safety Programs
- 3.2.2 — Food Safety Practices and General Requirements
- 3.2.2A — Food Safety Management Tools
- 3.2.3 — Food Premises and Equipment
- 3.3.1 — Food Safety Programs for Food Service to Vulnerable Persons.

These standards provide a risk-based, preventative approach to providing safe and suitable food. They are based on the principle that food safety is best ensured by implementing food hygiene controls at each stage of food handling and that additional risk management tools, such as food safety programs, may be required for high-risk food industry sectors.

Of the six standards, Standards 3.1.1, 3.2.2 and 3.2.3 apply to all Australian food businesses and establish fundamental requirements for minimising food safety risks. Standard 3.2.2A applies to food service and retail businesses that handle unpackaged, potentially hazardous food that is ready to eat food. Safe Food Australia provides information to assist with understanding the intent of these four standards, including the food safety outcome(s) intended.

The information in this document is primarily intended to assist regulatory authorities but it may also be useful for food businesses. Safe Food Australia includes clarifications, examples and recommendations based on scientific evidence and industry best practice. It is not an interpretation of the *Australia New Zealand Food Standards Code* (Food Standards Code) and is not a legally binding document. The Food Standards Code is enforced in all Australian jurisdictions through state and territory Food Acts. Food businesses needing information on complying with the food safety standards should contact their local food regulatory agency for advice.

Food safety risks will vary from business to business depending on the nature of the food business and the food handling operations undertaken. For example, factors such as inherent hazards in the food, the potential for contamination during food handling and how the food is processed contribute to food safety risks. Information provided in Safe Food Australia highlights factors that may contribute to these risks at each step of the food handling process. Appendices also provide technical and practical information.

Using this guide

- The text of the standards is included in bold type throughout the explanatory sections of the document for convenient reference. The authoritative versions of these standards are on the Australian Government Federal Register of Legislation, accessible from the FSANZ website.
- The intended outcome for each clause of the standards is set out in the lightly shaded box that precedes the explanation for that clause.
- Examples aim to highlight key principles and illustrate the intent of the requirements. However, they are examples only and the options provided are not exhaustive.

STANDARD 3.1.1
INTERPRETATION AND APPLICATION

STANDARD 3.1.1
INTERPRETATION AND APPLICATION

1 Interpretation and application

Standard 3.1.1 defines terms that are used only in this standard or in Standards 3.2.2, 3.2.2A and 3.2.3. Terms that are used in only one of the other standards are defined in the standard in which they are used.

The definitions given in the food safety standards apply to the interpretation of these standards whether or not the words are defined in state and territory food legislation.

Some of the definitions in Standard 3.1.1 refer to the 'Act'. The phrase 'the Act' was defined in Standard 1.1.1 of the previous Code to mean the Act which gives the food regulatory authority to apply the Food Standards Code. Standard 1.1.1 of the revised Code does not include a definition of the phrase. Instead it refers to an 'application Act' which is defined to mean an Act or Ordinance of the Commonwealth, state or territory that applies the requirements of the Code. The references in Standard 3.1.1 to 'the Act' should be read as a reference to an 'application Act'.

Terms that are not defined in this standard or by other standards in the Code or by the food laws that apply standards in the Code should be given their ordinary meaning. Section 1.1.1–4 of the Code also provides that the Code is to be interpreted in accordance with the *Acts Interpretation Act 1901* (Cth).

Definitions

Underlined words are also defined in this standard.

appropriate enforcement agency means an enforcement agency prescribed by the regulations under the Act for the purposes of enforcement of the Act or similar purposes.

Each state and territory Food Act specifies the agency responsible for the enforcement of the Act and any regulations or standards referred to in the Act.

This term is used in Standard 3.2.2 clause 4 and in relation to exemptions from requirements in subclauses 15(5), 17(2) and 17(3). It is also used in relation to exemptions from requirements in Standard 3.2.3 paragraph 10(3)(b) and subclause 14(4).

authorised officer means a person authorised or appointed under the Act or other legislation for the purposes of enforcement of the Act, or similar purposes, such as an 'authorised officer', 'environmental health officer' or 'inspector'.

Each state and territory Act specifies the persons who have the authorisation to enforce the Act and associated regulations or standards.

The term is used in Standard 3.2.2 subclause 5(2), clause 12 and subclause 18(2) and in Standard 3.2.2A sections 3.22A-2 and 3.2.2A-12 in relation to information provided by a food handler.

clean means clean to touch and free of extraneous visible matter and objectionable odour.

The definition clarifies that 'clean' is a state that can be assessed physically by sight, touch and smell.

'Cleanliness', 'cleaned' and 'cleaning' are also used in the standards, with the same intent as 'clean'.

The term is used in Standard 3.2.2 in regard to hand washing and equipment, fittings and fixtures. It is also used as part of the definition of 'clean and sanitary condition' in subclause 20(2). 'Clean' is also used in Standard 3.2.3 in regard to the design and construction of food premises, garbage storage, equipment, utensils and food storage areas of vehicles to allow effective cleaning.

contaminant means any biological or chemical agent, foreign matter, or other substances that may compromise food safety or suitability.

Biological agents include microorganisms such as bacteria, viruses and moulds. Chemical agents include metals, pesticides and other chemicals that could contaminate food. Foreign matter includes physical objects that may be in food, such as string, paperclips and glass. Other substances are included to ensure that all materials that may affect food safety or suitability are covered.

'Contaminant' is used in this standard and Standard 3.2.3.

contamination means the introduction or occurrence of a contaminant in food.

Contamination of food has occurred if any of the contaminants referred to above are present in the food.

Food contamination can occur, for example, from:

- pathogenic microorganisms in raw food, unclean surfaces and utensils, or unwashed hands
- chemicals migrating from packaging or other contact surfaces that are not food-grade quality, or being accidentally spilt or sprayed onto food
- foreign objects such as pests, droppings, glass, dirt, jewellery and hair falling or otherwise being mixed into food.

It is important to note that the look, smell or taste of a food may not change as a result of contamination. Protecting food against contamination in storage, display, handling and transport is referred to in Standards 3.2.2, 3.2.2A and 3.2.3.

equipment means a machine, instrument, apparatus, utensil or appliance, other than a single use item, used or intended to be used in or in connection with food handling and includes any equipment used or intended to be used to clean food premises or equipment.

The intention is to ensure that all equipment that is used to produce food and in cleaning procedures in the food premises is covered by the requirements. There are specific requirements for single use items. 'Equipment' is used in Standard 3.2.2 clauses 8, 19, 20 and 21; Standard 3.2.3 clauses 3, 12 and 13; and Standard 3.2.2A section 3.2.2A-2.

food business means a business, enterprise or activity (other than primary food production) that involves:

(a) the handling of food intended for sale, or

(b) the sale of food,

regardless of whether the business, enterprise or activity concerned is of a commercial, charitable or community nature or whether it involves the handling or sale of food on one occasion only.

The definition is crucial to applying the food safety standards and should be read in conjunction with the definition of 'handling', 'sell' and 'primary food production'. The words 'commercial', 'charitable' and 'community' take their ordinary meanings. The intention is to cover all food businesses (other than primary food producers) whether or not the food is intended for sale for charity or for commercial purposes.

The definition applies regardless of the quantity of food involved, the frequency with which food is handled or sold or the type of premises. For example, it covers the sale of food through the internet, from home and through food vending machines. It covers any food handling operations including food storage and transport.

food handler means a person who directly engages in the handling of food, or who handles surfaces likely to come into contact with food, for a food business.

The definition covers people who prepare food and/or handle surfaces likely to come into contact with food, for example a person cleaning eating and drinking utensils. Food handlers must comply with the health and hygiene requirements in Standard 3.2.2.

food handling operation means any activity involving the handling of food.

Examples of food handling operations are: preparing meat and vegetables for cooking, preparing salads, serving meals and packaging food for sale.

The term is used frequently in the standards to clarify that the requirement applies only in relation to these operations. For example, food handlers are obliged to comply with hygiene requirements in clause 15 in Standard 3.2.2 only when engaging in any food handling operations.

food premises means any premises including land, vehicles, parts of structures, tents, stalls and other temporary structures, boats, pontoons and any other place declared by the relevant authority to be premises under the Food Act kept or used for the handling of food for sale, regardless of whether those premises are owned by the proprietor, including premises used principally as a private dwelling, but does not mean food vending machines or vehicles used only to transport food.

The definition covers all types of structures that are used by food businesses, including boats, ships and planes. In addition, land used by a food business is covered. Premises permanently used by the business (whether buildings or mobile structures such as vans) and temporary premises such as market stalls, tents, barbeque stands, etc. are also covered.

Outdoor dining areas on the street are part of the food premises serving the food. Note that 'Division 3 — Floors, walls and ceilings' does not apply to dining areas.

Premises that are principally private dwellings but would be classed as food premises include premises used for bed and breakfast, child care involving the supply of food, and domestic premises where the handling of food for sale occurs.

Note that food vending machines may be considered as food premises in state or territory legislation. For example, in Queensland vending machines are defined as mobile premises as they can be stand-alone premises moved between locations. For further information, refer to the relevant food authority.

food safety standards means the standards contained in Chapter 3 of the Australia New Zealand Food Standards Code.

Currently these are Standards 3.1.1, 3.2.1, 3.2.2, 3.2.2A, 3.2.3 and 3.3.1. The term is used only in Standard 3.1.1, in the definitions of 'safe' and 'suitable', and in the application and compliance provisions.

handling of food includes the making, manufacturing, producing, collecting, extracting, processing, storing, transporting, delivering, preparing, treating, preserving, packing, cooking, thawing, serving or displaying of food.

This is intended to cover all the activities that take place in relation to food before it is sold. It is not restricted to the activities listed.

hazard means a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect in humans.

As part of a food safety program, a business must identify potential hazards that are expected to occur in the business's food handling operations. These hazards may be biological, chemical or physical agents in the food. Pathogenic microorganisms are an example of biological agents in food. Chemical agents include pesticides, toxic metals and veterinary chemical residues. Physical agents in food include foreign matter such as glass or metal fragments. A hazard may also be material intrinsic to the food but unacceptable in the final product: bones in fish products are an example.

The definition also covers biological, chemical and physical conditions of food. This means that the food is (or has the potential to be) in a state that needs to be controlled by the food safety program. An example is a food that is known to be poisonous, for example certain mushrooms, when the specific agent causing the illness may not be able to be identified.

The term is used in the definition of a food safety program in Standard 3.2.2.

While allergens are not specifically covered as a hazard, food businesses should be aware of, and proactively manage, issues associated with allergens and allergen management. See subclause 2(2).

pests include birds, rodents, insects and arachnids.

The intention is to ensure that the requirements cover all animals that could contaminate food either directly or indirectly. It is not restricted to the animals listed.

It is used in clause 24 of Standard 3.2.2 and clauses 3, 6, 10, 11 and 12 of Standard 3.2.3.

primary food production means the growing, cultivation, picking, harvesting, collection or catching of food, and includes the following:

(a) the transportation or delivery of food on, from or between the premises on which it was grown, cultivated, picked, harvested, collected or caught,

(b) the packing, treating (for example, washing) or storing of food on the premises on which it was grown, cultivated, picked, harvested, collected or caught, and

(c) any other food production activity that is regulated by or under an Act prescribed by the regulations for the purposes of this definition.

However, primary food production does not include:

(d) any process involving the substantial transformation of food (for example, manufacturing or canning), regardless of whether the process is carried out on the premises in which the food was grown, cultivated, picked, harvested, collected or caught, or

(e) the sale or service of food directly to the public, or

(f) any other food production activity prescribed by the regulations under the Act for the purposes of this definition.

This definition has been included to exclude primary production activities from Standards 3.2.2 and 3.2.3. It does this by excluding primary food production from the definition of food business and thereby excluding it from the application and compliance provisions of this standard. Requirements for primary production activities are included in Chapter 4 of the Food Standards Code. Primary production and processing standards have been developed for seafood, meat, poultry meat, eggs, dairy products, seed sprouts and (effective from 2025) berries, leafy vegetables and melons.

The definition is intended to ensure that if the food is subjected, by a primary food producer, to a process that substantially transforms the food, or if it is sold or served directly to the public, it is covered by these standards.

States and territories have the mechanism under the definition to include and exclude specific types of food businesses from the application of the standards. The term is used only in clause 1 of this standard.

proprietor of a food business means:

(a) the person carrying on the food business, or

(b) if that person cannot be identified — the person in charge of the food business.

The proprietor of a food business is obliged to comply with the standards except where it is stated that a food handler is directly responsible for compliance. There may be circumstances in which it is not possible to identify who is actually conducting the food business, for example because there are communication difficulties or the business is unwilling to provide that information. In these circumstances the proprietor is then the person who, in the opinion of the regulatory agency, is in charge of the business.

'Proprietor' is used in the definitions and compliance provisions in this standard and in clauses 4, 17 and 18 of Standard 3.2.2.

sell means:

(a) barter, offer or attempt to sell, or

(b) receive for sale, or

(c) have in possession for sale, or

(d) display for sale, or

(e) cause or permit to be sold or offered for sale, or

(f) send, forward or deliver for sale, or

(g) dispose of by any method for valuable consideration, or

(h) dispose of to an agent for sale on consignment, or

(i) provide under a contract of service, or

(j) supply food as a meal or part of a meal to an employee, in accordance with a term of an award governing the employment of the employee or a term of the employee's contract of service, for consumption by the employee at the employee's place of work, or

(k) dispose of by way of raffle, lottery or other game of chance, or

(l) offer as a prize or reward, or

(m) give away for the purpose of advertisement or in furtherance of trade or business, or

(n) supply food under a contract (whether or not the contract is made with the consumer of the food), together with accommodation, service or entertainment, in consideration of an inclusive charge for the food supplied and the accommodation, service or entertainment, or

(o) supply food (whether or not for consideration) in the course of providing services to patients or inmates in public institutions, where 'public institution' means 'public institution' as defined in the Act, if it is so defined; or

(p) sell for the purpose of resale.

The definition is intended to cover all circumstances in which food is provided in exchange for money or other benefit, as a part of a service (for example meals provided as part of accommodation) or for some other gain to the business from providing the food. It also includes food that is provided as part of a demonstration to promote food products (e.g. taste testing) because the business expects to gain by selling the product. It does not include food that is given away and for which nothing is expected in return; for example food prepared in the family home for family and friends. It is not intended to include the provision of complimentary non-alcoholic beverages or ready-to-eat foods that are not potentially hazardous (such as tea and packaged biscuits) provided by a business for customer comfort, for example at a hairdresser or car service premises.

'Sell' is used within the definition of 'food business' in this standard.

single use item means an instrument, apparatus, utensil or other thing intended by the manufacturer to only be used once in connection with food handling, and includes disposable gloves.

There is specific discussion about single use items under clause 23 in Standard 3.2.2. It is excluded from the definition of 'equipment' in this standard.

vehicles used to transport food includes shopping trolleys.

Shopping trolleys are specifically included as food transport vehicles.

2 Meaning of safe and suitable food

Safe food

2(1) For the purposes of the Food Safety Standards, food is not safe if it would be likely to cause physical harm to a person who might later consume it, assuming it was:

(a) after that time and before being consumed by the person, properly subjected to all processes (if any) that are relevant to its reasonable intended use; and

(b) consumed by the person according to its reasonable intended use.

The intent of the definition is that safe food is food that will not cause illness or other physical harm to a person eating it, provided that the food is used as it is intended to be used. For example, raw poultry meat is likely to contain pathogenic microorganisms. However, in terms of the definition, it is considered safe at that time because it is intended to be cooked before being eaten. The presence of pathogenic microorganisms on food that is intended to be processed to destroy those microorganisms does not mean that the food is unsafe.

If a person is harmed when eating a food, such as by choking on a piece of food, this does not mean in itself that the food is 'unsafe'. If the person chokes on foreign material in the food the presence of that foreign material in the food may make that food 'unsuitable'.

2(2) However, food is not unsafe merely because its inherent nutritional or chemical properties cause, or its inherent nature causes, adverse reactions only in persons with allergies or sensitivities that are not common to the majority of persons.

Some people suffer allergic reactions to foods, for example peanuts, eggs, dairy or seafood. The definition makes it clear that the presence of allergens that do not affect the general population does not make that food 'unsafe' in a general sense.

However, food businesses should be aware of potential issues associated with allergens and that it is mandatory to declare the presence of certain substances in food under Standard 1.2.3 — Mandatory Warning and Advisory Statements and Declarations. The Resources and References section includes links to further information on allergen management.

2(3) In subsection (1), *processes* include processes involving storage and preparation.

Suitable food

2(4) For the purposes of the Food Safety Standards, food is not suitable if it:

- **(a) is damaged, deteriorated or perished to an extent that affects its reasonable intended use, or**
- **(b) contains any damaged, deteriorated or perished substance that affects its reasonable intended use, or**
- **(c) is the product of a diseased animal or an animal that has died otherwise than by slaughter, and has not been declared by or under another Act to be safe for human consumption, or**
- **(d) contains a biological or chemical agent, or other matter or substance, that is foreign to the nature of the food.**

Some substances are not considered to be acceptable for consumption even though consuming them may not cause illness or other harm. These have been listed as (a) to (d) in subclause (4); for example an insect that has been inadvertently cooked in food is unlikely to cause illness but the food would be considered unsuitable. The definition includes food that is damaged, deteriorated or perished, or contains such material as an ingredient. However, superficial damage, such as dents to cans that will not affect the intended use of the food, do not make the food unsuitable.

Animals that are diseased or have died other than by slaughter are not considered acceptable for human consumption. State and territory laws govern the slaughter and processing of animals for human consumption, including of animals in the wild.

Food that contains foreign material, for example pest insects, nails, string and other material occasionally found in food, is not suitable.

2(5) However, food is not unsuitable for the purposes of the Food Safety Standards merely because:

- **(a) it contains an agricultural or veterinary chemical in an amount that does not contravene the Food Standards Code, or**
- **(b) it contains a metal or non-metal contaminant (within the meaning of the Food Standards Code) in an amount that does not contravene the permitted level for the contaminant as specified in the Food Standards Code, or**
- **(c) it contains any matter or substance that is permitted by the Food Standards Code.**

This subclause states that food that does not contain more than the levels of agricultural and veterinary chemical residues and contaminants specified in the Food Standards Code, or that contains matter or substances permitted by the Food Standards Code, is not to be classed as unsuitable only because it contains those substances. For example, seafood that contains the permissible amount of mercury cannot be considered unsuitable.

3 General application of the Food Safety Standards

3 The Food Safety Standards apply in accordance with this Standard to all food businesses in Australia but not in New Zealand.

The standards do not apply to 'primary food production'. This term is defined and is intended to cover activities that occur on farms. Activities in relation to food production on farms and the transport of food from the farm are not within the scope of the standards. Primary production and processing standards have been developed for seafood, meat, poultry meat, eggs, dairy products, seed sprouts and (effective from 2025) berries, leafy vegetables and melons and are included in Chapter 4 of the Food Standards Code.

4 Compliance

4(1) The proprietor of a food business must ensure the food business complies with all the requirements of the Food Safety Standards except those in Subdivision 1 of Division 4 of Standard 3.2.2 — Food Safety Practices and General Requirements.

4(2) Food handlers must comply with all the requirements set out in Subdivision 1 of Division 4 of Standard 3.2.2.

The proprietor of the food business is responsible for compliance with the requirements of Standards 3.2.2, 3.2.2A and 3.2.3 except for the requirements of clauses 13, 14 and 15 in Standard 3.2.2, which place specific obligations on food handlers. These specific obligations relate to the health and hygiene practices of food handlers.

STANDARD 3.2.2
FOOD SAFETY PRACTICES AND GENERAL REQUIREMENTS

STANDARD 3.2.2
FOOD SAFETY PRACTICES AND GENERAL REQUIREMENTS

Division 1 — Interpretation and application

1 Interpretation

This clause includes definitions applicable to this standard only. Definitions that apply to more than one of the standards are specified within Standard 3.1.1. Standards 1.1.1 and 1.1.2 also provide definitions of terms used throughout the Code.

1 In this Standard, unless the contrary intention appears —

carrier of a foodborne disease does not include a person who is a carrier of *Staphylococcus aureus*.

The definition has been included to clarify that persons (including food handlers) who carry the foodborne pathogen *Staphylococcus aureus* are not considered to be carriers of a foodborne disease. This is because many healthy persons carry *S. aureus* as part of the normal microflora of the nose, throat, or skin (Stewart 2003).

A 'carrier of a foodborne disease' is referred to in subclauses 14(1), 16(1) and 16(3).

condition means an infected skin lesion or discharges from the ear, nose or eye.

A food handler who has any discharge from the ear, nose or eye due to an infection (for example colds, flu and eye sties) or an allergy is considered to be suffering from a condition. Examples of an infected skin lesion include an infected skin sore, boil, acne, cut or abrasion.

A person who is suffering from a condition may pose an additional risk of contaminating food with foodborne pathogens such as *Staphylococcus aureus*.

'Condition' is referred to in subclauses 14(2) and 16(2).

environmental conditions means conditions under which certain food may be required to be stored including temperature, humidity, lighting conditions and atmosphere.

'Environmental conditions' influence the safety and suitability of food by affecting the growth of spoilage or pathogenic microorganisms, or chemical or physical deterioration.

'Environmental conditions' is explained in detail after paragraph 6(1)(b).

foodborne disease means a disease that is likely to be transmitted through consumption of contaminated food.

If a food handler is infected with a pathogen that can be transmitted by food, they are considered to have a foodborne disease. The affected food handler could transfer the pathogens to food while handling food or surfaces that come in contact with food, and the contaminated food could then cause illness in the people who eat it.

'Foodborne disease' is referred to in subclauses 14(1), 16(1) and 16(3).

food safety program means a program set out in a written document retained at the food premises of the food business, including records of compliance and other related action, that:

(a) systematically identifies the potential hazards that may be reasonably expected to occur in all food handling operations of the food business;

(b) identifies where, in a food handling operation, each hazard identified under paragraph (a) can be controlled and the means of control;

(c) provides for the systematic monitoring of those controls;

(d) provides for appropriate corrective action when that hazard, or each of those hazards, is found not to be under control;

(e) provides for the regular review of the program by the food business to ensure its adequacy; and

(f) provides for appropriate records to be made and kept by the food business demonstrating action taken in relation to, or in compliance with, the food safety program.

A 'food safety program' is referred to in paragraphs 25(a) and 25(b).

frozen does not include partly thawed.

This definition clarifies that frozen potentially hazardous food must be kept at a temperature that ensures the food remains completely frozen. If any part of this food has begun to thaw, the food has not been kept frozen. The temperature for keeping potentially hazardous food frozen has not been specified and must, at a maximum, be low enough to keep the food frozen. For packaged frozen food, refer to the storage conditions included on the label for advice on the best temperature for keeping the food frozen.

'Frozen' is referred to in subclause 5(4) and paragraphs 6(2)(b), 8(5)(b) and 10(c).

potentially hazardous food means food that has to be kept at certain temperatures to minimise the growth of any pathogenic microorganisms that may be present in the food or to prevent the formation of toxins in the food.

This definition clarifies that the only food that must comply with certain temperature requirements specified in Standard 3.2.2 is food that needs temperature control to minimise the growth of foodborne pathogens or the production of toxins. Toxins could be produced by pathogenic microorganisms or be formed in foods through compositional degradation.

For a food to be considered potentially hazardous, it must meet both of the following criteria:

- the food may contain a microorganism that needs to multiply in order to cause illness; and
- the food will support the growth of the microorganism.

The intrinsic characteristics of a food (particularly its nutrient content, moisture content and acidity) and the way in which it has been processed will affect these criteria. Further technical details and examples of foods that are potentially hazardous and not potentially hazardous are provided in Appendix 1.

'Potentially hazardous food' is referred to in Standard 3.2.2 clauses 5, 6, 7, 8, 10 and 22 and in Standard 3.2.2A clauses 2, 5, 6 and 7.

process, in relation to food, means activity conducted to prepare food for sale including chopping, cooking, drying, fermenting, heating, pasteurising, thawing and washing, or a combination of these activities.

The definition is intended to cover all activities that are carried out when preparing food for sale. Although it includes the activities listed in the definition, process is not limited to these activities.

'Process' is referred to in clause 7.

ready-to-eat food means food that is ordinarily consumed in the same state as that in which it is sold and does not include nuts in the shell and whole, raw fruits and vegetables that are intended for hulling, peeling or washing by the consumer.

'Ready-to-eat food' is food that can be eaten without having anything further done to it; for example, cooked meats and seafood (including cooked crustaceans in their shells), processed dairy products, confectionery, bread and other processed foods. It includes raw foods prepared for consumption such as cut fruit and salads. It also includes food products made with raw egg, meat and fish that are intended to be eaten without cooking, for example aioli, steak tartare, and sushi. Foods that might be just heated before serving are still considered ready-to-eat, for example cold quiche and frozen cooked meals. Ready-to-eat food may or may not be potentially hazardous (see Appendix 1).

More stringent requirements apply to ready-to-eat food because any contamination will not be removed by a processing step before the food is consumed. Even very low levels of contamination with certain pathogens (e.g. norovirus, *Campylobacter jejuni*) can result in illness. Once food is contaminated with these types of microorganisms it is considered unsafe because it might cause illness even if the pathogens do not actively grow in the food. Similarly, contamination from chemical aerosols, for example, is unlikely to be removed before ready-to-eat food is eaten and may be unsafe.

'Ready-to-eat food' does not include whole raw fruits and vegetables as these are intended to be washed, hulled or peeled before they are consumed.

'Ready-to-eat food' is referred to in Standard 3.2.2, subclauses 8(2) and 8(4) and paragraphs 15(1)(b), 15(2)(b) and 18(3)(b) and in Standard 3.2.2A clauses 2, 4, 5, 6 and 7.

symptom means diarrhoea, vomiting, sore throat with fever, fever or jaundice.

People with these symptoms may have a disease that can be transmitted through food. For example, the common symptoms produced by norovirus are diarrhoea, fever and vomiting, and Hepatitis A virus causes fever and jaundice.

The symptom of 'fever with sore throat' has been specifically included to identify persons who may be suffering from *Streptococcus pyogenes*, a bacterial infection that can be transmitted through contaminated food. The symptom of a sore throat by itself is not included, as this may occur for example with the common cold.

'Symptom' is referred to in subclauses 14(1) and 16(1).

temperature control means maintaining food at a temperature of:

(a) 5°C, or below if this is necessary to minimise the growth of infectious or toxigenic microorganisms in the food so that the microbiological safety of the food will not be adversely affected for the time the food is at that temperature; or

(b) 60°C or above; or

(c) another temperature — if the food business demonstrates that maintenance of the food at this temperature for the period of time for which it will be so maintained, will not adversely affect the microbiological safety of the food.

Potentially hazardous food (defined above) must be kept at certain temperatures to ensure that microorganisms that may be present or toxins they produce, do not make the food unsafe.

Foodborne illness may occur as a result of an infection (where the number of pathogenic microorganisms is sufficient to cause illness), or toxins formed in the food or intestinal tract. Infectious microorganisms include viruses, parasites and bacteria such as *Salmonella, Listeria monocytogenes, Campylobacter jejuni* and *Vibrio parahaemolyticus*. Toxigenic microorganisms include bacteria such as *Bacillus cereus, Clostridium botulinum, Clostridium perfringens* and *Staphylococcus aureus*.

Food may become unsafe if a pathogenic microorganism is allowed to grow to sufficient numbers to make the food unsafe.

The temperatures specified in this definition are based on scientific knowledge of foodborne microorganisms and how they grow or produce toxins. Most foodborne pathogens will not grow at temperatures of 5°C or below. However, some pathogens, such as *Listeria monocytogenes* and certain strains of *Bacillus cereus* and *Clostridium botulinum*, will still grow slowly at temperatures of 5°C and below. The growth rate of such pathogens will reduce as the temperature decreases. The lowest temperature reported for pathogen growth, reported for *Listeria monocytogenes*, is -1.5°C (FSANZ 2013). Foodborne pathogens will not grow at temperatures of 60°C or above.

The amount of time a potentially hazardous food can be kept safely will depend on the characteristics of the food, what microorganisms may be present in it and the conditions under which the food is kept. A food business may keep food at temperatures between 5°C and 60°C if it can demonstrate that the safety of the food is not adversely affected — use of a scientifically validated process is usually required (see clause 25). Appendix 2 includes more information on the use of time and temperature control for potentially hazardous food.

'Temperature control' is referred to in paragraphs 6(2)(a), 8(5)(a) and 10(b).

2 Application of this standard

This Standard applies to all food businesses and food handlers in Australia in accordance with Standard 3.1.1 (Interpretation and Application).

Standard 3.2.2 applies to all businesses and activities that involve the handling of food intended for sale, or the sale of food. The definition of food business in Standard 3.1.1 excludes primary food production activities. The application of Standard 3.2.2 to seafood businesses, poultry processors, producers of ready-to-eat meat, dairy processors, egg processors and sprout processors is specified or clarified under the respective Chapter 4 standard for these commodities.

For collated guidance on the application of this standard to home-based businesses, and temporary and mobile premises, see Appendix 9 and Appendix 10.

Division 2 — General requirements

3 Food handling — skills and knowledge

The intended outcome is that persons undertaking or supervising food handling operations have appropriate skills and knowledge in food safety and food hygiene matters.

3(1) A food business must ensure that persons undertaking or supervising food handling operations have:

(a) skills in food safety and food hygiene matters; and

(b) knowledge of food safety and food hygiene matters, commensurate with their work activities.

Persons supervising or conducting food handling operations must possess the skills and knowledge in food safety and hygiene matters required to handle food safely. Specific mandatory training in food safety and hygiene is not required by this clause, as it is recognised that skills and knowledge may be gained in different ways.

However, if you are a food business that handles unpackaged, potentially hazardous food that is ready to eat, Standard 3.2.2A may also apply. This standard contains extra requirements for skills and knowledge, including mandatory training for food handlers and a food safety supervisor. See the chapter on Standard 3.2.2A.

Codex (2003) provides the following definitions for food hygiene and food safety:

Food hygiene — all conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain.

Food safety — assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.

Put simply, food safety is the outcome while food hygiene is how this is achieved. In this context, having a **skill** means that a food handler has the ability to perform those tasks that are necessary to ensure the safety of the food being handled. **Knowledge** means that a food handler must have an understanding of the issues relating to and the principles surrounding food safety and food hygiene matters.

Commensurate with work activities

All food handlers and persons supervising food handling must have the skills and knowledge in both food safety and food hygiene matters appropriate to the food handling operations they carry out. This means the level and content of skills and knowledge required will depend on the work activities (e.g. the skills and knowledge required of a cook will be different from those of a waitress or a cleaner). The example below illustrates the skills and knowledge that a food handler may need to prepare cooked chicken safely.

Obtaining the required skills and knowledge

There are many options that a food business can choose from to ensure that food handlers obtain the skills and knowledge required to produce safe food. Examples of these include:

- in-house training
- distribution of relevant documentation to employees
- having operating procedures in place that clarify the responsibilities of food handlers and supervisors
- attendance at food safety courses run by local councils or other bodies
- completion of online food safety training courses
- hiring a consultant to present a course
- formal training courses.

Further information on food safety and hygiene courses is available on the National Register of VET (Vocational Education and Training) website (see Resources and References). Note that some jurisdictions may have specific competency and training requirements for food safety supervisors or similar, where training must be delivered by a registered training organisation.

Example

Skills and knowledge for handling poultry

A food handler is responsible for preparing and cooking chicken for retail sale. The food handler must have the appropriate skills and knowledge in food safety and food hygiene matters to ensure that the cooked chicken is safe and to prevent cross-contamination of other foods and food contact surfaces. See table below.

A new standard introduced in 2022 (Standard 3.2.2A – Food Safety Management Tools) requires mandatory food safety training for some food handlers. See the chapter on Standard 3.2.2A.

Knowledge:	Skills:
Raw chickens are likely to be contaminated with pathogenic microorganisms (e.g. *Campylobacter* and *Salmonella*) and must be handled and processed correctly to prevent foodborne illness.	
• Raw chicken can contaminate food and food contact surfaces and must be kept separate from any cooked/ready-to-eat foods.	• Clean and sanitise equipment and work surfaces and maintain a clean work area. • Manage work flow to prevent cross contamination (e.g. order or position tasks so raw chicken juices do not contact ready-to-eat foods).
• The recommended temperature required to properly cook the chicken (e.g. thickest part of the chicken meat reaches at least 75°C).	• Determine if equipment is set at the right temperature. • Measure the temperature of the cooked food (e.g. using a probe thermometer).
• Hands/gloves or equipment used to handle raw chickens may be a potential source of microbial cross-contamination for cooked chickens and other food and equipment.	• Wash hands properly to reduce the potential for cross-contamination. • Correct use of gloves (e.g. changing between tasks).
• Other sources of contamination, such as dirty clothes or dirty work benches, can contaminate the cooked product.	• Protecting cooked chicken from contamination.
• Raw and cooked chicken are potentially hazardous foods and require storage and display under temperature control (e.g. 5°C or below or 60°C or above).	• Determine if equipment is set at the right temperature and food is held at correct temperature.

It may be useful for food businesses to keep records of staff training, to help ensure staff have relevant and up-to-date skills and knowledge. Such records may include a plan that identifies the training needed by each staff member or category of work, and details of what training has been completed and when. It is important that appropriate skills and knowledge are maintained and updated as needed, particularly in response to staff turn-over or the introduction of new processes. Businesses should also consider training materials available for staff where English is not their first language.

Useful guidance materials

Many best-practice guidance materials (such as online training courses, fact sheets, guidebooks and posters) covering various aspects of food safety and food hygiene are available free of charge from national, state, territory and local governments as well as industry organisations. Resources include useful illustrated materials and information in a variety of different languages. The Resources and References section of this document includes useful website links.

Determining that staff have the required skills and knowledge

Even though training has been provided to a staff member, it does not guarantee that he or she will have the appropriate skills and knowledge required for the position. To help ensure staff meet this requirement, the business proprietor may find it useful to:

- discuss the principles of food safety and food hygiene with employees
- have appropriate operating procedures in place
- observe the work practices of food handlers.

Jurisdictional authorities may require food handlers and supervisors to complete extra training if inspectors are not satisfied that staff have the necessary skills and knowledge to keep food safe.

3(2) Subclause (1) does not apply to a food business in relation to persons undertaking food handling operations for fundraising events at which only food that is not potentially hazardous or is to be consumed immediately after thorough cooking is sold.

This exemption has been included because food businesses raising money for community or charitable causes are often run by volunteers. Volunteers might only help out in one or two events, so it is not practical to require them to obtain skills and knowledge in food hygiene and safety matters. However, the exemption only applies to events selling food that is not potentially hazardous (see Appendix 1) or food that is to be consumed immediately after thorough cooking because there is a lower risk of causing foodborne illness.

- Examples of foods that are not potentially hazardous and are likely to be sold at fundraising events include cakes (not containing fresh cream or fresh custard), biscuits, packaged chips and confectionery. These foods are low risk because they do not support the growth of pathogenic microorganisms or toxin formation.
- Examples of foods that are likely to be consumed immediately after thorough cooking at fundraising events include sausages, burgers and hot dogs. These foods present a low risk because the cooking process should kill any vegetative cells present and there is no opportunity for pathogen growth.

Note that the food business and all food handlers are still required to comply with the remaining provisions of this standard; for example the requirements for hygiene of food handlers.

Food handling not exempted

The exemption in this subclause does not apply to fundraising events selling potentially hazardous foods (unless consumed immediately after cooking), as these foods require additional control measures to keep them safe (e.g. temperature control). As such, appropriate skills and knowledge in food safety and hygiene matters would be required. 'Potentially hazardous' is defined in clause 1 and explained in Appendix 1.

Examples of potentially hazardous foods include fresh salads and sandwiches, products containing eggs, cakes with fresh cream, meat pies and meat and vegetable dishes such as curries. These foods require either refrigerated display or hot holding. However, if cooked food is served immediately after cooking (such as sausages, eggs, bacon etc. at a 'sausage sizzle'), the skills and knowledge requirement of subclause 3(1) does not apply.

Community and charity organisations should be aware of the specific requirements that may apply in the state or territory in which they operate. Food safety information for community fundraisers is also available from state and territory food regulatory agencies (see websites listed in Resources and References).

4 Notification

The intended outcome is that the proprietor of a food business notifies the appropriate food regulatory agency of their contact details, their business's nature and the location of all their food premises, and notifies the agency of any proposed changes to that information.

State and territory Food Acts require food businesses to notify the appropriate food regulatory agency (usually the local council) of their existence or to register as a food business. 'Food business' is defined under Standard 3.1.1 and the Food Acts.

Food businesses need to give notification once only, unless their notification information changes. There may be simplified arrangements for certain events held by charities and community organisations. Notification is generally not required for vehicles used only to transport food, as they are not defined as food premises under the Food Acts. However, food transport businesses will be required to notify authorities of the location of their operations.

Food businesses should contact their local regulatory agency to check for specific requirements. The Australian Business Licence and Information Service (see Resources and References) may also be helpful for information about meeting compliance responsibilities.

4(1) A food business must, before the food business commences any food handling operations, notify the appropriate enforcement agency of the following information:

(a) contact details for the food business including the name of the food business and the name and business address of the proprietor of the food business;

The term 'proprietor' means the person carrying on the food business or, if that person cannot be identified, the person in charge of the business.

New food businesses must notify the regulatory agency before they begin their food handling operation.

(b) the nature of the food business; and

This requirement allows the regulatory agency to request information related to the risks of the food business operation, such as the types and volumes of food and the food handling operations that will be undertaken. It may be used to allocate an appropriate priority classification for the business, based on the Food Regulation Standing Committee's Business Sector Food Safety Risk Priority Classification Framework.

(c) the location of all food premises of the food business that are within the jurisdiction of the enforcement agency.

Some food businesses have multiple food premises. 'Food premises' is defined under Standard 3.1.1 and under the Food Acts includes any place (e.g. homes, vehicles, carts, tents, stalls, boats, pontoons, etc.) used or kept for handling food for sale, whether or not those premises are owned by the proprietor.

The proprietor of the business must tell the relevant authority the location of all food premises used by the business within the jurisdiction of the regulatory agency.

Mobile food businesses

Mobile food businesses, such as ice cream vans, should notify the local council in which the food vehicle is garaged or housed.

If the food vehicle operates permanently from one site, for example an after-hours fast-food van, the food regulatory agency responsible for the area where the vehicle is stationed should be notified, even if the vehicle is housed in an area covered by another regulatory agency.

Operators should be able to nominate whether the vehicle is a mobile vendor of foods or vends permanently stationed in one spot. If there is more than one vehicle, a single notification may be sufficient.

Businesses should seek further advice from their local regulatory agency on specific requirements in that jurisdiction. For example, Victoria has an online registration tool, Streatrader, for all temporary food premises, mobile food vans and vending machines (see Resources and References).

Temporary food premises

For the purposes of this clause, temporary premises can be categorised into two groups and treated independently:

1. regular temporary premises, whether commercial market stalls or fundraising stalls which operate weekly, fortnightly, monthly, quarterly or at any other regular interval, should be treated as permanent food operations and supply notification information only once, unless the notification information changes
2. single-event or annual-event temporary premises, whether fundraising or commercial, should be covered by a temporary events notification.

Businesses should seek further advice from their local food regulatory agency on specific requirements in that jurisdiction. For example, Victoria has an online registration tool, Streatrader, for all temporary food premises, mobile food vans and vending machines (see Resources and References).

4(2) When complying with subclause (1), the proprietor of the food business must answer all questions asked by the appropriate enforcement agency in relation to the matters listed in subclause (1) in the form approved from time to time by the relevant authority under the Act.

The proprietor of the food business must provide the food regulatory agency with all of the information that is requested in the approved form for the purposes of the Act.

4(3) The food business must notify the appropriate enforcement agency of any proposed change to the information specified in subclause (1) before the change occurs.

It is the responsibility of the food business to inform the relevant regulatory agency of any changes to previously notified information, and to do so before the change takes place. Changes to the proprietor, the nature of business or its location are usually known well in advance. Any change to the nature of business must be notified because it may result in a change to the food premises' risk classification.

The new proprietor is responsible for notifying the regulatory agency of a change in proprietor.

Example

Notifying changes to food trading

1. A service station selling drinks and confectionery intends to expand the range of food sold to include potentially hazardous food such as hot dogs, pies and sandwiches.
2. A home-based food business making and selling jams and sauces decides to expand its food handling activities to cater for birthday parties and community gatherings.

In each case the food business must inform the appropriate regulatory agency of the change, as it will change the nature of the food business and the associated food safety risks that need to be managed.

Division 3 — Food handling controls

5 Food receipt

The intended outcome is that food businesses take all practicable measures to ensure they only receive food that is safe and suitable, including:

- only accepting food that is protected from the likelihood of contamination
- being able to identify the received food and its supplier
- ensuring potentially hazardous food is under temperature control.

The phrase 'practicable measures' recognises that a food business cannot inspect every food item it receives, nor categorically assess whether inspected food is contaminated.

5(1) A food business must take all practicable measures to ensure it only accepts food that is protected from the likelihood of contamination.

Food businesses must not accept food that is contaminated. 'Contamination' is explained in Standard 3.1.1, including possible sources of contamination. As contaminated food might not be identifiable by its look, smell or taste, a food business must only take all practicable measures to accept food that is protected from the likelihood of contamination.

Practicable measures in this context could include:

- sourcing food from reputable suppliers
- having specific, agreed instructions in place with the supplier to protect food from contamination; for example:
  - » food is to be delivered in appropriate packages or containers
  - » written assurance that food has been handled and transported to prevent contamination as appropriate (e.g. supplier has pest control program)
- ensuring that food is only delivered when there is someone at the business to receive and assess it, or that a suitable alternative system is in place (e.g. providing access to a suitable, secure, cool room)
- inspecting randomly selected food items from a delivery, for visible signs of:
  - » contamination, damage or deterioration of the food
  - » contamination, damage or deterioration of the food's packaging.

It might not always be practicable for a business to check items as they are delivered to the premises. For example, a supplier may be instructed to place certain food deliveries directly into a storeroom for later inspection. In such cases both the supplier and the food business receiving the food should agree that the food is accepted only under concession and not 'received' until it has been assessed by the food business.

If a food is found to be contaminated or not protected from the likelihood of contamination, it should be rejected. It should be returned to the supplier or destroyed with the supplier's consent. Rejected food held on the premises must be identified and kept separate from other food to ensure it is not sold (see clause 11). The food business may find it useful to keep records of when and why food has been rejected.

Example

Foods rejected due to lack of protection

1. Packaged meat

A deli owner has a weekly order with a wholesaler for ten packaged smoked hams. When each order is delivered, the hams are inspected. During one of these inspections, the deli owner notices that part of the packaging around one of the hams is split. All of the hams are then inspected and it is found that another two hams have split packaging. Since the packaging no longer completely protects these hams, they might have become contaminated. The deli owner rejects these three hams, clearly identifies them for disposal and returns them to the supplier.

2. Eggs

A home-based caterer receives a delivery of eggs to make mayonnaise for an upcoming event. She inspects the eggs to check they are stamped, intact and clean and notices that some eggs are cracked and dirty. This means the eggs and the internal contents of the eggs might be contaminated with pathogenic *Salmonella*. The business owner rejects these eggs and changes to a more reputable supplier. (Note: Standard 4.2.5 — Primary Production and Processing Standard for Eggs and Egg Products prohibits the sale of cracked and dirty eggs unless sold for pasteurisation and requires each egg to be stamped with the producer's unique identification so the eggs can be traced.)

5(2) A food business must provide, to the reasonable satisfaction of an authorised officer upon request, the following information relating to food on the food premises:

(a) the name and business address in Australia of the vendor, manufacturer or packer or, in the case of food imported into Australia, the name and business address in Australia of the importer; and

(b) the prescribed name or, if there is no prescribed name, a name or a description of the food sufficient to indicate the true nature of the food.

A food business must be able to identify food on its premises and where this food has come from. It is important to be able to trace a food back to its source, especially if it needs to be returned or recalled if it is found to be unsafe or unsuitable (see also clause 12). A food business should not accept any food that cannot be identified.

The information required may be provided in writing or verbally, obtained from an invoice, food packaging or other records. It is good practice to keep a supplier record list — a sample supplier records template is provided in Appendix 8.

A 'prescribed name' is defined in Standard 1.1.2 – Definitions Used Throughout the Code to mean 'a name declared by a provision of this Code to be the prescribed name of the food'. Under the labelling provisions in Standard 1.2.1 – Requirements to Have Labels or Otherwise Provide Information, if a food has a prescribed name, it must be used in the labelling of the food. Very few foods have prescribed names; examples are 'honey', 'infant formula' and 'follow-on formula'.

Most foods are identified by a common name or by specifying what the food is; for example, 'chocolate dairy dessert'. This information will be written on the food's packaging.

Packaged food that is sold for non-retail sale must be labelled with (among other things) the name of the food and the supplier, in accordance with Part 1.2 of the Food Standards Code. This information must be on the carton of food sold to the business, but is not required on individual food packages within the carton. If the outer label is discarded, the information should be retained by the business in case a recall is needed (see clause 12).

Example

Keeping track of a food supplier's details

A butcher purchases meat marinades from a local food business to make its own kebabs. Cartons of marinade delivered by the supplier are labelled with the business's name and address. The individual pouches of marinade inside the carton are not labelled with this information. To make sure the butcher doesn't lose track of where the marinade has come from once it is unpacked, he records the details of both the supplier and the products in his business records.

5(3) A food business must, when receiving potentially hazardous food, take all practicable measures to ensure it only accepts potentially hazardous food that is at a temperature of:

(a) 5°C or below; or

(b) 60°C or above,

unless the food business transporting the food demonstrates that the temperature of the food, having regard to the time taken to transport the food, will not adversely affect the microbiological safety of the food.

If potentially hazardous food is not kept under strict temperature control it could become unsafe due to the growth of foodborne pathogens or formation of toxins (see clause 1 and Appendix 1).

Examples of practicable measures a food business can take in this context include all the points listed in 5(1) above, with **added** checks that the potentially hazardous food is under temperature control. For example, the temperature of a chilled food delivery should be measured either using a probe thermometer or measuring the surface temperature of the food or package as applicable. Only a sample of food from the delivery needs to be checked and future deliveries from that supplier monitored appropriately.

Businesses may generally find it useful to keep delivery records including the time and temperature that food is received, particularly to keep track of the temperature history of food. A sample food receipt template is provided in Appendix 8.

If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, Standard 3.2.2A may also apply. This standard contains extra requirements for substantiating food safety controls for food receipt. See the chapter on Standard 3.2.2A.

Example

Checking potentially hazardous food has been kept under temperature control

A restaurant owner receives portions of game from a remote rural supplier. When the delivery truck arrives, the business owner checks that the meat has been kept under temperature control for the entire duration of the long journey, by:

1. asking to see the truck's temperature data logger (if available) — this indicates whether the food has been correctly transported under refrigeration
2. checking the temperature of a randomly selected food sample with a probe thermometer — this confirms the food is at the agreed temperature.

The business owner is confident the meat has been kept cold, accepts the delivery and makes a record of the time/temperature checks that were made.

Food delivered between 5°C and 60°C

If a food business agrees to accept potentially hazardous food at a temperature between 5°C and 60°C, the food transporter must demonstrate to the receiving business that the practice used is safe (food transporters are also referred to in clause 10).

Examples of situations where it could be safe for potentially hazardous food to be delivered outside the accepted temperature range include:

- the food has been freshly prepared (e.g. sandwiches), transported short distances and then either refrigerated immediately or sold for immediate consumption
- chilled food (5°C or below) or hot food (60°C or above) is only transported short distances, so it is unlikely a slight rise or fall in temperature for this time will affect the safety of the food
- the particular food can be safely maintained at a temperature above 5°C and can therefore be safely transported at this temperature (e.g. Australian Standard AS 4696-2007 Hygienic Production and Transportation of Meat and Meat Products for Human Consumption states that raw meat carcasses can be safely maintained at 7°C).

If a food transporter cannot demonstrate to the receiving business that the temperature of the food is safe, the delivery must not be accepted.

5(4) A food business must, when receiving potentially hazardous food, take all practicable measures to ensure that food which is intended to be received frozen, is frozen when it is accepted.

If the potentially hazardous food is intended to be received frozen, it must only be accepted by the food business if it is frozen hard. 'Frozen' is defined as not including food that is partly thawed. A temperature for frozen has not been specified. The business receiving the food and the business transporting the food should agree on the temperature at which the food is to be delivered. Most food businesses will have strict temperature requirements to ensure the food's quality is maintained.

Examples of practicable measures in this context are as listed for subclause 5(1), with added checks that the potentially hazardous food is frozen hard and at the agreed temperature.

Under some circumstances, the food business might need the food to be delivered partially or completely thawed and would have arrangements with the food transporter for this. In this case the food is not intended to be received frozen when it is accepted.

Scope of the temperature requirements in subclauses (3) and (4)

The temperature requirements in subclauses (3) and (4) are only for potentially hazardous food. However, for food quality reasons, the business might want to check the temperatures of delivered perishable and frozen foods that are not potentially hazardous. These foods should be received at the storage temperatures recommended by the manufacturer.

If the food business purchases and transports its own food, clause 10 will apply.

6 Food storage

The intended outcome is that during storage, the safety and suitability of food is maintained by:

- storing food so that it is protected from contamination and is in an appropriate environment
- storing potentially hazardous food at a temperature that minimises the opportunity for pathogenic bacteria to grow.

Food is considered to be 'stored' if it is not being processed, displayed, packaged, transported or identified for disposal.

While all food should be stored in a way that keeps it safe and suitable, extra care should be taken with:

- unpackaged food, because it is generally more vulnerable to exposure to hazards and environmental conditions
- ready-to-eat food (see clause 1), because it will not be further treated to reduce or remove any contamination before it is eaten
- potentially hazardous food, because if it is contaminated with pathogenic microorganisms these could grow to dangerous levels during storage (see clause 1 and Appendix 1) — additional requirements for this food are discussed in subclause 6(2).

6(1) A food business must, when storing food, store the food in such a way that:

(a) it is protected from the likelihood of contamination; and

'Contamination' is explained in Standard 3.1.1, including possible sources of contamination. Food might not be identifiable as contaminated by its look, smell or taste, so to ensure stored food stays safe and suitable it must be protected.

Businesses should consider how and where their food is stored and take steps to prevent it coming in contact with biological, chemical, physical or other contaminants.

Examples of general best practice for food storage are listed below.

- Food should be stored in containers or other wrapping that is food-grade (i.e. safe for food use).
- Packaged food should be regularly inspected to make sure it remains intact and properly protecting the food. Any food that might be contaminated because packaging is unsuitable or damaged should be disposed of as per clause 11.
- Raw food such as raw meat and seafood should be stored separately from or below ready-to-eat foods, to avoid contamination from the raw food (e.g. meat juices) being transferred to the ready-to-eat food.
- Food should be stored separately to chemicals (e.g. cleaning agents and pest control poisons).
- Food should be stored off the ground on shelves to help keep premises clean, discourage pests and avoid water damage or contamination in areas where floors are wet cleaned.
- Food should not be stored in toilet facilities. It is also good practice to avoid storing food contact equipment and food packaging in toilet facilities.
- Businesses should consider the appropriate storage of items that might subsequently come into contact with food or food contact surfaces. For example, containers that will be placed on food contact surfaces should be stored off the floor on shelves, to avoid contamination from the floor being transferred to the food contact surface from the underside of the container.

Storage areas should be kept clean and dry to prevent the accumulation of dirt, food waste, etc. that could result in the contamination of food (see clause 19). Storage areas should be kept free of pests that could contaminate food or damage protective packaging (see clause 24).

(b) the environmental conditions under which it is stored will not adversely affect the safety and suitability of the food.

The right storage conditions to keep food safe and suitable will depend on the food's characteristics (e.g. whether it is a dry good, a chilled food, fresh produce etc.) and its packaging. Some examples of environmental conditions that might adversely affect food safety or suitability are listed below:

Humidity

- Moist/damp conditions can encourage mould growth.
- Exposed dry foods can absorb moisture and deteriorate.
- Packaging material might deteriorate when exposed to moisture (e.g. metal rusting, or biodegradable plastic dissolving) resulting in food being exposed to contamination or spoilage.
- Moist conditions might encourage seeds to germinate and tubers to sprout, making the food unsuitable.

Heat

- Warm conditions favour the growth of pathogenic and spoilage microorganisms (noting there is a requirement to store potentially hazardous food under temperature control - see 6(2) below).
- Heat-sensitive foods can be spoilt by melting or softening.

Light

- Potatoes produce higher levels of toxic glycoalkaloids if exposed to light for prolonged periods.
- Some vegetables might produce shoots if exposed to light.
- Vegetable oils might change in chemical composition and deteriorate if exposed to light.

When food needs storage under particular conditions to prevent it becoming unsafe or unsuitable for its expected shelf life, it should be kept under those conditions. Food businesses should be guided by storage instructions provided by food manufacturers as to how food should be stored to retain its safety or suitability.

6(2) A food business must, when storing potentially hazardous food:

(a) store it under temperature control; and

To ensure pathogens and toxins do not make potentially hazardous food unsafe, the food must be stored under temperature control. Clause 1 explains 'potentially hazardous food' and 'temperature control'.

If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, Standard 3.2.2A may also apply. This standard contains extra requirements for substantiating food safety controls for food storage. See the chapter on Standard 3.2.2A.

Storage temperature

Potentially hazardous food must be stored at 5°C or below or 60°C or above. As discussed under 'temperature control' (clause 1 Interpretation) the growth of all pathogenic bacteria is prevented at temperatures below -1.5°C or at 60°C or greater. Because some pathogenic bacteria, such as *Listeria monocytogenes*, can grow at 5 °C or below, the time that potentially hazardous food is stored at refrigeration temperatures needs to be managed (see Storage time below). Food businesses may be able to demonstrate that a specific potentially hazardous food can be safely stored at temperatures above 5ºC, because that food will support limited or no growth of certain pathogens at the nominated temperature. For example, the Australian Standard AS4696-2007 states that raw meat carcasses can be stored at 7°C (maximum surface temperature). Any storage instructions specified by a food's manufacturer should be followed.

Storage time

The length of time that a potentially hazardous food can be safely stored depends on the particular characteristics of the food, (e.g. see Appendix 1 and 2) including processing and packaging factors and the temperature at which it is stored.

Some considerations on refrigerated storage time for potentially hazardous foods are listed below for information.

- Keeping potentially hazardous ready-to-eat food for no more than 5 days at 5°C or below will restrict the growth of *L. monocytogenes* (Health Canada 2011, Ross 2011).
- Shorter refrigeration times might be advised for particular foods, because they present a higher food safety risk. For example, it is recommended that foods containing raw or low-cooked eggs are not kept for longer than 24 hours (Australia Egg Corporation Ltd, 2015).
- Longer refrigeration times may be acceptable for certain foods if the food business can demonstrate that foodborne pathogens will not be able to multiply to dangerous levels or produce toxins in that time.
- NSW Food Authority's *Sous Vide — Food Safety Precautions for Restaurants* provides guidance that restaurants limit the refrigerated storage of pasteurised sous vide foods to ten days unless a longer time has been scientifically validated. For cooked sous vide foods that are not pasteurised, a maximum of five days storage at 5°C is recommended.
- Guidance on particular foods is available in scientific resources (e.g. Cox and Bauler 2008 for cook chill foods) and food regulatory agency websites in Resources and References.

Identifying stock, for example by the use of date labels, is useful for businesses to keep track of how long food items have been stored.

General best practice for refrigerated storage

To make sure that cold food remains safe during storage, proper refrigeration is essential. For best practice, businesses should ensure refrigeration equipment is operating and used correctly using the following measures:

- Food temperatures are checked with a probe or infra-red thermometer to make sure the food itself is at the required storage temperature, rather than relying on the refrigerator's temperature gauge.
- The time that refrigerated food is left out of refrigeration is minimised, to keep the food as chilled as possible.
- Stock is regularly checked for date markings, and rotated and prioritised for sale or disposal, ensuring for example that older food is sold first and that food is not sold beyond its Use By date. If packaged food requires storage under refrigeration once it has been opened, the packaging should be opened in a way that keeps the date marking intact and the manufacturer's storage life and conditions should be followed.
- Refrigerated food is not repeatedly taken out and put back unnecessarily, to avoid multiple food warming periods.
- Refrigerators are not overstocked beyond the refrigerator's capacity to chill food to the required temperature, and to allow chilled air to circulate around all food items.

- Refrigerator doors are not repeatedly opened more than necessary or left open for extended periods, to avoid the temperature rising above the required level, and to avoid placing unnecessary stress on the refrigerator's cooling system.
- Refrigerators are regularly maintained and serviced to ensure they are running efficiently.
- Some food businesses may have temperature monitoring devices installed which provide an ongoing measurement of chilled storage.

(b) if it is food that is intended to be stored frozen, ensure the food remains frozen during storage.

If a food business intends to store food frozen, then the freezer used for this purpose must keep the food hard frozen. A temperature for frozen storage has not been specified, but food businesses should follow food manufacturer's storage instructions to maintain product quality and shelf life.

7 Food processing

The intended outcome is that food businesses ensure that only safe and suitable food is processed, and that food remains safe while it is being processed, by:

- assessing food before it is processed
- protecting food from contamination
- if necessary, reducing pathogens that may be present in the food to safe levels
- minimising the time that food remains at temperatures that permit the growth of pathogenic microorganisms, including during cooling and reheating.

Information on food microbiology and many food processes is available in technical references (e.g. Cox and Bauler 2008, Hocking 2003, ICMS 1996, Meat and Livestock Australia 2015) and food regulatory agency websites in Resources and References.

7(1) A food business must:

(a) take all practicable measures to process only safe and suitable food; and

A food business must ensure that the food it will process (and prepare) is safe and suitable for its intended use. 'Process', 'safe' and 'suitable' are defined in clause 1.

Practicable measures that can be taken by the food business include:

- sourcing ingredients from reputable suppliers
- specifying to the supplier the quality or safety parameters needed for the raw material or food ingredient (e.g. dried fruit must be free from stones; food must have no detectable *Salmonella*)
- having appropriate procedures in place when food is received (see clause 5)
- inspecting the food before processing to determine whether it is damaged, has deteriorated or perished

- if the food is potentially hazardous, determining whether the food has been kept at temperatures that minimise the growth of pathogenic bacteria
- removing contaminants that might be present on the food before use (e.g. by washing fruits and vegetables).

A food business would generally not be expected to conduct microbiological, chemical or physical tests on ingredients to determine their safety or suitability. However, testing may be necessary for food manufacturers where the quality of the ingredients is critical to the safety or suitability of the food being manufactured. This is especially important when the ingredient is being used in a food that will not be further processed to ensure its safety and suitability, for example if dried spices, herbs or other seasonings are added to a snack food after a heat processing step. In this case the food business should have assurance that such ingredients do not contain pathogens such as *Salmonella* and microbiological testing may be included as a part of a supplier assurance program.

(b) when processing food:

(i) take all necessary steps to prevent the likelihood of food being contaminated; and

The food business is required to take all necessary steps to prevent the likelihood of food being contaminated during processing.

Examples of steps that the business could take include:

- minimising contamination from food handlers by ensuring staff have the appropriate skills and knowledge for any food processes they use (see clause 3), including:
  - » correct use of food processing equipment
  - » good personal hygiene practices
- generally keeping food processing areas clean, well maintained and free of pests to avoid contamination from dirt and dust, pests and foreign objects such as glass and metal (see also clauses 19 and 24)
- preventing contamination from food processing equipment and utensils by ensuring:
  - » utensils and food contact surfaces of equipment are cleaned and sanitised before use, and between uses with raw food and ready-to-eat food (see clause 20)
  - » utensils are not stored in containers of water between uses unless it is very hot (60°C or more) or very cold (5°C or less), and the water is changed regularly, fo example every hour
  - » parts of processing equipment that repeatedly contact food over the course of a day (e.g. slicers, blenders and liquidisers) are regularly cleaned and sanitised (see also clause 20)
  - » probe thermometers are cleaned and sanitised between uses (see also clause 22)
  - » food processing equipment is kept in good working order generally (see clause 21)
- preventing transfer of contamination from one food to another, by:
  - » not mixing or topping up different batches of food (see example below)
  - » processing ready-to-eat food in separate areas or at separate times to processing raw foods
  - » ensuring that utensils and equipment (chopping boards, slicing blades, etc.) used to prepare raw food are not used to prepare ready-to-eat food unless they have been cleaned, sanitised and dried

- preventing contamination by chemicals by ensuring chemicals used for cleaning, pest control, etc. are kept separate from food processing areas.

Some processes may pose an inherently higher risk of food contamination than others and so require extra care; for example, the preparation of fresh ready-to-eat foods that need a lot of handling (e.g. sandwiches).

A food business should consider the volumes of food being processed and ensure that all aspects of the food processing (including food handlers and equipment) can cope with those volumes. The potential for contamination at any part of the processing should be assessed and the business's operations adjusted to prevent the likelihood of food becoming contaminated.

Examples

Preventing food contamination during processing

1. Raw poultry does not need to be washed

A food handler is responsible for preparing raw chicken for cooking and washes the poultry in the sink as part of the preparation. This practice is potentially unsafe, as it is likely to result in pathogens such as *Campylobacter* and *Salmonella* being splashed onto the sink and surfaces nearby. These pathogens could then be transferred to other foods (e.g. salad prepared in the same area). While cooking will destroy the pathogens in the chicken, raw and ready-to-eat foods may not be further processed to make them safe before eating. To prevent cross contamination occurring, the food handler should not rinse the poultry.

2. Avoiding mixing of batches of food prepared on different days

At the end of the day's trading, a food business keeps its leftover chilled salads and dips, prepared that day, for use the following day. The leftovers are sealed in clean, sanitised containers, labelled with a sticker to indicate the date, and refrigerated. The next day, fresh batches of salads and dips are prepared with cleaned and sanitised equipment, and placed in containers separate from the leftovers. The business ensures that the leftovers are used first (by checking the sticker) and are not mixed with the fresh batches. This avoids transferring any contamination that may be present in the leftover batch of salad or dip to the new batch.

(ii) where a process step is needed to reduce to safe levels any pathogens that may be present in the food — use a process step that is reasonably known to achieve the microbiological safety of the food.

The microbiological safety of food is usually achieved through heating processes such as cooking, pasteurisation and retorting as well as non-thermal processes such as high pressure processing and irradiation (where permitted under Standard 1.5.3 — Irradiation of Food). Other processing steps used to make food safe include drying, salting, pickling and fermenting or a combination of these.

The process step needed to reduce or eliminate pathogens in a food will depend on the nature of the food business and the food handling operations it undertakes. 'Reasonably known' has been included to recognise that a food business should only

use a process step that is known and it is reasonable to believe this step will achieve the microbiological safety of the food. This means the process used is based on knowledge of the critical limits (such as temperature, time, pH, water activity etc.) that will prevent, eliminate or reduce the food safety risk to an acceptable level. For example, if cooking of a food is required to ensure its safety, the combination of cooking temperature and time must be sufficient to reduce pathogens associated with that food to safe levels. A guide to processing limits for a range of processes (e.g. acidification, cooking, pasteurisation, sous vide) is provided in Appendix 3.

Processing requirements for some foods, including limits or steps that must be controlled for microbiological safety, are specified in the Food Standards Code:

- Standard 4.2.4 — Primary Production and Processing Standard for Dairy Products specifies time and temperature parameters for the thermal pasteurisation of milk and dairy products and processing controls for cheese and cheese products.
- Standard 4.2.3 — Production and Processing Standard for Meat specifies processing controls to be managed for uncooked comminuted fermented meat including the use of a starter culture, pH reduction, time and temperature of fermentation and water activity.
- Standard 4.2.5 — Primary Production and Processing Standard for Eggs and Egg Products specifies time and temperature parameters for the pasteurisation of egg pulp, liquid egg yolk and liquid egg white.
- Standard 4.2.6 — Production and Processing Standard for Seed Sprouts specifies that processing must include a decontamination step.
- Standard 2.3.1 — Fruit and Vegetables requires all fruit and vegetables in brine, oil, vinegar or water, other than commercially canned fruit and vegetables, to have a pH no greater than 4.6 (see example below).
- Standard 2.5.3 — Fermented Milk Products requires fermented milk and yoghurt to have a pH of 4.5 or less.

Many foods will not be subject to a pathogen reduction processing step by a food business because they are intended to be eaten raw, for example fruits and vegetables, fresh juices, raw meats and seafood and raw nuts.

Standard 3.2.2A – Food Safety Management Tools applies additional requirements for substantiating food safety controls when processing potentially hazardous food. If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, see the chapter on Standard 3.2.2A.

Examples

Processes used to ensure food safety

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

1. Cooking chicken

A food business cooks whole chickens for retail sale. The business has established that the time required to cook the chickens is around 80 minutes and requires the cooking time and temperature to be monitored and recorded to ensure that the chicken is cooked safely. The person responsible for cooking the chicken has the required knowledge that a chicken is sufficiently cooked when its internal temperature has reached 75°C. At 80 minutes cooking time she checks the temperature of a chicken by placing a clean and sanitised probe thermometer into the centre through the inner thigh area and records the temperature. If 75°C has not been reached, the cooking time is extended and the temperature again checked and recorded.

2. Raw egg condiments (e.g. aioli, mayonnaise, etc.)

A food business prepares its own raw egg condiment. Having determined that it does not wish to use pasteurised egg in place of raw eggs, the business first ensures that the eggs it purchases are stamped, uncracked and clean. The egg yolk is separated from the white using a sanitised egg separator. The yolk is acidified (e.g. with lemon juice or vinegar) to a pH of 4.2 or lower (to inhibit *Salmonella* growth) and then blended with other desired ingredients. The prepared sauce is placed into a clean and sanitised container and then into a refrigerator until required. The business discards any unused sauce at the end of that day's trade.

3. Acidification of vegetables in oil

A food business prepares a selection of preserved vegetables in oil. Because the vegetables are packed in oil and sealed in jars or bottles, this creates a low-oxygen environment that favours the growth of pathogens such as *Clostridium botulinum*, which can cause botulism. While oil prevents oxidation and discolouration of vegetables in the containers, it does not kill microorganisms. To inhibit pathogen growth, the vegetables are acidified with vinegar to a pH of 4.6 or lower, before the oil is added. Any herbs or spices to be added to the vegetables are also either similarly treated with vinegar or are thoroughly dried (to reduce their water activity) before being mixed with the vegetables.

7(2) A food business must, when processing potentially hazardous food that is not undergoing a pathogen control step, ensure that the time the food remains at temperatures that permit the growth of infectious or toxigenic microorganisms in the food is minimised.

For potentially hazardous foods that are not undergoing a pathogen control step such as cooking, the time that food is kept at temperatures that permit the growth of pathogenic microorganisms must be kept to a minimum during processing.

Subclause 7(2) recognises that it may be necessary to keep potentially hazardous food at temperatures between 5°C and 60°C during preparation. However the time that food is kept at these temperatures must be monitored to ensure that pathogenic microorganisms that may be present do not grow to unsafe levels. Certain food service and catering businesses are also required to substantiate the monitoring of time and temperature during food preparation. See the chapter on Standard 3.2.2A.

Where food is outside refrigeration several times during preparation, it is important to note and add these times together to ensure that they do not exceed safe limits.

As a general rule, the **total** time that a ready-to-eat potentially hazardous food can be at temperatures between 5°C and 60°C is 4 hours (see Appendix 2, including examples).

Example

Sandwiches with potentially hazardous fillings out of refrigeration for minimum time

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

A catering business prepares sandwiches that have potentially hazardous fillings including meats such as roast beef. At the beginning of the day sandwich ingredients are prepared and the beef is removed from refrigeration, sliced and re-refrigerated. To minimise the time the beef is out of refrigeration the business ensures this takes no longer than 30 minutes.

Later, the sliced beef is again taken out of the refrigerator to be made into sandwiches. Sandwich preparation takes 30 minutes. The total time the roast beef and other potentially hazardous fillings have been at temperatures between 5°C and 60°C is kept to 1 hour.

The accumulated total time that the roast beef is out of refrigeration should not exceed 4 hours (see Appendix 2). To achieve this, the business refrigerates the sandwiches until they are required for display at room temperature and ensures that the time they remain on display does not exceed three hours. At the end of the three-hour display, any unsold sandwiches are then discarded.

Even for potentially hazardous food (e.g. raw meat and fish) that will receive a pathogen control step, it is still important to minimise the time the food is kept at temperatures that permit the growth of pathogenic microorganisms. This prevents the production of bacterial toxins in the food that will not be destroyed by cooking, as well as the growth of spoilage microorganisms.

Example

Food poisoning involving raw egg aioli

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

A group of work colleagues fell ill with gastroenteritis from *Salmonella* poisoning after eating lunch at a café. All had ordered burgers or chips served with aioli sauce. Further investigations found that the café staff had prepared the aioli the previous morning in a large tub, making enough to last several days. The aioli was left out on the bench for the first day, used as needed to fill up sauce bottles, then refrigerated overnight. The tub was then brought out onto the bench again the next day. The aioli contained raw eggs and had not been processed in any way that would have destroyed pathogens present, particularly *Salmonella*. These pathogens were able to grow rapidly each time the sauce was left at room temperature, and over time made the aioli unsafe to eat.

After the incident, the business was advised to seek an alternative to using raw eggs (i.e. a pasteurised alternative) or if not possible to substitute, to change its practices to ensure the aioli is produced safely and kept under strict temperature control. The business responded by:

1. using pasteurised egg for preparing aioli; or
2. if only raw eggs can be used:

- preparing a smaller amount of aioli each day — enough only to last that day
- preparing the aioli as per Example 2 above
- immediately after preparation, dispensing the aioli into clean and sanitised sauce bottles that are kept refrigerated until needed
- discarding any aioli left unused at the end of the day (as recommended by AECL 2015).

Thawing food

Processing includes thawing and businesses will need to ensure that, when frozen potentially hazardous foods are thawed, the thawed portion of the food is kept for a minimum time at temperatures that support the growth of foodborne pathogens.

There are several ways that frozen potentially hazardous food can be thawed:

- **Refrigeration:** Thawing food under refrigeration maintains it at 5°C (or below) and will minimise the potential for the growth of pathogenic microorganisms. It may take several days for large food items to thaw completely at this temperature, requiring forward planning and adequate refrigeration space.
- **Running water:** Food may be thawed more quickly by submerging under cool running water. This method requires adequate sink space and sufficient water flow to ensure thawing is as rapid as possible. Foods susceptible to water damage should be contained within impermeable packaging. It is important to monitor the food and remove it as soon as it is thawed to ensure it is not kept at temperatures above 5°C.
- **Microwave:** Thawing in a microwave oven is the fastest option; however, the suitability of this method will depend on the size and nature of the food item to be thawed. It may be difficult, for example, to achieve complete thawing of certain meats without partial cooking and reduction in food quality.

- **As part of the cooking process:** Thawing foods as part of the cooking process is appropriate where thorough and timely cooking can be ensured. Foods typically cooked from the frozen state include single portion foods such as meat patties and chicken nuggets as well as pizzas and vegetables. It is safer to completely thaw larger portions of frozen raw foods (e.g. chickens and turkeys) before cooking to ensure the internal cooking temperature required is reached.
- **Room temperature:** Thawing food at room temperature is faster than under refrigeration; however, there is a greater likelihood that the thawed portion of the food will reach temperatures greater than 5°C. The thawing process should be monitored to ensure the time that thawed potentially hazardous food is at temperatures greater than 5°C is minimised and safe time limits are not exceeded (see Appendix 2).

Frozen raw meat, poultry and seafood

There are two critical food safety issues when thawing frozen raw meat, poultry and seafood:

- ensure that juices resulting from thawing do not contaminate other foods during the thawing process
- ensure these foods are thawed completely before cooking unless they can be safely cooked from a frozen or partially frozen state (e.g. if the portion size will quickly defrost to enable heat penetration and thorough cooking).

Frozen raw quantities of fish that are capable of producing histamine (See Fish in Appendix 4) should always be thawed in a refrigerator or microwave to minimise the production of histamine in the fish. Cooking does not destroy histamine.

7(3) A food business must, when cooling cooked, potentially hazardous food, cool the food:

(a) within two hours — from 60°C to 21°C; and

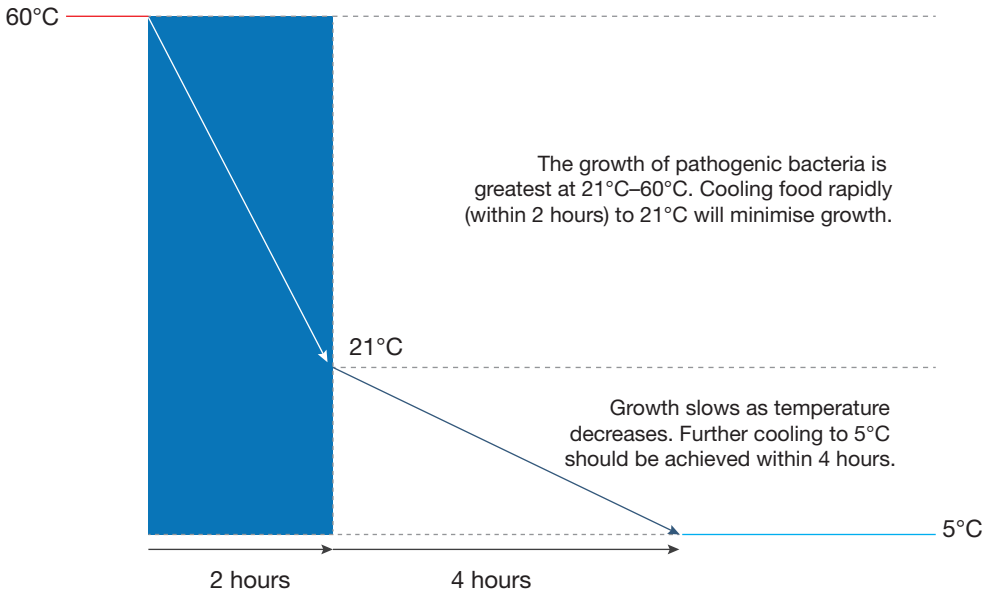
(b) within a further four hours — from 21°C to 5°C,

unless the food business demonstrates that the cooling process used will not adversely affect the microbiological safety of the food.

The cooling of cooked potentially hazardous food needs to be as quick as possible to prevent the growth of pathogenic bacteria to unsafe levels. The less time that cooked potentially hazardous food remains at temperatures between 5°C and 60°C during the cooling process, the less opportunity there will be for pathogenic bacteria to grow. Pathogenic bacteria may be present in cooked food from spores and vegetative (live) cells that survive the cooking process.

Cooking will not destroy the spores of the foodborne pathogens *Clostridium perfringens*, *Clostridium botulinum* and *Bacillus cereus.* Rather, cooking can activate spores to become vegetative cells, which are then able to grow. If cooked potentially hazardous food is left to cool too slowly, for example at room temperature or in large volumes in a cool room, these vegetative cells can grow to dangerous levels. Subsequent heating of the food may not reduce high numbers of bacteria and does not destroy bacterial toxins that may be produced.

The specific cooling times and temperatures of this clause have been adopted from the US Food Code and are based on the control of spore-forming bacteria. *C. perfringens* can multiply quickly at elevated temperatures, with growth being fastest between 43°C and 47°C. *B. cereus* grows fastest in the temperature range 30°C to 40°C. To avoid providing ideal conditions for these bacteria, the cooling process used by the food business must first be able to reduce the food temperature from 60°C to 21°C in 2 hours or less. The food must then be cooled down to 5°C in the next four hours (or less) to restrict the growth of other bacterial pathogens that may be present (see diagram). The total time taken for cooling only applies once the temperature of cooked potentially hazardous food has dropped to 60°C following cooking.



Factors affecting cooling

The procedure used by the food business to cool potentially hazardous foods will depend on the following factors:

- The size or amount of the food to be cooled — large amounts will cool slower than small amounts, and cooling will be fastest on the food's surface and progressively slower towards its centre. As such, large volumes of food may not sufficiently cool all the way through within the times and temperatures specified.
- The density of the food (i.e. how solid or liquid a food is) — the denser the food, the slower it will cool.
- The cooling capacity of the equipment – for example, blast chillers will cool food much faster than refrigerators. Note that over stocking a refrigerator or placing large amounts of hot food into a refrigerator will reduce its overall cooling capacity.

With these factors in mind, cooling times can be reduced by:

- cooking and cooling smaller amounts or portions of food
- placing the food into large shallow containers (e.g. 5 cm deep) to cool
- using rapid-cooling equipment (e.g. blast chiller)

- stirring liquid foods frequently (ensuring the stirring utensil has been cleaned and sanitised)
- using water or ice water baths
- allowing cool air to circulate around the container of food to be cooled — potentially hazardous food should be cooled on racks and not on the floor of a cool room
- adding ice as an ingredient.

Monitoring the cooling process

It is important that the temperature of the food is monitored during cooling to ensure the procedure used is effective. Food temperatures should be checked with a clean, sanitised thermometer at the part of the food that will take the longest to cool, usually the centre of the food. It is good practice, and certain food service and catering businesses are required, to record the temperatures and the times the temperature was checked to make sure the cooling process used meets the specified requirement. An example template that may be helpful for recording cooling times and temperatures is provided in Appendix 8. Further information on using thermometers and measuring the temperature of food is provided under clause 22.

Standard 3.2.2A – Food Safety Management Tools applies additional requirements for substantiating food safety controls when cooling potentially hazardous food. If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, see the chapter on Standard 3.2.2A.

Examples

Cooling food safely

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

1. Rice

A restaurant's usual practice is to cook 12 cups of rice (the contents of a rice-cooker) daily and cool this rice in a container in the coolroom overnight for use the next day. However, checking the temperature of the centre of the cooked rice as it is cooling shows that the rice is not actually being cooled to 21°C within 2 hours and then to 5°C within the next 4 hours as specified by subclause 7(3). The food business needs to work out a faster cooling method to ensure the rice is safe to eat. It determines that if it divides the cooked rice in half and spreads each half on two shallow trays for cooling, the rice can be correctly cooled all the way through within the time periods of the cooling requirement. The business documents this process in its operating procedure and consistently uses this new cooling method for rice.

2. Gravy

A food business prepares a large batch of gravy in the morning to use later that day. The pan of gravy is placed in an ice slurry and then stirred regularly, checking the temperature several times over the next few hours to ensure cooling is within required timeframes.

Alternative cooling processes

Extended cooling times may be necessary where large cooked meats or other products need to be cooled. Large volumes of food will not cool to below 5ºC within the required time frames unless the mass and volume of the food can be decreased. If this option is not available, the business will need to put in place an alternative cooling system that will not adversely affect the microbiological safety of the food. Clause 25 outlines how a food business can demonstrate that a cooling process will not adversely affect a potentially hazardous food.

Alternative cooling processes have been established for cooked cured and uncured bulk meat products based on sound scientific evidence (see Appendix 5).

7(4) A food business must, when reheating previously cooked and cooled potentially hazardous food to hold it hot, use a heat process that rapidly heats the food to a temperature of 60°C or above, unless the food business demonstrates that the heating process used will not adversely affect the microbiological safety of the food.

This requirement only applies to cooked potentially hazardous food intended for hot holding (e.g. for holding in a bain marie, pie warmer etc.). Cooked and cooled food that is reheated for immediate consumption may be served at any temperature.

Standard 3.2.2A – Food Safety Management Tools applies additional requirements for substantiating food safety controls when reheating potentially hazardous food. If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, see the chapter on Standard 3.2.2A.

As discussed under subclause 7(3), pathogenic bacteria may be present in cooked food from spores and vegetative cells that survive the cooking process, as well as from contamination that might occur after cooking. Rapid reheating to 60°C or above is therefore required to minimise the time that the food is at temperatures that allow these bacteria to grow.

'Rapidly' heating food

'Rapidly' has not been defined, but the reheating process should be as quick as possible. The time needed will depend on the volume of the food, its density and the heat process used (e.g. stove top, oven, microwave). Based on the US Food Code, the time the food is between 5°C and 60°C should not exceed 2 hours.

Equipment designed only for hot holding, such as bain maries and many pie warmers, should not be used for reheating food (see Standard 3.2.3 subclause 12(1)). Foods should be quickly heated to an internal temperature of at least 60°C before being transferred to the hot-holding equipment.

A food business may use an alternative heating process if it can demonstrate that the alternative process does not compromise the microbiological safety of the food.

Food businesses are not required under this standard to heat previously cooked and cooled potentially hazardous food to temperatures higher than 60°C. However, other requirements (e.g. food safety programs) may apply.

Repeated cooling and reheating

It is best practice that potentially hazardous food that has already been reheated not be cooled and reheated a second time. This avoids the food being at temperatures that support the growth of pathogenic bacteria four times (from cooling, heating, re-cooling and reheating again). If pathogens were present in the food, they could multiply to dangerous levels.

Example

Slow reheating in a bain marie is a food safety issue

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

A food business places a precooked and chilled meat dish into a bain marie to reheat it and hold it hot for a buffet dinner. After two hours, the temperature is checked and shown to be still only 46°C. This practice is unsafe, as foodborne pathogens such as *Clostridium perfringens* and *Bacillus cereus* could grow to dangerous levels at this temperature.

The business should heat the dish quickly to at least 60°C in an oven or microwave before placing it in the bain marie unit, ensure the thermostat of the unit is set at 60°C or above to maintain temperature control, and regularly check the food's temperature with a probe thermometer. For best practice, any reheated food left over on the day should not be refrigerated again, but disposed of.

8 Food display

The intended outcome is that all food on display for sale and self-service is:

- protected from contamination
- for potentially hazardous food, either maintained at temperatures that minimise the growth of pathogenic microorganisms or displayed for a time that does not allow dangerous levels of pathogens to grow.

While all food should be displayed in a way that keeps it safe and suitable, extra care should be taken with:

- unpackaged food, because it is generally more vulnerable to exposure to hazards
- ready-to-eat food (see clause 1), because it will not be further treated to remove any contamination before it is eaten — additional requirements are discussed in subclauses 8(2) and 8(4)
- potentially hazardous food (see clause 1 and Appendix 1), because if it is contaminated with pathogenic microorganisms, these could grow to unsafe levels in the food during display —additional requirements are discussed in subclause 8(5).

8(1) A food business must, when displaying food, take all practicable measures to protect the food from the likelihood of contamination.

'Contamination' is defined in Standard 3.1.1. Food might not be identifiable as contaminated by its look, smell or taste, so to ensure displayed food stays safe it must be protected from the likelihood of contamination.

Packaged food

Displayed food that is packaged will generally be protected from contamination by its packaging. However, businesses should make sure that packaging is suitable for use with food (see clause 9) and remains intact so the food stays properly protected. Any food that might be contaminated because packaging is unsuitable or damaged should be removed from display and disposed of as per clause 11.

Unpackaged food

If displayed food is not packaged, the business must take steps to protect it from contaminants. These steps should be appropriate to the nature of the food and the risk posed. For example, ready-to-eat food that is unpackaged presents a greater risk than food that is not ready-to-eat (because it will not be further treated to remove any contamination before it is eaten); extra precautions are discussed below.

Practicable measures to protect food on display

The business should consider the type of food on display (and its intended use), the design of display units and the display location to ensure the food is appropriately protected. Practicable measures could include:

- locating displays to prevent contamination by:
  - » draughts that might blow in dirt, insects, chemicals, etc. (e.g. display in cabinets; away from open windows, doors or fans; or protect with erected wind shields if outside)
  - » insects or chemicals dropping from pest control devices (e.g. display away from sprays and zappers)
  - » direct contact with domestic animals (in an outdoor setting or home) and children (e.g. display at a height that is out of reach)
- covering food by using:
  - » food-grade cling wrap, bags or paper strips
  - » removable covers (such as cloches or chafing dishes)
  - » lidded containers
  - » display cabinets
- separating ready-to-eat foods from raw foods (e.g. having physical barriers in place or separate displays)
- avoiding topping up dishes of food on display, to prevent cross contamination between batches of food (see also clause 7 (1)(b))

- ensuring display platters, containers and benches are made of smooth food-grade material that can be effectively cleaned and sanitised (as per Standard 3.2.2 subclause 20(1) and Standard 3.2.3 clause 12)
- using signs in display areas to instruct customers as needed.

8(2) A food business must, when displaying unpackaged ready-to-eat food for self-service:

Being readily accessible to customers, unpackaged ready-to-eat food for self-service is particularly vulnerable to contamination from people's hands, sneezes, coughs, etc. If, for example, the food becomes contaminated with certain pathogenic microorganisms from a customer, such as noroviruses, then someone that consumes that food could become ill from those microorganisms.

Multiple approaches are required to keep this type of food safe during display; namely supervision, provision of separate serving utensils and physical barriers (specified below under paragraphs (a), (b) and (c)).

This subclause applies to all ready-to-eat products (see clause 1) in self-service displays, such as:

- salad and sushi bars and smorgasbords
- olive and antipasto bars
- breads and other bakery products
- fruit prepared (e.g. washed) for immediate eating
- confectionery
- toppings for desserts such as ice creams and yoghurts
- snack food provided for patrons in pubs, clubs, hotels (e.g. shelled nuts)
- taste-testing samples.

(a) ensure the display of the food is effectively supervised so that any food that is contaminated by a customer or is likely to have been so contaminated is removed from display without delay;

Supervision is essential to discourage customers from handling or tampering with exposed food and to make sure prompt action can be taken if needed. The level of supervision needs to ensure that if someone has or might have contaminated food, that food can be quickly removed.

The business should consider the best way to supervise food, depending on the type of food, its accessibility, and the traffic flow of customers. Food may be supervised by staff present at the display or by the use of surveillance cameras in real time. Displays might need higher levels of supervision, for example, at peak customer times.

Note that supervision is only required when customers are accessing food from the display.

Unpackaged food displayed for self-service in tamper-resistant equipment or containers does not need to be supervised (see subclause 8(3) below).

(b) provide separate serving utensils for each food or other dispensing methods that minimise the likelihood of the food being contaminated; and

The business must provide separate serving utensils or other dispensing methods for each displayed food. This minimises the likelihood of people touching the food and of contamination from one food being transferred to another. Examples of utensils and other dispensing methods include equipment such as tongs, serving spoons and forks, toothpicks, paper wraps and plastic bags that are provided for customers to select food without touching it.

Other measures to be considered include:

- to avoid contact between the serving utensil's used handle and the food, utensils could be placed in a clean and sanitary place next to the food, or utensils with long handles could be provided, so that handles do not rest on the food
- single use utensils and disposal containers could be provided for taste testing samples.

If containers are provided for food to be dispensed into, it is good practice to store these upside down to avoid aerosol droplets or other foreign matter falling in.

(c) provide protective barriers that minimise the likelihood of contamination by customers.

Protective barriers must be provided to minimise the likelihood of unpackaged ready-to-eat food becoming contaminated, where such contamination is likely to compromise the safety and suitability of food. A risk-based approach should be taken with the type of barrier used depending on the food and the nature of customer interaction, as not all interactions will likely result in food becoming unsafe or unsuitable.

Ideally, a protective barrier should be provided by permanent display units particularly where food is regularly displayed from a permanent site. These units should provide a guard, self-closing lid or similar barrier that minimises the chance of food being directly touched by customers and that protects it from customer aerosols (e.g. coughs and sneezes). Barriers should be placed at a height or angle that prevents customer aerosols readily landing on food.

Permanent barriers might not be practicable in some cases, such as for temporary displays.

Other ways that displayed unpackaged ready-to-eat food could be protected from customer contamination include using dishes with removable covers. If covers are used, they should be kept available so they can be placed back on the food once customers have served themselves.

Examples

Displays of unpackaged ready-to-eat food for self-service

1. Self-serve bread

A business displays bread loaves and rolls for customers to serve themselves. To make sure the displayed food is kept safe from contamination, the business takes the following actions:

1. A person is nominated to supervise the area.
2. Products are wrapped in paper bags or wide strips of paper to avoid direct handling.
3. Tongs are provided for customers to pick up items not covered by paper.
4. Bags are provided for customers to place products in.
5. Signage is placed in the display to instruct customers to use tongs and bags.

2. A*ntipasto bar*

A business displays sliced prosciutto, olives, sun-dried tomatoes and other antipasto products for customers to serve themselves. To make sure the displayed food is kept safe from contamination, the business takes the following actions:

1. A person is nominated to supervise the area.
2. Products are displayed in dishes under a permanent guard that is angled and at a height that minimises exposure to customers' aerosols.
3. Separate tongs and serving spoons with long handles are provided for each product for customers to select food.
4. Containers of several sizes are provided, placed upside down, for customers to place products in.
5. Signage is placed in the display to instruct customers to use separate utensils and containers.
6. All unsold products are covered with cling wrap or placed in containers at the end of the day and stored for sale the next day.

8(3) Subclause (2) does not apply to food in tamper resistant equipment or containers.

Unpackaged food displayed for self-service in tamper-resistant equipment or containers is not required to be supervised, or have separate serving utensils or protective barriers. An example is confectionery dispensers where the customer can only access the confectionery being bought.

8(4) A food business must not display for sale on any counter or bar, any ready-to-eat food that is not intended for self-service unless it is enclosed, contained or wrapped so that the food is protected from likely contamination.

Unpackaged ready-to-eat food displayed on counters and bars is vulnerable to contamination, particularly from customers' hands and aerosols (see subclause 8(2)). It must be displayed in containers, wrapped or enclosed in some other way so it is not left exposed. This subclause applies to ready-to-eat food that is displayed but is not for self-service.

Example

Displaying muffins and slices on café counter

A café prepares fresh muffins and slices to sell and displays them on the bench in open baskets and plates. They are not for self-service. This open display exposes the food to potential contamination by customers, and dust and insects. The business should protect the food from contamination, for example by wrapping it or placing it under covers or in a display case.

8(5) A food business must, when displaying potentially hazardous food:

(a) display it under temperature control; and

Potentially hazardous food must be displayed at temperatures that prevent any pathogenic microorganisms present growing to unsafe levels. This means maintaining it at or below 5°C or at or above 60°C unless the food business can demonstrate that the alternative practice it uses is safe. Manufacturer's storage instructions should be followed to maintain the product's quality and shelf life.

It might sometimes be impractical to display potentially hazardous food either at or below 5°C or at or above 60°C. For example, a business may freshly prepare large amounts of food for sale over a lunch period, but may not have a display cabinet of appropriate size to keep the food at or below 5°C or at or above 60°C.

Another example is a business may wish to display hot food at temperatures below 60°C to prevent the food from drying out. For these examples the businesses may demonstrate they can safely display potentially hazardous food at other temperatures, for example by using time as a control (e.g. see Appendix 2).

Factors to be considered when displaying potentially hazardous food in hot and cold displays include:

- Food on display might not be the same temperature as the display equipment. It is good practice to check the food's actual temperature (using a clean sanitised probe or infrared thermometer), rather than assume it is being kept at the same temperature as the display unit.
- The effectiveness of cold plate refrigeration would likely be reduced by the use of foam or cardboard mats under food trays, or when plates are stacked high under bright lights.
- The use of ice to chill food should ensure that all food for display is sufficiently chilled through adequate contact. For example, displaying a tub of prawns where only the base layer has contact with ice may not keep it sufficiently chilled, depending on the depth of product — the prawns should be in direct contact with ice or the tub deeply immersed in ice to ensure the prawns are chilled properly.
- Bain maries, pie warmers, etc. designed for hot-holding displays should only be used to keep hot food hot and not to heat up cold food. Heating cold food in this type of equipment could result in the food being held at temperatures that allow pathogenic microorganisms to grow to unsafe levels. See reheating under subclause 7(4).

It is good practice, and certain food service and catering businesses are required, to keep records of the times and temperatures that food is displayed. This helps with checking that display equipment is working properly and that temperatures are safe, and with ensuring corrective action is taken if needed. An example temperature record sheet is in Appendix 8.

Standard 3.2.2A – Food Safety Management Tools applies additional requirements for substantiating food safety controls when displaying potentially hazardous food. If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, see the chapter on Standard 3.2.2A.

Examples

Display of potentially hazardous food

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

1. Displaying cut melons

A market stall cuts rockmelons (cantaloupes), wraps them in plastic and displays them for sale at ambient temperature alongside whole fruit and vegetables. There is evidence that pathogenic bacteria such as *Salmonella* can be present on and in rockmelon skin and can cause foodborne illness (e.g. see Munnoch et al 2009). Because the rockmelon has been cut, bacteria from the skin might have been transferred to the flesh, which can support the growth of pathogenic microorganisms. The cut fruit is considered potentially hazardous and should ideally be displayed chilled (at or below 5°C), or otherwise displayed using time as a control (see Appendix 2).

2. Displaying food in hot-hold display

A takeaway stall displays hot curries and rice using bain marie units. These display units can keep the food at temperatures above 60°C, but because the food dries out quickly the business sets them at about 45°C. This practice may be unsafe because it holds food at temperatures that may allow pathogenic bacteria to grow in the food. The business should raise the temperature so the food is held at 60°C or otherwise ensure its practice is safe, for example by using time as a control (see Appendix 2).

(Note that while food held at 60°C or hotter for any length of time will remain safe to eat, the food's quality may be affected over time.)

Examples

Display of potentially hazardous food (continued)

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

3. Displaying Chinese roast poultry and pork

A business prepares traditional Chinese roast ducks, chicken and pork to sell. The cooked poultry and pork is usually displayed by hanging the meat at ambient temperature in the shop. This practice is generally considered safe (for the determined shelf life) because the processes of scalding, surface drying and glaze roasting creates a product that is not potentially hazardous. However, sometimes the processed poultry or meat is sliced and put on display. Once sliced, the surface protection is lost and the product becomes potentially hazardous food, so sliced poultry and pork must be displayed under temperature control.

4. Displaying boutique bakery products for self service

A boutique bakery sells a variety of savoury and sweet buns, quiches and rice rolls through self-service. Some of the products containing rice, egg, meat or fresh cream are potentially hazardous (see Appendix 1). All the food is displayed at room temperature in cabinets with sliding doors and customers are provided with trays and tongs. Displaying these foods at ambient temperatures is potentially unsafe because pathogens may grow or produce toxins to dangerous levels in the food. Ideally, the business should display the potentially hazardous foods at 5°C or below, or at 60°C or above. An alternative practice that can be demonstrated to be safe, such as the 2-hour/4-hour rule, could also be used (Appendix 2). The business should appropriately supervise self-service operations to minimise the risk of food becoming contaminated from customers' hands, coughs, etc.

(b) if it is food that is intended to be displayed frozen, ensure the food remains frozen when displayed.

If a food business intends to display food frozen, then the freezer it uses for the display (e.g. a rozen-food cabinet) must keep the food hard frozen. A specific temperature is not required — frozen food that feels hard is considered sufficiently frozen. However, food businesses should follow the manufacturer's storage instructions to maintain the product's quality and shelf life.

9 Food packaging

The intended outcome is that if food is packaged:

- it is packaged in a material that is fit for that purpose
- it is not contaminated by the packaging material or during the packaging process.

9 A food business must, when packaging food:

(a) only use packaging material that is fit for its intended use;

A food business should not place packaging materials in contact with food until it has established that the material is appropriate to be used for this purpose. Assurance that the packaging material is safe for use on food can be obtained from the material's manufacturer or supplier. Some packaging materials, for example some plastic containers, may have imprinted symbols to indicate they are safe for food, freezing, microwaving or use in dishwashers.

The following factors may affect whether a packaging material is fit for its intended use:

- the type of food being packaged (e.g. certain materials may not be suitable for acidic foods)
- the time period that the food will be in contact with the packaging
- environmental conditions the material will encounter (especially temperature and humidity)
- processes the material will encounter during its use with the food (e.g. heating, freezing, cleaning and sanitising)
- whether the packaging material contains recycled material, is being reused or re-purposed (i.e. used for a different purpose to its first use).

The food packaging must comply with the following:

- requirements in Standard 1.1.1 – Structure of the Code and General Provisions in relation to articles and materials in contact with food (previously covered by Standard 1.4.3 — Articles and Material in Contact with Food which is now removed from the Code)
- specific requirements related to reducing risks of contamination to food in Standard 1.4.1 — Contaminants and Natural Toxicants outlined in paragraph (b) below
- labelling requirements in standards in Part 1.2 of the Food Standards Code.

Example

Ensuring containers are safe for use with food

A food business needs plastic storage containers that are suitable for freezing and microwaving food. It sources containers from a reputable food packaging supplier, and checks that the containers are specifically described as microwave- and freezer-safe.

(b) only use material that is not likely to cause food contamination; and

'Contamination' is defined (Standard 3.1.1 Interpretation). A packaging material must not compromise the safety and suitability of food that comes into contact with it. Packaging material might contaminate food in three ways:

- if chemicals from the packaging leach into food
- if microorganisms, dirt or other foreign material that may be contaminating the packaging material itself transfer to food

- if parts of the packaging itself break off into the food, for example glass or wood splinters.

Substances used to make food packaging

The fact that chemicals in food packaging material can migrate into food is scientifically well established (de Fatima and Hogg 2007, Robertson 2013). So the chemicals used to make food packaging (including added components such as moisture- or oxygen-absorbing sachets, etc.) should present no known toxic hazards to the consumer of the food. The manufacturer of the packaging material must minimise the likelihood of chemicals migrating into the food and comply with any specific requirements, including Standard 1.4.1 — Contaminants and Natural Toxicants, which specifies maximum limits allowed in foods for certain food packaging chemicals (e.g. for tin in canned foods, and acrylonitrile and vinyl chloride — used in the production of plastics — in any food).

For chemicals with no legal limit specified, the packaging manufacturer or supplier must still ensure that the packaging material will not endanger the safety and suitability of the food in contact with it. Existing standards may be useful for establishing safe chemical levels. The Australian Standard AS2070-1999 Plastic Materials for Food Contact Use is not mandatory but provides guidance on the production of plastic materials, colourants, printing inks, coatings and other substances for food contact use. It also refers to regulations in the United States (US FDA Code of Federal Regulations) and the European Commission Directives.

Recycled and reused materials

Recycled materials may be used for food packaging provided they are suitable for food contact use and will not contaminate the food. As for any food packaging, the food business should consider potential risks posed to food safety and suitability from recycled or reused materials; for example:

- Some recycled materials (e.g. newspaper) may contain inks or other chemicals that are not safe for use with food. However, some packaging comprised of recycled material may include added protection (e.g. an inner bag or coating) to prevent these chemicals leaching into food.
- Repeated use of some packaging material may result in food becoming contaminated from chemicals released as the packaging deteriorates. Cleaning and sanitising processes may affect the properties of the packaging if it has not been designed for repeat use (see also clause 23).

The Australian Packaging Covenant website has useful guidance on recycled materials used for food contact — see Resources and References.

Glass and breakable materials

Glass or other fragile materials used for food packaging should be able to withstand reasonable handling, to avoid breakages contaminating the food.

Protecting food packaging from contamination

To prevent food becoming contaminated from packaging that is not clean and free from foreign matter, the packaging material must be protected from contamination. For example, it should be stored in containers or appropriately covered, in a clean area secured away from toxic chemicals, pests and animals. It should also be free from defects such as chips, splinters or crevices that could harbour debris or microorganisms.

Any packaging material that might be contaminated must not be used in contact with food.

Example

Protecting food packaging material during storage

A food business is storing food packaging material in a shed at the back of the premises. The shed is not clean nor vermin proof. The business needs to find a more appropriate place to store the packaging material; for example, they could use a dedicated food (or food packaging) storage area. Keeping the packaging free from dirt, insects or animal waste will prevent contamination transferring to food packed in it in the future.

Food containers should not be used to store toxic chemicals as a general rule, regardless of whether the containers will be reused for food or not. Otherwise, the chemical could be accidentally used in food or served to customers and cause illness. The storage of poisons in food containers may breach state and territory poisons legislation.

(c) ensure that there is no likelihood that the food may become contaminated during the packaging process.

During packaging the food may be exposed to contamination from:

- the packaging equipment itself (e.g. if it is dirty or contaminated from previous food contact)
- parts of the equipment (e.g. spitting machinery oil or loose ball bearings)
- dirt, insects, chemicals or other foreign matter at the premises (e.g. insects falling from a bug zapper, overhead fans blowing dust onto food) — see example below
- food handlers contacting the food directly (e.g. from poor hygiene practices) or indirectly (e.g. if their hair or jewellery fall into the food).

To prevent contamination during the packaging process, businesses should ensure the packaging and associated equipment is well maintained (as per clause 21), clean and if necessary, sanitised (as per clause 20). Compliance with other clauses of the food safety standards, such as ensuring food handlers have appropriate skills and knowledge to package food (clause 3), and exercise good hygiene practices (clause 15) will assist with compliance with this clause.

Example

Contamination of food during packaging

A food business packages a variety of food products. During packaging, a food handler notices that dead insects occasionally fall into the exposed food from bug zappers located in the packaging area. To avoid insects contaminating the food, the business relocates the bug zappers well away from any exposed food or packaging.

Doggy bags — information on the use of containers for providing customers with leftover food is provided in regulatory agency websites in Resources and References.

10 Food transportation

The intended outcome is that during transport, food is protected from contamination and if it is potentially hazardous food, kept at a temperature that minimises the growth of pathogenic microorganisms, having regard to the transport time.

This clause applies to all food being transported from one place to another, whether within premises or from one premises to another. For example, it includes food being transported to wards in a hospital, and food being transported in vehicles.

While all food must be transported in a way that keeps it safe and suitable, extra care should be taken with:

- unpackaged food, because it is generally more vulnerable to exposure to hazards
- ready-to-eat food (see clause 1), because it will not be further treated to remove any contamination before it is eaten
- potentially hazardous food, because if it becomes contaminated with pathogenic microorganisms (e.g. from customers, animals or pests), these could grow to dangerous levels during transport (see clause 1 and Appendix 1)—additional requirements for this food are discussed in subclause 10(b).

10 A food business must, when transporting food:

(a) protect all food from the likelihood of contamination;

While all food being transported must be protected, the level of protection required will depend on the type of food and whether it is packaged.

All vehicles used to transport food, including shopping trolleys, should be designed, constructed and cleaned to reduce the risk of food becoming contaminated during transport (see Standard 3.2.3 clause 17).

Food must not be transported in the same part of a vehicle that is carrying live animals (e.g. pets) other than live fish, shellfish or other live seafood (see 3.2.2 subclause 24(1)(a)).

Packaged food

Food that is packaged will generally be protected from contamination during transport by its packaging. However, care should be taken to ensure the packaging does not become damaged or contaminated in a way that might affect the safety or suitability of the food.

Damage could result from poor handling during packing of a vehicle, or from exposure during transport to environmental factors such as rain or extreme heat. Contamination could result, for example, from transporting food with chemicals. Wherever possible, this should be avoided or chemicals should be securely packaged separately from food to minimise contamination risks.

Unpackaged food

Unpackaged food is more vulnerable to contamination. It can be protected during transport, for example, in the following ways:

- placing unpackaged food, particularly ready-to-eat food, in food-grade containers or other appropriate wrapping for transport
- placing the food in a clean and enclosed area of the transport vehicle (e.g. transporting unpackaged meat carcasses enclosed within a clean truck)
- separating ready-to-eat foods from raw food such as raw meat, to avoid contamination from the raw food (e.g. meat juices) being transferred to the ready-to-eat food.

(b) transport potentially hazardous food under temperature control; and

During transport, potentially hazardous food must be kept under conditions that minimise the growth of pathogenic microorganisms. 'Potentially hazardous food' and 'temperature control' are further explained in clause 1 and Appendix 1.

Potentially hazardous food that needs to be kept cold during transportation should be transported in vehicles with appropriate equipment such as fitted refrigeration, ice bricks, or insulated containers. Similarly, food that needs to be kept hot during transport could be transported for example in insulated bags.

A business may transport potentially hazardous food at temperatures between 5°C and 60°C if they can demonstrate the practice is safe, for example using time as a control (e.g. see Appendix 2). Some examples of when this might arise are listed under subclause 5(3).

Transport businesses may find it useful, and certain food service and catering businesses are required, to keep records of transport time and temperatures. This helps a business demonstrate that potentially hazardous food has been kept safe during transport.

Examples

Transporting potentially hazardous food

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

1. Home delivery of hot takeaway food

A takeaway food outlet offers a home delivery service for its hot food. It has established and documented that all food can be transported from the business to customers' homes within 40 minutes. The business therefore determines that it does not need to ensure the food is at a temperature of 60°C and above while it is being transported. However, it transports the food in insulated bags so it is still acceptably warm for customers.

2. Transporting chilled meat over long distances

A butcher supplies meat to restaurants over a wide delivery area. Many of its customers are several hours drive away. The butcher transports the meat in a refrigerated truck that is well maintained and fitted with a temperature data logger, to ensure it keeps food sufficiently chilled during transport.

(c) ensure that potentially hazardous food which is intended to be transported frozen remains frozen during transportation.

The business transporting frozen potentially hazardous food must keep this food frozen hard, unless it has been otherwise requested by the business receiving this food. Although a temperature for 'frozen' has not been specified, frozen food does not include food that is partly thawed. If the receiving business needs the food thawed or partially thawed for processing, this request should be agreed in advance.

Temperature control during transport of food that is not potentially hazardous

Specific temperature requirements have not been included for transporting food that is not potentially hazardous, for example frozen vegetables. However, all food needs to be kept at temperatures that prevent the food from becoming unsuitable. Storage instructions provided by the manufacturer should be followed for transportation, to ensure that food keeps for its intended shelf life.

11 Food disposal

The intended outcomes are that food that is recalled, returned or suspected of being unsafe and/or unsuitable is held, separated and identified from other food until it is:

- destroyed
- used for purposes other than human consumption
- returned to its supplier
- further processed in a way that ensures its safety and suitability, or
- ascertained to be safe and suitable;

and that food that has been served to a person is not resold unless the food has remained completely wrapped.

11(1) A food business must ensure that food for disposal is held and kept separate until it is:

'Food for disposal' is explained in subclause 11(2) below. A food business is required to hold this food and keep it separate from other foods until it has been assessed and dealt with as outlined in (a) to (d) below. This is to prevent the food from being accidentally sold or used. Food that is being held and kept separate must also be identified (see subclause 11(3)).

A completely separate storage area is not required, but these foods should be kept away from foods for sale. For example, the business could use a dedicated refrigerator shelf or dry storage area solely for this purpose, or keep these foods in special containers.

(a) destroyed or otherwise used or disposed of so that it cannot be used for human consumption;

The business may destroy or dispose of the food to ensure it cannot be consumed. Food would usually be disposed of by placing it in the rubbish. If large amounts of food need to be disposed of, special arrangements might need to be made. The business should check with their local food regulatory authority or waste contractor if they are planning to dump large quantities, because the food may need to be destroyed or treated before it is dumped.

The food may be able to be used for purposes other than human consumption, for example as animal feed. The business may need to seek advice to confirm the food is suitable for the alternative purpose (for example some animal products may not be suitable for animal feed).

(b) returned to its supplier;

The food may be returned to the supplier, if for example it:

- is subject to a food recall
- has been incorrectly delivered
- has deteriorated or perished within its stated shelf life.

(c) further processed in a way that ensures its safety and suitability; or

The food may be able to be further processed to ensure its safety and suitability. For example:

- incorrect or damaged packaging could be replaced
- a new label could be applied to provide information that was previously missing
- a problem during manufacture could be rectified by re-processing.

Example

Re-processing food to ensure it is safe

A home-based business produces fruit preserves. The business owner finds that a batch of preserves she made on the previous day has not sealed correctly and so could be contaminated (or become contaminated during future storage). She decides to re-process the batch and empties the contents of the jars back into the jam pan to repeat the heating step. The preserves are then re-packed into new sterilised jars, and sealed securely.

(d) ascertained to be safe and suitable.

If a food business determines that food set aside for disposal is actually safe and suitable, the food can be resold. When assessing whether the food is safe and suitable, the following factors should be considered:

- for packaged food, whether the packaging is intact and not damaged or tampered with so the food is unlikely to have become contaminated
- if it is perishable food, whether it has been handled correctly so that it is not likely to have become damaged or deteriorated
- if it is potentially hazardous food, whether it has been kept under temperature control to prevent pathogens or their toxins reaching dangerous levels
- if the food is unpackaged, whether contamination of the food has occurred or is likely to have occurred.

Examples where returned food may be assessed as being safe and suitable for resale include:

- packaged non-perishable food that is returned for exchange or refund by a customer to a supermarket
- packaged food that is returned by a food business to the supplier because the order was incorrect
- food that was suspected by a food manufacturer to be unsafe or unsuitable and is subsequently found to be safe and suitable.

Food that has been served to a person and then returned cannot be determined as safe and suitable for resale unless the food was completely wrapped when served and has remained completely wrapped (subclause 11(4)).

11(2) In subclause (1), 'food for disposal' means food that:

(a) is subject to recall;

A food business is required to recall food that has been determined to be (or likely to be) unsafe. Further information is provided in clause 12.

(b) has been returned;

This includes any food that is returned to the food business from the person or business it has been sold to, for any reason. Examples are:

- food returned to a supermarket, restaurant or café
- food returned to a manufacturer, wholesaler or transporter.

(c) is not safe or suitable; or

Food that is not safe or suitable includes food that:

- has become contaminated by chemicals or foreign matter
- has become contaminated with pathogenic microorganisms
- is damaged, or has deteriorated or perished.

(d) is reasonably suspected of not being safe or suitable.

Sometimes the food business will not know for certain whether a food is unsafe or unsuitable. However, if the business reasonably suspects that a food is unsafe or unsuitable, it is considered to be food for disposal. Examples include:

- food that is reasonably suspected of being contaminated by foreign matter (e.g. glass, insects, cleaning chemicals)
- food that is reasonably suspected of being damaged, or having deteriorated or perished
- potentially hazardous food that has been left too long at temperatures between 5°C and 60°C
- food that has not been processed correctly.

What is 'reasonable to suspect' is not defined and would be for a court of law to determine. The food business should use a commonsense approach. For example, if the business breaks a glass or a light shatters near exposed food, it would be reasonable to suspect that the food could be contaminated with glass. However, if the glass shatters well away from the exposed food and upon checking no glass can be found in this food, it may be reasonable to assume that the food has not become contaminated.

11(3) A food business must clearly identify any food that is held and kept separate in accordance with subclause (1) as returned food, recalled food, or food that is or may not be safe or suitable, as the case may be.

The food being held must be identified in some way to show that it is returned food, recalled food or food that is or may be unsafe or unsuitable. If the food is packaged, a label or permanent pen marking, for example, may be applied to the packaging material. If the food is being held in a storage container, the container needs to be marked or labelled.

Food that is immediately assessed and determined not to require holding does not need to be identified. For example, if food is found to be mouldy and immediately thrown out, it does not need to be identified because it is not being held. However, if the business needs to keep the mouldy food, for example to return it to the supplier, it must be kept separate from food for sale and be identified.

11(4) A food business must not sell food that has been already served to a person to another person unless the food was completely wrapped when served and has remained completely wrapped.

This subclause allows packaged food to be resold if the food was completely wrapped when served and has remained completely wrapped. This includes, for example:

- packaged snack food such as chips and chocolate bars
- packaged condiments and spreads such as sugar, salt, tomato sauce, soy sauce and jam
- condiments wholly contained within dispensers such as bottled tomato sauce, soy sauce and salad dressings, and salt and pepper shakers
- unopened drink bottles or cans.

Food that cannot be resold includes:

- food that is only partially wrapped or enclosed, for example milk in a jug
- unpackaged food (including drinks) that has been served to a person in a restaurant, café, bar, etc., as it is likely to have been contaminated by that person as they handle or eat it. Even food that appears untouched by the customer must not be resold; for example, rice served in rice steamers or bread rolls served in table baskets.

Food that has been served to a customer incorrectly may be re-served, provided that the customer has not touched the food and it is immediately re-served.

12 Food recall

The intended outcome is that food manufacturers, food importers and wholesale food suppliers have a recall system that will ensure that unsafe food is promptly removed from distribution and sale.

A food recall system includes the procedures and arrangements that a food business has in place to remove unsafe food products that it has manufactured, imported or distributed. A food recall may be required if a food poses a risk to people's health or safety; for example, if food contains dangerous levels of pathogenic microorganisms, chemicals or foreign matter (e.g. glass), or has been incorrectly labelled (e.g. undeclared allergens), or has faulty packaging.

FSANZ's *Food Industry Recall Protocol* and the FSANZ website provide information about recalling food in Australia and developing a food recall plan, including useful templates for food businesses — refer to Resources and References.

This clause does not cover food withdrawals, usually conducted for food that does not meet quality standards and where there is no associated public health and safety issue.

12 A food business engaged in the wholesale supply, manufacture or importation of food must:

(a) have in place a system to ensure the recall of unsafe food;

This requirement applies to food manufacturers, food importers and wholesale food suppliers, regardless of the scale and type of business (e.g. including small home-based businesses and businesses selling food via the internet). The requirement for a recall system applies to these sectors because their products are not for immediate consumption and are generally stored by customers. Food intended for immediate consumption is likely to have been eaten before it can be recalled.

Retail food businesses such as restaurants, cafés, takeaways etc. that prepare food for immediate consumption are not required to have a recall system unless it is also a food manufacturer, importer or wholesaler. For example, a café or market stall that makes its own jam only for use on the premises does not have to have a recall system for this food. However, if the same business decides to sell this jam to the public, it will need a recall system (since it is the manufacturer of the jam).

The objectives of a food recall are to:

- stop the distribution and sale of the product as soon as possible
- inform the government, the food businesses that have received the recalled food and the public (consumer level recalls only) of the problem
- effectively and efficiently remove unsafe product from the market place.

To meet these objectives a food recall system should have the following key features.

1. A list of authorities that should be notified of the recall.

Government authorities that the business should notify in the event of a recall include:

- FSANZ, which has responsibility for coordinating the recall nationally
- the food regulatory agency of the state or territory where the business's head office is located. This could be a health department, other food authority or primary industries agency. Their roles and responsibilities are explained in FSANZ's *Food Industry Recall Protocol*. Contact details for these authorities are available in the protocol and on the FSANZ website.

2. Records of where product has been distributed.

It is critical that the business can identify and notify all of its customers of a food recall so that the affected batches of food can be retrieved from them as soon as possible. To ensure this, the business needs to maintain up-to-date records of:

- contact details for all the businesses to which they supply their products, including:
  - » contact names
  - » telephone (including after hours) and email details
  - » address details identifying which states, territories and, if relevant, other countries that receive their product
- which batches of product have gone where, including unique identifiers for lots/batches of food and details of volumes dispatched so they can be easily traced.

Where a food business does not deal directly with retailers (e.g. if its product is distributed via a distribution centre), it should still know which retailers its products are distributed to, or be able to readily obtain this information in the event of a recall.

Businesses recalling food might have to retrieve products from a number of different customers depending whether it is a trade- or consumer-level recall.

A trade recall involves food not directly sold to the general public but sold to other food businesses such as distribution centers, re-processors, manufacturers and wholesalers. It may involve food in hospitals, restaurants and other major catering establishments, and outlets that sell food manufactured for immediate consumption.

A consumer recall involves the food product at all points in the production and distribution network including any affected product bought by consumers. These recalls may involve, but are not limited to, trade outlets, retail outlets, supermarkets, grocery stores, health food stores, online stores, pharmacies and gyms that sell food.

Example

Food recall delayed due to lack of information

A food business finds a fault with a batch of products that will make those products unsafe to eat, so begins to conduct a recall. On notifying its state or territory regulatory agency and FSANZ, the business is required to provide details on the product (including name, packaging, batch codes, date marks, quantity) and all the companies where the product has been distributed.

Unfortunately, the business does not have the distribution information readily available and spends all day tracking down the contact and address details of the retail outlets it supplies. This in turn causes unnecessary delays in removing the affected product from shops and in alerting the public about the unsafe food.

Most importantly, the delay increases the chance that someone will eat the product and become unwell. After the recall is completed, the business ensures its distribution information is always kept up to date so this problem won't happen again.

3. Arrangements for advising customers to ensure that food is returned.

The following advice must be provided to businesses or persons who have the product:

- the name of the product and the batch code or date mark covered by the recall
- why the food is being recalled
- where to return unsold food
- who to contact in the company for further information.

FSANZ's *Food Industry Recall Protocol* and web site describe ways of providing information to the public, such as through press advertisements and social media.

4. Arrangements for retrieving food that is returned by customers to supermarkets or other outlets, if this is applicable.

Customers may be advised to return the recalled food to the place of purchase. This may be retail premises rather than the wholesaler, manufacturer or importer recalling the food. The recalling business should tell the business that receives the returned food how it should dispose of that food. Any food disposal must comply with clause 11.

5. Arrangements for assessing how much food has been returned and how much remains in the market place.

A records system to log food that has been returned should be included to ensure, as far as is reasonably possible, that all the affected food is retrieved.

(b) set out this system in a written document and make this document available to an authorised officer upon request; and

The recall system must be documented and available to an authorised officer on request.

It is good practice for the business to have a copy of the recall system on the food premises, to enable prompt action if a recall situation arises and to ensure it is immediately available if an authorised officer requests to see it. The document may be kept electronically.

(c) comply with this system when recalling unsafe food.

The system will only ensure that unsafe food is successfully recalled if it is actually used by the food business. The food business is required to comply with the system it has developed if it has to recall an unsafe product.

Division 4 — Health and hygiene requirements

Subdivision 1 — Requirements for food handlers

'Food handler' and 'handling' (of food) are defined in Standard 3.1.1 Interpretation. Note that the food business is ultimately responsible for the safety and suitability of food handled by that business.

For food handlers in food service or retail that handle unpackaged, potentially hazardous food, Standard 3.2.2A may also apply. This standard contains extra requirements, including mandatory training on food safety and personal hygiene. See the chapter on Standard 3.2.2A.

13 General requirement (on food handlers)

The intended outcome is that food handlers take all reasonable measures not to compromise the safety and suitability of food.

13 A food handler must take all reasonable measures not to handle food or surfaces likely to come into contact with food in a way that is likely to compromise the safety and suitability of food.

'Surfaces likely to come into contact with food' include eating and drinking utensils, food preparation equipment and food packaging materials.

'Reasonable measures'

What would be considered 'reasonable measures' will depend on the particular situation and the food handling operations the food handler carries out.

Measures that the food handler could take to minimise the likelihood of compromising food safety and suitability include (to the extent that is reasonable):

- ensuring food is cooked or processed correctly
- ensuring potentially hazardous food is kept at the correct temperature or, if time is being used as a control, that the maximum amount of time has not been exceeded
- ensuring food is adequately protected from contamination
- ensuring eating and drinking utensils and food contact services are correctly cleaned and sanitised
- ensuring food contact surfaces are adequately protected from contamination
- reporting to a supervisor when a problem is observed (e.g. equipment is not working correctly).

14 Health of food handlers

The intended outcomes are that:

- food handlers suffering or suspected to be suffering from foodborne diseases or certain conditions do not contaminate food
- a food handler notifies the food business if the food handler suspects he or she may have contaminated food.

14(1) A food handler who has a symptom that indicates the handler may be suffering from a foodborne disease, or knows he or she is suffering from a foodborne disease, or is a carrier of a foodborne disease, must, if at work:

'Foodborne disease' is explained in clause 1. If a food handler is infected with a pathogen that can be transmitted via food, they could transfer these pathogens to food and cause illness in the people who eat it. In some cases, even if a food handler feels well or shows no symptoms of foodborne disease, they could have a pathogen and transmit it via contaminated food.

Diseases that are known to be transmitted by food that has been contaminated by infected food handlers are listed in the table below. This information has been compiled (February 2016) from expert elicitation with OzFoodNet, a collaborative network of state and territory health authorities (see http://www.ozfoodnet.gov.au/).

Common foodborne diseases that can be transmitted by food handlers	
Campylobacteriosis	Norovirus
Cryptosporidiosis	Pathogenic *Escherichia coli* infection
Entamoeba histolytica infection	Rotavirus
Enteric fever (typhoid, para typhoid)	Salmonellosis
Giardia infection	Shigellosis
Hepatitis A	*Staphylococcus aureus* gastroenteritis
Hepatitis E	Yersiniosis

Subclauses 14(1)(a), (b) and (c) described in the paragraphs below apply to:

1. Food handlers who have a symptom (diarrhoea, fever, vomiting, sore throat with fever, or jaundice) that indicates he or she may be suffering from a foodborne disease — unless they know they have those symptoms due to another reason; for example vomiting because of pregnancy or diarrhoea from a diagnosed bowel disorder.

2. Food handlers who know they are suffering from a foodborne disease, because they have been diagnosed by a medical professional.

3. Food handlers who know that they are carriers of a foodborne disease (excluding *Staphylococcus aureus*), because they have been diagnosed by a medical professional — a person who carries a disease does not have symptoms but still sheds the pathogen and is therefore capable of contaminating food.

(a) report that he or she is or may be suffering from the disease, or knows that he or she is carrying the disease, to his or her supervisor, as the case may be;

If any of 1–3 above apply, the food handler must, if at work, inform their supervisor. If the food handler is in any doubt about whether they have a foodborne illness, they should inform their supervisor and/or seek medical advice.

(b) not engage in any handling of food where there is a reasonable likelihood of food contamination as a result of the disease; and

Whether the food handler can safely undertake any duty that involves handling food should be assessed on a case-by-case basis by the relevant authority together with the affected food handler and their supervisor. State and territory health authorities have policies in place outlining the circumstances when persons need be excluded from certain duties.

Generally, it would not be acceptable for a food handler to be at work while suffering vomiting and/or diarrhoea. Food handlers may be legally obliged to comply with an exclusion notice issued from a health authority.

When determining what duties an affected food handler should be excluded from, the following factors need to be considered:

- **What disease is the food handler suffering from or carrying?**

A food handler suffering from illness caused by *Salmonella* Typhi, *Shigella* spp., enterohaemorrhagic *Escherichia coli* or Hepatitis A virus, is considered to pose the most risk due to the high infectivity and virulence of these pathogens.

- **What are the food handler's duties?**

Duties that involve direct contact with ready-to-eat food, or eating and drinking utensils would be considered higher risk than duties that do not involve these things.

- **Does the food handler work at a business that provides food to a susceptible population?**

If the business provides food to the young, the elderly or the immuno-compromised (e.g. in hospitals, nursing homes or child care centres), greater precautions need to be taken.

- **If the food handler was ill, how long is it since they showed symptoms?**

National guidelines for the management of gastroenteritis outbreaks recommend that food handlers should not return to their usual duties until they have been symptom-free for 48 hours (Australian Government Department of Health and Ageing and Communicable Diseases Network Australia 2010, OzFoodNet Working Group 2012a).

(c) if continuing to engage in other work on the food premises — take all practicable measures to prevent food from being contaminated as a result of the disease.

If there are no or only limited food-handling activities that the affected food handler can do safely, they may do other things within the business. Examples may include administrative duties or general cleaning duties provided these duties do not include contact with eating and drinking utensils or food contact surfaces.

An affected food handler may need to be restricted from a food business completely if:

- there are no food handling activities they could undertake without there being a reasonable likelihood of food contamination as a result of their disease
- no other activities could be found for the food handler to do safely or be able to do
- the food handler poses a risk (if their disease is highly infectious) to other persons working in the business.

14(2) A food handler who suffers from a condition must, if at work:

'Condition' is explained in clause 1.

(a) if there is a reasonable likelihood of food contamination as a result of suffering the condition — report that he or she is suffering from the condition to his or her supervisor; and

A food handler suffering from a condition while at work must report this fact to their supervisor.

The only exception is if it is not reasonably likely that food will become contaminated as a result of the food handler suffering the condition, such as if:

- the food handler does not have any direct contact with food, food contact surfaces or eating and drinking utensils
- an infected skin lesion is on an unexposed part of the food handler's body and is covered so that it cannot be touched during food handling.

(b) if continuing to engage in the handling of food or other work — take all practicable measures to prevent food being contaminated as a result of the condition.

Practicable measures that the affected food handler may be able to take if they continue to work at the premises include:

- completely covering infected skin lesions with bandages or dressings and, if the skin lesion is on an exposed part of his or her body, covering the bandage or dressing with a waterproof covering (this may not always be practicable, e.g. with acne)
- avoiding touching the infected skin lesion, or discharge from ear, nose or eye
- washing and drying hands thoroughly if direct contact is made with an infected skin lesion or discharge
- using medication to dry up discharges from the ear, nose or eye
- using disposable tissues to mop up any discharge, followed by thoroughly washing and drying hands.

14(3) A food handler must notify his or her supervisor if the food handler knows or suspects that he or she may have contaminated food whilst handling food.

If a food handler knows or suspects they have contaminated food while handling it, they are required to notify their supervisor as soon as possible. Prompt reporting enables the supervisor to assess what should be done to ensure food safety or suitability (e.g. the food might need to be discarded or equipment might need to be cleaned and sanitised immediately).

Examples where a food handler has or may have contaminated food include the following:

- the same gloves or utensils have been accidentally used for handling raw and then cooked food
- jewellery has or may have fallen into food
- a bandaid has or may have fallen into food
- glass has been broken into or near exposed food.

15 Hygiene of food handlers

The intended outcome is that personal hygiene practices of food handlers are of a level that minimises the contamination of food.

15(1) A food handler must, when engaging in any food handling operation:

(a) take all practicable measures to ensure his or her body, anything from his or her body, and anything he or she is wearing does not contaminate food or surfaces likely to come into contact with food;

Poor personal hygiene practices of food handlers may result in food becoming contaminated from their body or something they are wearing. Food handlers must take all practicable measures to ensure these things do not contaminate food, or surfaces likely to come into contact with food.

For food handlers in food service or retail that handle unpackaged, potentially hazardous food, Standard 3.2.2A may also apply. This standard contains extra requirements, including mandatory training on food safety and personal hygiene. See the chapter on Standard 3.2.2A.

Examples of contamination sources and practicable measures are given in the table below. The measures that should be taken will depend on circumstances such as the duties of the food handler, but are particularly important for food handlers working in direct contact with exposed food or surfaces likely to come into contact with food.

Source of contamination by food handler	Practicable measures to avoid contamination of food or surfaces likely to come into contact with food
Body (e.g. hands, arms, face)	• ensuring hands are thoroughly washed and dried before handling food or using gloves • avoiding unnecessary contact with exposed food, especially ready-to-eat food (see also 15(1)(b)) (e.g. not using fingers to taste food) • avoiding unnecessary contact with surfaces likely to come into contact with food (e.g. handling clean glasses by the bottom or the stem instead of the inside)
Bodily secretions (saliva, mucus, sweat and blood)	• see paragraphs 15(1)(e)–(h) below
Clothing	• ensuring all buttons, flaps, sequins, etc. on clothing are secure • ensuring clothing is clean (see 15(1)(c))
Fingernails	• wearing clean intact gloves while handling food or surfaces likely to come into contact with food • keeping fingernails short to allow them to be easily cleaned, to avoid bits of fingernail breaking off into food, and to avoid accidentally tearing gloves and food packaging • not wearing nail polish, artificial fingernails or other fingernail decorations • for long nails, extra effort must be made to thoroughly wash under nails, which can trap dirt, faecal matter, etc.
Hair	• restraining hair by tying it back, using hairnets, beard restraints, bandannas, hats, etc.
Hair bands, clips, pins	• wearing no or a minimum amount of hair accessories • ensuring any hair accessories worn are secure and/or covered (e.g. with a hair net)
Jewellery	• wearing no jewellery or a minimum amount of jewellery, especially on hands and wrists • ensuring any jewellery worn is not loose • if any jewellery is worn on hands or wrists, ensuring that extra effort is made to thoroughly clean under and around the jewellery • wearing gloves over jewellery on hands • not touching jewellery, especially jewellery in body piercings

Source of contamination by food handler	Practicable measures to avoid contamination of food or surfaces likely to come into contact with food
Adhesive dressings and other bandages	• ensuring all dressings and bandages are secure and/or covered (e.g. with a glove) • 15(1)(d) requires bandages and dressings on exposed parts of the body to be completely covered and waterproof
Mobile phones	• ensuring phones being held in clothing are held securely • avoiding using phones during food handling tasks • if a phone is touched during food handling, ensuring hands are thoroughly cleaned afterwards

(b) take all practicable measures to prevent unnecessary contact with ready-to-eat food;

Contact with ready-to-eat food (e.g. cooked meat, prepared salads and sandwiches) should be kept to a minimum because it will not be further processed to destroy any pathogens that may be transferred to it. Even small numbers of some foodborne pathogens can cause illness, such as noroviruses. In addition, a food handler may not be aware that they are shedding (releasing) a pathogen and so may not realise they may be contaminating food during handling.

Practical measures the food handler can take to prevent unnecessary contact with ready-to-eat food include:

- using clean tongs or other implements to handle the food
- using gloves, ensuring that the gloves are changed if they become contaminated (see clause 23)
- using other barriers, such as greaseproof paper or inside out food-grade plastic bags, to contact the food.

It is recognised that gloves may not be practicable for some tasks with ready-to-eat food; for example, if a food handler is making cake decorations or other intricate foods. If direct hand contact is necessary, hands must be thoroughly washed and dried before the food is handled, as per subclause 15(4).

(c) ensure outer clothing is of a level of cleanliness that is appropriate for the handling of food that is being conducted;

Dirty clothing might contaminate food if the clothing directly touches food or if food handlers touch their dirty clothing (e.g. wipe their hands) and then touch food. Food handlers are obliged under paragraph (a) of this clause to ensure that their outer clothing does not contaminate food or surfaces likely to come into contact with food. This paragraph (c) recognises that the clothing of food handlers involved in 'messy' activities will not be as clean as those who are involved in 'clean' activities. For example, the outer clothing of a butcher would not be expected to be as clean as that of a food handler preparing sandwiches.

Clothing should be changed if it becomes so dirty that it is likely to contaminate food or surfaces likely to come into contact with food. For example, food handlers should change outer clothing between handling exposed raw food and then exposed ready-to-eat food if the clothing is contaminated and may contaminate the ready-to-eat food.

Wherever possible, aprons, overalls and other outer protective clothing should only be worn in food handling areas; they should be removed for toilet and other breaks.

(d) only use on exposed parts of his or her body bandages and dressings that are completely covered with a waterproofed covering;

Seepage from a wound can contaminate food from direct contact, or if the food handler touches the seepage and then touches food. To prevent this, wounds on exposed parts of the body are required to be completely covered with a waterproof covering.

A waterproof covering:

- may be included as part of the bandage or dressing material
- may be a separate covering placed on top of the bandage or dressing — if the bandage or dressing is located on a hand, a suitable glove should be used
- may be coloured so that it can be easily located if it falls off into food.

(e) not eat over unprotected food or surfaces likely to come into contact with food;

To prevent food from becoming contaminated, food handlers are not permitted to eat over unprotected food or surfaces likely to come into contact with food. If food handlers were to eat over exposed food or surfaces, their saliva or bits of the food being eaten could fall into the business's food or onto the surface. Food handlers are also likely to contaminate their fingers from contact with their mouth during eating, presenting another risk of saliva transferring to food or surfaces.

Food handlers are permitted to eat or drink in food-handling areas provided they do not eat or drink over the business's unprotected food or surfaces.

(f) not sneeze, blow or cough over unprotected food or surfaces likely to come into contact with food;

This means, for example, that food handlers must sneeze and cough away from food or surfaces likely to come into contact with food. They are not permitted to blow into bags that will come into contact with food.

(g) not spit, smoke or use tobacco or similar preparations in areas in which food is handled; and

Food handlers are not permitted to spit, smoke or chew tobacco in food-handling areas. Many jurisdictions prohibit smoking within certain distances of food preparation — check with local councils. Chewing gum is not recommended as it can increase the chance of food becoming contaminated with saliva.

(h) not urinate or defecate except in a toilet.

Clause 16 of Standard 3.2.3 requires food businesses to ensure that adequate toilets are available for the use of food handlers working for the business. This requirement obliges food handlers to use these facilities. Note that these requirements apply equally to permanent and temporary food businesses.

15(2) A food handler must wash his or her hands in accordance with subclause (4):

(a) whenever his or her hands are likely to be a source of contamination of food;

Washing and drying hands thoroughly is one of the most important things that food handlers must do to prevent food becoming contaminated. The reference to 'whenever his or her hands are likely to be a source of contamination of food' is intended to capture any circumstance in which a food handler may need to wash his or her hands to protect the safety of food.

While paragraphs (b) and (c) below and subclause 15(3) specify particular circumstances in which a food handler must wash his or her hands, other instances include:

- after handling garbage
- after cleaning duties such as mopping
- after handling animals or children.

Handling food and money

A food handler may handle money and food at the same time (e.g. in a takeaway shop) provided that the food is protected from contamination. The food could be protected, for example, by its packaging, or by the food handler using tongs, clean gloves, inside-out plastic bags, serving platters or other implements. Note that the food handler should not be directly handling ready-to-eat food and money, as required under paragraph 15(1)(b) above. If gloves or similar are used for handling ready-to-eat food such as sandwiches they should be changed each time the task is disrupted by handling money.

(b) immediately before working with ready-to-eat food after handling raw food; and

Extra care is needed to protect ready-to-eat food from becoming contaminated (see 15(1)(b) above). Food handlers who are directly handling raw food (e.g. raw meat, fish, poultry, eggs and unwashed fruits and vegetables) must wash their hands before directly handling ready-to-eat food, to prevent contamination from raw food being transferred to the ready-to-eat food. Raw food is more likely to contain foodborne pathogens as it has not yet been cooked or otherwise processed to destroy pathogens. If these pathogens are transferred to ready-to-eat food, they could make the food unsafe.

(c) immediately after using the toilet.

It is essential that food handlers wash their hands immediately after using the toilet. During toilet activities hands can become highly contaminated with pathogens that can cause foodborne illness if they are transferred to food. In certain settings, such as a home-based business, other activities such as changing of nappies are akin to using the toilet.

15(3) A food handler must, when engaging in a food handling operation that involves unprotected food or surfaces likely to come into contact with food, wash his or her hands in accordance with subclause (4):

(a) before commencing or re-commencing handling food;

Unprotected (unpackaged or uncovered) food and surfaces are vulnerable to becoming contaminated, so food handlers must wash their hands before they handle exposed food or surfaces likely to come into contact with food, including eating and drinking utensils and equipment used to prepare food.

If a food handler stops handling the exposed food or surfaces to perform another work duty or to go on a break, they must wash their hands again before recommencing the handling of the food or surface.

(b) immediately after smoking, coughing, sneezing, using a handkerchief or disposable tissue, eating, drinking or using tobacco or similar substances; and

All these actions can make hands highly contaminated with bodily excretions that can contain pathogens that can cause foodborne illness if they are transferred to food, so washing hands is essential to remove any contamination. Note that jurisdictions' legislation related to smoking will also apply.

(c) after touching his or her hair, scalp or a body opening.

As above, all these actions can make hands highly contaminated, so washing hands is essential to remove any contamination.

A body opening includes the mouth, nose and ears.

15(4) A food handler must, whenever washing his or her hands:

(a) use the hand washing facilities provided;

Food handlers must wash their hands in the hand washbasin/s provided and not in sinks that are used for other purposes. Other sinks must not be used for hand washing because:

- the sink may become contaminated from hand washing and then transfer pathogens to food; for example if a food preparation sink is used for hand washing
- the hands may become contaminated from material in the sink; for example if a sink used for liquid waste is used for hand washing.

Another reason for requiring dedicated hand washbasins is so they will always be available for washing hands, as other sinks may be in use. Food handlers need to have ready access to hand washing facilities at all times.

(b) thoroughly clean his or her hands using soap or other effective means, and warm running water; and

'Thoroughly clean'

'Thoroughly clean' means that the food handler vigorously washes the entire surface of his or her hands using soap or other effective means. Scientific studies have shown that to effectively remove pathogenic microorganisms, hands should be wet, well covered with soap and scrubbed for 15 to 30 seconds, including palms, between fingers, under nails, the back of hands, thumbs and wrists (Todd et al 2010a). Clean nail brushes may assist in scrubbing off dough and other hard-to-remove food residues. Hands should be thoroughly rinsed with clean water. Care must be taken to avoid re-contaminating washed hands, for example by using a clean paper towel or elbow to turn off taps that are manually operated.

Soap

Soap helps remove grease, dirt and pathogenic microorganisms from hands. Food handlers should ideally use liquid soap to wash their hands, as bar soap and soap dishes that are repeatedly used can become contaminated (see Todd et al 2010b). The use of antibacterial soap is not required; it is more important to use enough soap to lather both hands and wash them thoroughly as described above.

Hand sanitisers including hand gels or foams should generally **not** be used as a substitute for washing hands with soap. This is because sanitisers generally do not reduce levels of microorganisms on hands as effectively as soap and water, particularly if hands are visibly dirty (Todd et al 2010b). However, the use of hand sanitisers as a substitute may be appropriate in certain circumstances; for example at temporary premises — see subclause 15(5).

Warm running water

Warm running water is required for hand washing because:

- it helps to remove grease from hands
- it encourages food handlers to wash their hands — if the available water is too hot or too cold, food handlers might not wish to use the facility provided.

Although no water temperature has been prescribed, water should be warm enough to be comfortable. The washing time and friction generated during lathering are more important than the water temperature (Todd et al 2010a).

Certain food businesses may be able to obtain an exemption from the requirement for warm running water — see subclause 15(5).

(c) thoroughly dry his or her hands on a single use towel or in another way that is not likely to transfer pathogenic microorganisms to the hands.

Drying hands properly is just as important as washing them. Studies on hand hygiene have shown that the drier the hands, the less likely they are to transfer bacteria (Patrick, Findon & Miller 1997, also reviewed in Todd et al 2010a, Huang et al 2012). Food handlers are therefore required to thoroughly dry their hands after hand washing. It is not sufficient for food handlers to simply shake their hands or give them a quick wipe.

Single use towels

It is recommended that food handlers use single use towels or a combination of single use towels and an air dryer to thoroughly dry hands. Single use paper towels have been found to be generally better than electric air dryers from a hygiene perspective (Todd et al 2010a, Huang et al 2012). Paper towels can dry hands efficiently, remove bacteria effectively, and cause less contamination of the washing environment than other methods.

Single use towels include reusable towels; however, if reusable towels or tea towels are used for hand drying, they must only be used once and then be washed and dried before being reused. Clothing, aprons, or cloths being used for wiping benches or drying dishes should not be used to dry hands.

15(5) A food handler who handles food at temporary food premises does not have to clean his or her hands with warm running water, or comply with paragraph (4)(c), if the appropriate enforcement agency has provided the food business operating from the temporary food premises with approval in writing for this purpose.

Food handlers working at a temporary food premises do not have to wash their hands under warm running water or dry them using single use towels, if a written exemption from these requirements has been provided from the appropriate food regulatory agency. This subclause recognises that food handlers working at some temporary premises might not have access to these facilities (for examples see clause 17) and an exemption may be granted based on risks to food safety.

If, for example, food handlers are provided with alcohol-based hand sanitising gels or foams as an alternative, they should:

- clean visible soil from hands with single use wipes or equivalent before applying the hand rub
- apply a palmful of hand rub and thoroughly rub the palms, fingers, webbing and back of hands for 20 to 30 seconds until dry (WHO 2009).

Subdivision 2 — Requirements for food businesses

16 Health of persons who handle food — duties of food businesses

The intended outcome is that food businesses ensure that food is not contaminated by:

- persons known to be suffering or carrying a foodborne disease, or
- persons known or reasonably suspected to be suffering from certain conditions.

This clause outlines the business's obligations to deal with persons suffering from or carrying a foodborne disease or with certain health conditions.

Records of staff illness and conditions

It is good practice for the business to record reported staff illness and conditions and what action (if any) was taken. These records may be useful in the event of a foodborne disease outbreak (for example, by providing information to trace the source of food contamination). They may also help demonstrate the business's compliance with requirements. Records could include:

- the name of the person afflicted by the illness or condition
- the date when the illness or condition was reported
- details of the illness or condition, including how long the person has been suffering from the illness or condition and, in relation to illness, details of the person's symptoms
- the action taken in response to the reported illness or condition (e.g. a person reporting to have diarrhoea may be sent home)
- the name of the person who determined what action should be taken — usually the supervisor or manager.

16(1) A food business must ensure the following persons do not engage in the handling of food for the food business where there is a reasonable likelihood of food contamination:

Food handlers are required in paragraph 14(1)(b) not to handle food where there is a reasonable likelihood of food contamination if they are or may be suffering from a foodborne disease, or are carrying a foodborne disease. This clause obliges food businesses to ensure that these food handlers do not engage in these activities. It also obliges the business to ensure that any other affected persons handling food for the business do not engage in these activities. This includes staff's friends and family, managers and supervisors and the proprietor of the business. In a home-based business, it includes children and visitors in the home.

The duties from which an affected person should be excluded will depend on a number of factors and should be assessed on a case-by-case basis (see 14(1)(b) above). If an affected person is excluded from certain duties, the business must make sure the person does not perform these duties.

(a) a person known to be suffering from a foodborne disease, or who is a carrier of a foodborne disease; and

'A person' includes:

- a food handler who reports to his or her supervisor that he or she is suffering a foodborne disease or knows he or she is carrying a foodborne disease, as required by paragraph 14(1)(a)
- other persons reported to the business to be suffering from or carrying a foodborne disease.

What is considered a foodborne disease is discussed in clause 14 above.

(b) a person known or reasonably suspected to have a symptom that may indicate he or she is suffering from a foodborne disease.

'A person' includes:

- a food handler who reports to his or her supervisor that he or she is suffering from a symptom that may indicate he or she is suffering from a foodborne disease, as required by paragraph 14(1)(a)
- any other person reported to the business, or reasonably suspected by the business, to be suffering from a symptom that may indicate the person is suffering from a foodborne disease. In a home-based business, it may include children and visitors in the home.

'Symptom' has been defined in clause 1. A business may reasonably suspect a person is suffering from a foodborne disease if he or she presents with one of these symptoms. If a person is known or suspected to be suffering from one of these symptoms, the business should discuss this with them before a decision is made about whether they need to be excluded from any duties. For instance, the person may be suffering from a symptom but not have reported it because they know that symptom is not due to a foodborne illness.

16(2) A food business must ensure that a person who is known or reasonably suspected to be suffering from a condition and who continues to engage in the handling of food for the food business takes all practicable measures to prevent food contamination.

'A person' includes:

- a food handler who reports to his or her supervisor that he or she is suffering from a condition — this is only required where there is a possibility of food contamination occurring as a result of the food handler suffering the condition (paragraph 14(2)(a))
- other persons reported to the business, or reasonably suspected by the business, to be suffering from a condition.

'Condition' is described in clause 1. A business may reasonably suspect a person is suffering from a condition if he or she presents with the symptoms described and require them to take all practicable measures to prevent food contamination.

Practicable measures the affected person may be able to take to prevent food contamination are listed in paragraph 14(2)(b) above.

16(3) A food business may permit a person excluded from handling food in accordance with paragraph (1)(a) to resume handling food only after receiving advice from a medical practitioner that the person no longer is suffering from, or is a carrier of, a foodborne disease.

This clause applies to a person who is known to be suffering from or carrying a foodborne illness and who has been excluded from certain duties because there was a risk of food being contaminated (as discussed in 14(1)(b) above).

An excluded person may only resume duties when advice is received from a medical practitioner that the person is no longer suffering from or carrying the foodborne disease. The medical practitioner will make this assessment, including tests as required. However, advice may be sought from national, state or territory health authorities' guidelines on when an excluded person should be permitted to resume work duties.

National guidelines for the management of gastroenteritis outbreaks generally recommend that food handlers should not return to their usual duties until 48 hours after their symptoms have ceased (Australian Government Department of Health and Ageing and Communicable Diseases Network Australia 2010, OzFoodNet Working Group 2012a). These guidelines also recommend that food handlers are counselled on personal hygiene before returning to work. This advice has been designed to complement other authoritative sources including jurisdictional guidelines.

Example

Sick food handler returning to work too early

A food handler working for a catering business was suffering from a foodborne illness (viral gastroenteritis) and was sent home. After a day off, he returned to work to help prepare food for an event. However, this was before the recommended exclusion period had expired (i.e. 48 hours after symptoms have ceased) and so it was likely that he was still contagious.

He prepared ready-to-eat food (salads and sandwiches) for the event and unknowingly contaminated the food. The following day, the people who had attended the event and eaten the food became sick from the virus.

17 Hygiene of food handlers — duties of food businesses

The intended outcome is that food businesses maintain adequate hand washing facilities on the food premises and ensure the facilities are only used for personal washing.

17(1) Subject to subclause (2), a food business must, for each food premises:

These requirements must be complied with for every hand washing facility located on the premises, including those in toilets.

(a) maintain easily accessible hand washing facilities;

Subclause 14(1) of Standard 3.2.3 requires hand washing facilities to be located where they can be easily accessed by food handlers. This paragraph requires businesses to ensure that these facilities remain accessible after they have been installed. This means, for example, that businesses are not permitted to obstruct hand washing facilities by placing equipment in them, in front of them or on top of them.

(b) maintain, at or near each hand washing facility, a supply of:

(i) warm running water; and

Paragraph 14(2)(b) of Standard 3.2.3 requires hand washing facilities to be connected to, or otherwise provided with, a supply of warm running potable water. This paragraph requires businesses to maintain this water supply. This means, for example, that businesses must not disconnect the water supply to a hand washing facility and must fix the facility if it breaks.

Temporary premises must comply unless an exemption has been granted (see subclause 17(3)). Most temporary premises will be able to maintain a supply of running water for hand washing, for example by using urns or plastic water containers with a tap valve. These containers should be filled with warm water, where possible.

Warm water has been required for the reasons outlined under paragraph 15(4)(b). A temperature has not been specified for warm water but it should be warm enough to feel comfortable.

(ii) soap; or

(iii) other items that may be used to thoroughly clean hands;

The food business must ensure that soap or other items that may be used to thoroughly clean hands are always available at or near each hand washing facility. It is preferable that the business provides liquid soap in a dispenser. An alternative to soap is permitted, provided it is just as effective at removing grease, dirt and pathogens from hands. Hand sanitisers such as alcohol-based gels and wipes should not be used as a soap substitute.

(c) ensure hand washing facilities are only used for the washing of hands, arms and face; and

The food business must ensure hand washing facilities are not used for other purposes. For example, they must not be used for food preparation, to clean equipment or as a 'slop' sink to discard waste. This is to ensure that the facility is always available for use and does not become contaminated.

(d) provide, at or near each hand washing facility:

(i) single use towels or other means of effectively drying hands that are not likely to transfer pathogenic microorganisms to the hands; and

The food business must maintain a supply of single use towels, or other means of effectively drying hands, at or near each hand washing facility. Air dryers alone are not generally considered as effective as single use towels for drying hands, as they can take much longer to achieve the same drying result and are less likely to be used effectively

(Todd et al 2010a). The narrow opening of air blades may impede thorough drying of wet wrists and arms. However, air dryers and single use towels can be very effective if used together. Air dryers are not generally recommended in food preparation areas as the blowing air may pose a risk of cross contaminating food or surfaces that may contact food. If non-disposable towels are provided, they must be washed and dried between every use.

(ii) a container for used towels, if needed.

A container for the used towels must be provided at or near each hand washing facility. This is to prevent the used towels contaminating the area around the facility and to prevent them being reused.

17(2) Paragraph (1)(c) does not apply in relation to hand washing facilities at food premises that are used principally as a private dwelling if the proprietor of the food business has the approval in writing of the appropriate regulatory agency.

This exemption is intended to allow home-based businesses to use a kitchen sink for hand washing as well as other purposes, such as food preparation and cleaning utensils, if food safety is not compromised. The exemption recognises that domestic-style kitchens do not usually have designated hand washing facilities.

It is important that hand washing facilities are always available while food is being prepared and that they do not become contaminated. In a domestic kitchen this can be achieved by:

- having only one or two people at most using the kitchen so that a sink should always be available
- organising food handling activities so that the use of the sink can be separated by time (i.e. the sink is only used for one purpose at a time) and it is available when required
- cleaning and sanitising sinks between uses if there is risk of food contamination occurring.

The appropriate regulatory agency may grant an exemption based on the operations of the food business and risks to food safety.

17(3) With the approval in writing of the appropriate enforcement agency, a food business that operates from temporary food premises does not have to comply with any of the requirements of paragraphs (1)(b)(i) or (1)(d) that are specified in the written approval.

This exemption is intended to allow businesses that operate temporary food premises to:

- only provide cold running water for hand washing if they do not have access to warm water
- provide alternative hand washing facilities if they do not have access to any running water or to sufficient running water for hand washing (see below).

The appropriate regulatory agency may grant an exemption based on risks to food safety. It must be in writing, indicate what requirements the business is exempted from and outline the alternative hand washing methods to be used.

Alternatives to running water

Most temporary food premises should have access to running water for hand washing, and may be able to provide warm running water (see paragraph 17(1)(b) above). Where running water is provided, single use towels must be provided for food handlers to dry their hands.

However, some temporary food businesses may not be able to provide running water for hand washing, for instance on camping trips or in remote areas. In these circumstances, if an exemption is granted, the business must provide an appropriate alternative system for hand washing. Examples include alcohol-based hand gels or foams, or single use anti-bacterial wipes (also see subclause 15(5)).

If water is not being used for hand washing, the business does not need to provide single use towels for hand drying.

18 General duties of food businesses

The intended outcomes are that food businesses:

- inform food handlers of their health and hygiene obligations
- only disclose information provided by food handlers about their health or hygiene to certain persons and do not use this information for any purposes other than addressing the risk of food contamination
- take all reasonable measures to ensure persons on food premises do not contaminate food.

Standard 3.2.2A may also apply to food business that handle unpackaged, potentially hazardous food that is ready to eat. This standard contains extra requirements for food handlers, including mandatory training and food safety supervisor certification. See the chapter on Standard 3.2.2A.

18(1) A food business must inform all food handlers working for the food business of their health and hygiene obligations under Subdivision 1 of this Division.

Specific obligations are placed on food handlers in Subdivision 1 of this standard, to ensure that their actions do not result in food becoming unsafe or unsuitable. Food handlers must comply with these requirements.

The food business must inform food handlers of all their health and hygiene obligations, preferably in writing. If the business employs food handlers from non-English-speaking backgrounds, the requirements should ideally be provided in the relevant languages.

18(2) A food business must ensure that any information provided by a food handler in accordance with Subdivision 1 of this Division is not disclosed to any person without the consent of the food handler, except the proprietor or an authorised officer, and that the information is not used for any purpose other than addressing the risk of food contamination.

A food handler is required to report to their supervisor certain information related to foodborne disease, health conditions, and food contamination as per 14(1)(a), 14(2)(a) or 14(3). The supervisor must not disclose this information to any person without the food handler's consent, with the exception of the business proprietor or an authorised officer. An authorised officer is a person with powers under the relevant state or territory Food Act, such as an environmental health officer.

The supervisor is not permitted to use this information for any purpose other than to protect food from contamination. This requirement is to ensure that the information is not used incorrectly or inappropriately.

18(3) A food business must take all practicable measures to ensure all people on the food premises of the food business:

'Practicable measures' recognises that businesses cannot completely control people on the premises, but they can take steps to minimise risks to food safety and suitability.

'All people' includes food handlers, tradespeople, visitors and members of the public.

(a) do not contaminate food;

The measures that the business needs to take to ensure people do not contaminate food will depend on its food operations. For example, businesses that handle unpackaged food will generally need to take more and/or stricter measures than businesses that only handle packaged food because the risk of contamination is greater for exposed foods.

Practicable measures the business could take in areas where there is exposed food or surfaces likely to come into contact with food could include, for example:

- where possible, restricting all persons except food handlers from these areas (for home-based businesses this may include children and other family members)
- where persons have a legitimate reason for being in these areas, supervising these people, as far as practicable, to ensure they do not:
  - » unnecessarily handle food or surfaces likely to come into contact with food
  - » sneeze, blow or cough over food or food contact surfaces
  - » eat or chew gum over exposed food or food contact surfaces
- in food manufacturing areas, taking additional action, such as requiring persons to:
  - » wear special protective clothing and hair coverings
  - » wash their hands before entering these areas
  - » wash shoe soles before entering these areas.

(b) do not have unnecessary contact with ready-to-eat food; and

Exposed ready-to-eat food needs particular care, as it will not be further processed to make it safe and suitable before it is consumed.

If the business is displaying unpackaged ready-to-eat food for self-service, it must comply with subclause 8(2).

Other exposed ready-to-eat food on the premises could be protected by taking steps as listed for (a) above.

Note food handlers are required to prevent unnecessary contact as per paragraph 15(1)(b).

(c) do not spit, smoke, or use tobacco or similar preparations in areas where there is unprotected food or surfaces likely to come into contact with food.

The business must ensure people do not spit or smoke in food preparation areas and other areas where there is exposed food or surfaces likely to contact food (e.g. at a bar or self service salad bars and smorgasbords). Customer dining and drinking areas are excluded from this requirement, as food will have been already served to customers and no longer be for sale. However state and territory legislation may prohibit or restrict smoking in these areas.

Practicable measures the business could take in areas where there is exposed food and food contact surfaces include, for example:

- placing signs to alert people that smoking is not permitted
- not providing ash trays
- alerting persons found to be smoking or spitting that these activities are not permitted and asking them to stop
- asking the person to leave the premises if they continue to smoke or spit
- calling security staff or police for assistance if the person continues to smoke or spit and refuses to leave.

Division 5 — Cleaning, sanitising and maintenance

19 Cleanliness

The intended outcome is that food premises, fixtures, fittings and equipment, as well as those parts of vehicles that are used to transport food, are maintained to an acceptable standard of cleanliness.

19(1) A food business must maintain food premises to a standard of cleanliness where there is no accumulation of:

(a) garbage, except in garbage containers;

(b) recycled matter, except in containers;

(c) food waste;

(d) dirt;

(e) grease; or

(f) other visible matter.

To minimise the likelihood of food becoming contaminated and to discourage pests, food premises must be kept clean. To achieve this outcome, the business needs an effective cleaning system in place that ensures dirt, grease and waste material do not accumulate.

Garbage and recycled matter may be accumulated in containers before being collected or taken to a disposal centre, but the volumes must not exceed the containers' capacity. These containers should be covered if they pose a risk of attracting or harbouring pests (see clause 24 in this standard, and clause 6 in Standard 3.2.3).

Food waste is specifically listed to ensure it does not accumulate in places other than garbage areas in the premises. For example, food waste can build up on and behind equipment if these areas are not cleaned regularly.

'Other visible matter' includes other matter that might build up and affect the premises' standard of cleanliness and pose a risk of food contamination. Examples include mould and spider webs.

19(2) A food business must maintain all fixtures, fittings and equipment, having regard to its use, and those parts of vehicles that are used to transport food, and other items provided by the business to purchasers to transport food, to a standard of cleanliness where there is no accumulation of:

(a) food waste;

(b) dirt;

(c) grease; or

(d) other visible matter.

Fixtures, fittings, equipment and vehicles used to transport food should be kept clean to minimise the likelihood of food becoming contaminated and to discourage pests. Vehicles used to transport food include shopping trolleys (Standard 3.1.1 clause 1). Other items provided to customers by the business to transport food include shopping baskets.

Fixtures and fittings include items such as benches, shelves, sinks, hand washbasins and cupboards, whether permanently fixed or moveable. They include door handles, light fittings and switches, pest control devices, ventilation ducts, pipes and electric wiring.

Equipment (defined in Standard 3.1.1 clause 1) includes:

- all equipment used in handling food — e.g. refrigerators and coolrooms (including associated motors), bain marie units, carry baskets, and cooking and other processing equipment
- equipment used for cleaning food premises or equipment such as dishwashers, brooms, mops, buckets and hoses
- computers and similar electronic devices, keyboards, phones and other equipment that may be used by food handlers.

The cleaning processes a business uses for fixtures, fittings, equipment and parts of vehicles must ensure the things listed in (a) to (d) do not accumulate. Note that for effective cleaning it may be necessary to turn power off, or move or partly dismantle some items (e.g. cool room fans, frying machines, ventilators).

The phrase 'having regard to its use' in this subclause recognises that some accumulation of food waste, dirt, grease or other matter may be acceptable in certain circumstances. For example:

- Grease filters in range hoods are designed to trap and accumulate grease and so some accumulation of grease is expected. The business would be expected to change or wash these filters regularly to prevent too much grease building up in the filter and rendering it ineffective.
- Cleaning equipment may accumulate dirt, etc. as part of the cleaning process. The business is not expected to maintain the equipment free of food waste, dirt, grease or other visible matter but is required to maintain it to a standard of cleanliness appropriate for its use.

20 Cleaning and sanitising of specific equipment

The intended outcome is that specific equipment is cleaned and sanitised to minimise the transmission of infectious disease and to protect food from contamination.

Cleaning and sanitising are different processes, and both are needed to reduce the risks of foodborne illness. Cleaning involves the removal of dirt, grease and food debris. Sanitising is a process that destroys pathogenic microorganisms and sanitising should be done after cleaning. Even if equipment looks clean it could still be contaminated if it has not been sanitised.

Food businesses must ensure that staff assigned cleaning and sanitising tasks have the necessary skills and knowledge to perform these tasks correctly (as per clause 3). For example, if equipment is to be chemically sanitised, staff must know how to prepare and use an appropriate food-grade chemical sanitiser to ensure that the equipment is properly sanitised.

Further information on cleaning and sanitising is provided in Appendix 6.

Standard 3.2.2A – Food Safety Management Tools applies additional requirements for substantiating cleaning and sanitising to minimise transmission and protect food from contamination. If you are a food service or catering business that handles unpackaged, potentially hazardous food that is ready to eat, see the chapter on Standard 3.2.2A.

20(1) A food business must ensure the following equipment is in a clean and sanitary condition in the circumstances set out below:

(a) eating and drinking utensils — immediately before each use; and

'Clean and sanitary' is explained in subclause 20(2) below. The importance of clean and sanitary eating and drinking utensils in preventing the spread of illness has been scientifically well established.

'Immediately before each use' does not necessarily mean that eating and drinking utensils must be cleaned and sanitised just before use — it means they must be cleaned, sanitised and protected from contamination between being used by one person and the next. If stored utensils are found to be not adequately protected (e.g. if signs of pests are seen in a utensil storage cupboard), it will be necessary to clean and sanitise them just before use.

It is the food business's responsibility to ensure utensils the business provides to customers are clean and sanitary. A business is not required to clean or sanitise customer-supplied utensils and may use their discretion to refuse them – the business is not obliged to allow customers to use their own utensils. The business should consider food safety risks posed by customer-supplied items, particularly cross contamination of the business's food and equipment.

Customers may retain eating and drinking utensils for their own reuse (for example, reusing their plate to serve themselves at a buffet). To ensure food safety is maintained, the serving utensils at a buffet provided by the food business are the only ones to be used for serving. If a used eating or drinking utensil is returned to the business, it cannot be used again until it has been cleaned and sanitised, whether or not the same person will be reusing it. For example, if a drinking glass is returned by a customer to a bar, it cannot be reused by any person until it has been cleaned and sanitised.

(b) the food contact surfaces of equipment — whenever food that will come into contact with the surface is likely to be contaminated.

This requirement applies to any of the business's equipment used for handling food that comes into direct contact with food. Examples are chopping boards and other preparation surfaces, mixing bowls, storage containers, display units, equipment used to wash food, cooking and other processing equipment, and thermometers.

To prevent food from becoming contaminated when it comes into contact with surfaces, food contact surfaces need to be clean and sanitary. However, the circumstances when cleaning and sanitising will be needed will vary, depending on the type of food and the use of equipment. Some examples are provided below.

Processing multiple batches of food

The food contact surface of equipment used to prepare or process foods should be cleaned (and sanitised if necessary) between batches or lots, to avoid the risk of contamination being transferred from one batch to the next.

Processing raw food and ready-to-eat food

Surfaces must be cleaned and sanitised between being used for raw food and ready-to-eat food. This is so that pathogenic microorganisms present in the raw food do not contaminate the ready-to-eat food, which will not be cooked or further processed before eating. For example, if a person slices raw meat or poultry for cooking and then slices salad vegetables, the board and knife must be cleaned and sanitised between these two uses, or separate boards and knives used for each task. However, the same surface does not need to be cleaned and sanitised between the uses described above if the sliced raw meat and vegetables will both be cooked, for instance in a curry.

Processing potentially hazardous food

A food contact surface should be cleaned and sanitised if it has been used for long periods to prepare or process potentially hazardous foods. Food residues remaining on these surfaces could provide an ideal environment for pathogenic microorganisms to grow and could contaminate other foods that contact this surface.

Examples of common equipment used with potentially hazardous foods include meat slicers, blenders, juicers, hand-held food mixers (stick blenders, liquidisers, etc.), milk frothers and can openers. Documented cases of food poisoning have been traced to contaminated surfaces in these types of equipment.

Equipment should be dismantled if it is otherwise difficult to access the food contact surfaces to clean and sanitise them thoroughly. For example, if a meat slicer blade cannot be easily cleaned and sanitised in its place inside the equipment, the blade should be removed.

It is recommended that equipment being used with potentially hazardous food (particularly at temperatures between 5°C and 60°C) is cleaned and sanitised at least every 4 hours (in the US Food Code).

Customer BYO containers

A business is not required to clean or sanitise customer-supplied containers and may use their discretion to refuse them – the business is not obliged to allow customers to use their own containers. The business should consider food safety risks posed by customer-supplied items, particularly cross contamination of the business's food and equipment.

Example

Cleaning and sanitising equipment used with potentially hazardous food

Note: Standard 3.2.2A – Food Safety Management Tools may also apply, see the chapter on Standard 3.2.2A for more information.

A staff member in a deli is responsible for cleaning and sanitising a meat slicer. The meat slicer's blade is removed, scraped, thoroughly cleaned in hot soapy water and rinsed. The staff member then sanitises the blade with sanitiser X, which was confirmed as suitable for use with food equipment by the purchaser. The manufacturer's label is checked (or the company contacted) for instructions on:

1. the correct dilution to prepare for use with food utensils and equipment
2. whether to dip or spray the equipment in sanitiser
3. how long to leave the sanitiser in contact with the equipment
4. whether the sanitiser needs to be rinsed off (with potable water)
5. the shelf life of the diluted sanitiser.

The bottle containing unused diluted sanitiser is labelled with the product name, the dilution, and the date. The manufacturer states that sanitiser X should be made fresh each day from the concentrated stock. So, the diluted sanitiser is used several times over the day and any leftover then discarded.

Example

Smoothies made with contaminated stick blenders

An outbreak of foodborne illness occurred in an aged care facility. Investigations found that all the people who fell ill had eaten breakfast smoothies which had been prepared using a stick mixer (hand-held blender). When the mixer was tested for pathogenic microorganisms it was found to be contaminated. Further investigations found that the mixer stick had not been properly cleaned and sanitised between uses, so pathogens had multiplied in food debris and then been transferred to the next batch of smoothie.

The food business was advised to change its cleaning and sanitising procedure to make sure the stick mixer is thoroughly treated; for example by dismantling the components, brushing them with warm soapy water and then spraying with an appropriate sanitiser, ensuring all areas of the shaft where food debris could lodge (including high up the shaft) are treated. The business was also advised to regularly maintain the mixer, including checking the mixer's seals and replacing any that show signs of deterioration.

Chopping boards, wipe cloths and thermometers

- Chopping boards should be cleaned and sanitised between uses as described above. They should not be simply flipped over to provide a fresh food preparation surface, as food debris and microorganisms from the used side will then be transferred to the bench or mat underneath and could contaminate another surface.
- Cloths used to wipe down food contact surfaces should be clean and sanitary to avoid cross contamination between surfaces and utensils that are wiped. Cloths should be frequently replaced with fresh ones, or washed and then soaked in a sanitiser such as bleach between uses.
- Probe thermometers used with food should always be cleaned and sanitised (e.g. using alcohol wipes) before and after measuring the temperature of food.

20(2) In subclause (1), a 'clean and sanitary condition' means, in relation to a surface or utensil, the condition of a surface or utensil where it:

(a) is clean; and

(b) has had applied to it heat or chemicals, heat and chemicals, or other processes, so that the number of microorganisms on the surface or utensil has been reduced to a level that:

(i) does not compromise the safety of the food with which it may come into contact; and

(ii) does not permit the transmission of infectious disease.

When an eating or drinking utensil or a food contact surface is required to be in a 'clean and sanitary condition', the process used to clean and sanitise the utensil or surface must achieve the two outcomes specified in (a) and (b).

'Clean' has been defined (see Standard 3.1.1) and in effect the cleaning process must ensure that the utensil or surface looks clean, feels clean and smells clean.

Specific procedures to produce a 'clean and sanitary condition' have not been prescribed. However, as outlined above, cleaning and sanitising serve different purposes and both are required. Food businesses may use any procedure or a combination of procedures, provided that the two outcomes listed above are achieved.

Further detailed information on cleaning and sanitising, including procedures, is provided in Appendix 6. See also regulatory agency websites in Resources and References.

21 Maintenance

The intended outcome is that food premises, fixtures, fittings and equipment, and those parts of vehicles that are used to transport food and equipment are well maintained so that food safety and suitability are not compromised.

This clause includes a general requirement relating to maintaining the food premises, etc., and a more specific requirement for eating and drinking utensils.

21(1) A food business must maintain food premises and all fixtures, fittings and equipment, having regard to their use, and those parts of vehicles that are used to transport food, and other items provided by the business to purchasers to transport food, in a good state of repair and working order having regard to their use.

Examples of equipment (defined in Standard 3.1.1 clause 1), fixtures and fittings are provided in 19(2) above. Vehicles used to transport food include shopping trolleys (Standard 3.1.1 clause 1). Other items provided to customers by the business to transport food include shopping baskets.

Under this clause, only the part or parts of the vehicle used to transport food need to be maintained. For example, if the vehicle is used to transport chilled food the refrigeration unit must be maintained in good working order. However, if the vehicle engine needs repairing, it does not need to be fixed under this clause.

Food premises, fixtures, fittings and equipment and those parts of vehicles and other items that are used to transport food need to be properly maintained to:

- prevent contamination of food from flaking plaster, paint, timber, broken glass, leaking pipes, etc.
- enable effective cleaning and, if necessary, sanitising
- ensure pests cannot access the building or vehicle from holes in ceilings, walls, etc.
- ensure that equipment works as intended.

'A good state of repair' means that things are not broken, split, chipped, worn out, etc. 'Working order' means that the thing must work. These two matters relate to the use of the premises, fixture, fitting, equipment, vehicle or other items used for transporting food. If equipment is not being used or is being used (appropriately) for another purpose, it is not required to be in working order. For example a bain marie unit that no longer operates but is being used to display non-potentially hazardous food does not need to kept in working order.

21(2) A food business must not use any chipped, broken or cracked eating or drinking utensils for handling food.

This clause specifically prohibits the use of damaged eating or drinking utensils for any purpose relating to the handling of food. Chipped, broken or cracked eating or drinking utensils are a food safety risk because they:

- cannot be effectively cleaned and sanitised and therefore may allow the transmission of infectious diseases; and
- might contaminate food directly if broken or chipped pieces fall into the food.

Division 6 — Miscellaneous

22 Temperature measuring devices

The intended outcome is that food businesses handling potentially hazardous food have a thermometer on-site to accurately monitor the food's temperature.

22 A food business must, at food premises where potentially hazardous food is handled, have a temperature measuring device that:

'Potentially hazardous food' is explained in Standard 3.2.2 and Appendix 1. Food 'handling' is defined in Standard 3.1.1 Interpretation.

Thermometers should be used to ensure that potentially hazardous food is kept under temperature control. This will minimise the growth of dangerous foodborne microorganisms and toxin production. A probe thermometer is recommended for measuring food's internal temperature during cooking, cooling and reheating.

All food businesses that handle potentially hazardous food must have an accurate thermometer on site. If a business has multiple premises, there must be a thermometer at each of the premises where potentially hazardous food is handled. More than one thermometer may be useful depending on the nature and scale of operations. Food businesses that do not handle any potentially hazardous food (e.g. a water carrier or a business that packages dry food) are not required to have a thermometer.

(a) is readily accessible; and

The thermometer must be kept in a place where it can be found and accessed whenever it is needed. It cannot, for example, be located in a locked cupboard or drawer, or away from the food premises at a person's home.

(b) can accurately measure the temperature of potentially hazardous food to +/–1°C.

The thermometer must be capable of accurately measuring the temperature of food to within at least 1°C. For example, this means if the temperature measured is 5°C, the actual temperature of the food is somewhere between 4°C and 6°C. If a business does not know the accuracy limit of the thermometer, they should check the product's specification sheet or contact the supplier.

Types of thermometers

There are a variety of thermometers available for measuring food temperatures; common ones are listed in the table below. Probe thermometers with a digital readout are strongly recommended for measuring food temperatures.

Common types of thermometers

Thermometer type	Comments
Probe thermometers	• **recommended** for measuring food temperatures • inexpensive, simple to use and ideal for measuring the internal temperature of food • internal food temperature measured by inserting the probe into the food, usually at or near the centre of the food • can also measure surface food temperature, for example of packaged food
Infra-red (or 'laser') thermometers	• useful for measuring the surface temperature of food and utensils • **not** able to measure the temperature within food
Fixed thermometers on equipment (e.g. on bain maries and refrigerator units)	• useful for measuring the operating temperature of the equipment but not the actual food • **not** considered sufficient for measuring food temperatures — should be used in conjunction with another thermometer that directly measures food temperatures, such as a probe
Mercury and glass thermometers	• **not** generally recommended for use with food due to risks associated with breakages inside food — if used they should be encased in a shatterproof protector
Digital versus analogue thermometers	• either type may be used to measure food temperature, but digital is generally preferred for ease of reading

Thermometers with a temperature range of –50°C to 150°C are usually sufficient for measuring the temperature of food. However, if a business needs to measure the operating temperature of processing equipment, a thermometer with a wider temperature range may be required. Regardless, if the thermometer is used to measure the temperature of potentially hazardous food, it must still have an accuracy of +/– 1°C.

Measuring the temperature of food

When measuring the temperature of food, the food business should be aware of the following:

- Temperature readings are not instant — when taking a measurement, the operator should wait until the temperature has stabilised before noting the temperature.
- The initial temperature of the thermometer probe can potentially affect the temperature of the food it is measuring — when taking measurements of hot and cold food with the same temperature probe, the probe should be allowed to return to near ambient temperature before placing it into the food at the other temperature extreme, to minimise incorrect readings.
- The temperature of a food being measured may not be even — for example if a food is being cooled in a refrigerator, the surface temperature may be cooler than the core of the food — where possible, measurements should be taken from the centre of the food.
- The temperatures of food within a refrigerator, or cold or hot display unit are likely to vary and just because one food is within an acceptable limit does not mean that other food within the same unit will also be within this limit. It is advisable to check different areas of the unit to confirm all food is under temperature control.
- Where a temperature is specified within the standard for potentially hazardous food, all parts of the food must be at this temperature. If any part of the food is not at the specified temperature, the food does not meet the temperature requirement.
- Fixed thermometers on equipment (e.g. on a bain marie unit) only show the operating temperature of the unit, not the actual food's temperature. While fixed thermometers give an indication that the unit is at the correct temperature, the food's temperature should still be measured directly with a probe thermometer.
- The temperature of frozen food can be measured by placing the length of a thermometer probe between two frozen packages of the food, or using an infra-red thermometer to measure the surface temperature of the food/ package. Note that this standard does not specify a temperature for frozen food.
- Packaged chilled food may also be measured by using an infra-red thermometer or placing the length of a thermometer probe between two packages of the food to avoid destroying the packaging.

Example

Monitoring food temperatures in hot-hold equipment

A variety of potentially hazardous foods are rapidly reheated and then placed in a bain marie unit to hold hot. The proprietor uses a probe thermometer to measure the temperature of all foods in the unit.

The proprietor finds that the coolest part of the unit is at the back left-hand corner. Temperature measurements of food in the unit are then routinely taken at the back left-hand corner to ensure the temperature of the coolest food is known.

Cleaning and sanitising thermometers

Any part of a thermometer (usually the probe) inserted into food must be cleaned and sanitised before use, if this is necessary to prevent food contamination (see paragraph 20(1)(b)). For example, the probe will need to be cleaned and sanitised between being used for raw food and ready-to-eat food or if it has touched an unsanitary surface.

Cleaning and sanitising a probe thermometer should be done as follows:

- wipe away any food waste or other visible contamination
- wash the probe with warm water and detergent
- sanitise using an appropriate sanitiser (e.g. an alcohol wipe) or hot water (e.g. 77°C or hotter for at least 30 seconds)
- rinse with water if necessary (refer to sanitiser instructions)
- allow the probe to completely air dry or thoroughly dry with a single use towel.

Thermometer maintenance

The thermometer must be in a good state of repair and working order, as per clause 21. The food business must ensure that flat batteries are replaced, that the thermometer is fixed or replaced if it breaks and that it is maintained to an accuracy of at least +/– 1°C.

A thermometer should be regularly calibrated, as it can lose accuracy over time or if it is dropped or bumped. The following things could be considered:

- The thermometer supplier's advice should be followed, but as an indication, it is recommended that thermometers are calibrated at least once every 12 months.
- The calibration of thermometers is best performed by the thermometer's supplier or by an accredited laboratory.
- Some thermometers have a calibration test device, which gives an indication of whether the thermometer is working correctly. However, this test may only check the readout instrument and not the temperature probe.
- Testing a thermometer's readout in an ice slurry and in boiling water can indicate whether the thermometer is working properly. For further details, see regulatory agency websites in Resources and References. Note that water's boiling temperature may not be exactly 100°C, depending on the altitude above sea level.
- Only food businesses that have the necessary knowledge, skills and equipment to calibrate thermometers should do their own calibrations. If calibration shows the temperature readout needs adjusting, the instrument itself should not be altered; rather, the business should record how far the instrument is out and the date, for example on a sticker placed on the instrument. This record will allow the business to monitor how inaccurate the instrument becomes over time. If a correction of more than 1°C is required, the thermometer should be replaced or professionally adjusted.

Recording food temperatures

Temperature requirements in this standard are in:

- food receipt (subclause 5(3))
- food storage (subclause 6(2))
- food processing step (subparagraph 7(1)(b)(ii))

- food processing generally (subclause 7(2))
- cooling (subclause 7(3))
- reheating (subclause 7(4))
- food display (subclause 8(5))
- food transport (paragraph 10(b)).

Recording the temperature of potentially hazardous food may help the business to ensure safe limits are not exceeded and demonstrate that the food is kept under temperature control. Note, Standard 3.2.2A requires certain food service businesses (including caterers) to substantiate temperature controls when handling unpackaged potentially hazardous food. See the chapter on Standard 3.2.2A for further details.

For templates for temperature logs, see Appendix 8 and food regulator websites in Resources and References (e.g. Victoria's Food safety program templates on their Food businesses information website).

Example

Recording times and temperatures

Due to practicalities, a food business is not able to meet the times and temperatures specified for cooling potentially hazardous food in subclause 7(3). However, a food industry guideline provides advice on a safe alternative cooling system for the type of food the business is cooling. The food business uses a temperature logger to measure and record the cooling times and temperatures of the food to demonstrate that it is correctly following the alternative cooling system.

Further guidance on the use and calibration of thermometers is available from regulatory agency websites in Resources and References.

23 Single use items

The intended outcome is that food businesses ensure that single use items:

- do not contaminate food
- do not allow the transmission of infectious diseases
- are not reused.

Single use items (defined in Standard 3.1.1 Interpretation) include such things as disposable gloves, drinking straws, disposable cutlery, plastic takeaway containers and pizza boxes.

23 A food business must:

(a) in relation to all single use items, take all practicable measures to ensure they do not come into contact with food or the mouth of a person if they are:

(i) contaminated; or

If the food business knows that a single use item is contaminated, the item cannot be used in contact with food or a person's mouth.

For example, a single use item is contaminated if it is not visibly clean (e.g. has food debris, hair, insects, droppings, etc. on it).

(ii) reasonably suspected of being contaminated; and

If the food business reasonably suspects that a single use item is contaminated, the item cannot be used in contact with food or a person's mouth. For example, it may be reasonable to suspect a single use item has become contaminated if:

- the contact surface of the item is handled by a customer and placed back for use by another customer
- items are being stored together and some of the items show evidence of contamination by pests — it is reasonable to suspect that all the items have become contaminated
- the item is dropped on the floor
- the outer protective packaging has been damaged.

(b) in relation to single use items that are intended to come into contact with food or the mouth of a person:

(i) take all practicable measures to protect them from the likelihood of contamination until use; and

If a single use item becomes contaminated or is reasonably suspected of being contaminated, it cannot be cleaned and sanitised to enable it to be reused (see (ii) below). Therefore it is important that these items are protected from contamination before they are used.

Practicable measures that could be taken to protect the item include:

- enclosing the item in protective packaging or a container
- placing the item in a dispensing container for customers to access it, provided that the container enables the customer only to handle the item he or she is to use
- storing the item away from chemicals
- storing the item in an area that is sealed from animals, insects and small children, for example a dedicated food storage area
- when using disposable gloves, washing hands thoroughly before using gloves and between any glove changes.

(ii) not reuse such items.

To prevent food contamination and the transmission of infectious diseases, a food business must not reuse single use items if they will come into contact with food or a person's mouth. This is because items intended for single use have not been specifically manufactured to be able to be effectively cleaned and sanitised. Used items that are not effectively cleaned and sanitised may be contaminated with pathogens that could be transmitted to food or persons. Single use items are not designed to withstand processes used for cleaning and sanitising (e.g. heat or chemicals). These processes may affect the chemical properties of the items making them unsafe for use with food; for example, high heat treatment of some plastics may result in chemicals leaching into food.

Food businesses may reuse single use items for purposes that do not involve contact with food or a person's mouth. For example, used food containers could be reused to hold dirty cutlery.

Reuse by customers

Single use items provided to customers may be reused by customers. For example, customers may choose to refill disposable cups with drink at a self-service drink unit, or to reuse plastic takeaway containers in their homes.

Disposable gloves best practice

- Disposable gloves may be used for one task only, to prevent the transfer of pathogenic microorganisms or other contaminants. For example, gloves should be changed between handling raw food and handling ready-to-eat food, or between activities such as cleaning or removing garbage and handling food.
- Once a glove is removed from a hand, it cannot be reused.
- Hands should be thoroughly washed between glove changes to prevent transferring contamination from the used gloves to the fresh ones.

24 Animals and pests

The intended outcome is that food premises are kept free from animals and pests with the exception of assistance animals and, in certain circumstances, pet dogs.

Animals and pests can carry pathogenic organisms that can contaminate food. They may also contaminate food physically (e.g. fur, droppings and whole insects). The food business is therefore not permitted, except in certain circumstances, to have live animals on the premises and is required to prevent the entry of pests and to eradicate pests.

24(1) A food business must:

(a) subject to subclauses (2) and (3), not permit live animals in areas in which food is handled, other than seafood or other fish or shellfish; and

All animals are prohibited from areas where food is handled ('handling' is defined in clause 1) unless the live animal is seafood or other fish or shellfish. These particular exceptions allow food businesses to keep decorative fish in tanks and to keep and sell live seafood, fish and shellfish on the premises. However, food safety and food hygiene requirements must be followed to protect food from contamination; for example the process used to clean fish tanks should not pose a contamination risk to food handling areas.

Businesses may keep security animals outside, provided the area is not used for outdoor dining or drinking.

For home-based businesses, this clause prohibits pets (other than fish) in food handling areas such as the kitchen and food storage areas.

(b) take all practicable measures to prevent pests entering the food premises; and

To protect food or food contact surfaces from becoming contaminated, the food business must do all that it practically can to prevent pests from entering the food premises. Practicable measures should be based on risks to food safety and be appropriate for the type of premises. They could include, for example:

- generally positioning food products and operations to protect them from pest contamination, for example:
  - » enclosing food preparation areas as much as practicable
  - » limiting food preparation in open areas to low-risk foods (e.g. coffee)
  - » storing and displaying food under covers, behind protective guards, in enclosed display cabinets/fridges
  - » keeping uncovered food away from pest control devices
- providing and maintaining mesh screens on windows, doors and other openings
- for open-front food businesses, having small servery openings that can be opened and closed
- installing weather strips at the base of doors
- providing self-closing doors, double doors or air curtains at door entries
- keeping doors closed when not in use
- ensuring there are no holes, cracks or gaps in ceilings, walls and floors — including sealing around holes made to provide service pipes, wires, etc.
- keeping food and waste in sealed containers
- ensuring rubbish is regularly removed
- using pest repellent and trap devices (e.g. at entrances and exits).

See also regulatory agency websites (food safety websites) in Resources and References.

(c) take all practicable measures to eradicate and prevent the harbourage of pests on the food premises and those parts of vehicles that are used to transport food.

Preventing pest harbourage

Practicable measures the business can take to prevent harbouring pests on food premises and those parts of vehicles that are used to transport food include:

- keeping the inside and outside of the premises and vehicle clean as per clause 19
- regularly checking the premises and equipment (such as under and behind appliances and containers, under benches and sinks, in cupboards and wall cavities) for signs of pest activity (e.g. droppings, scratch marks and feathers) and treating affected areas as necessary
- storing food and other items off the floor
- keeping food and waste in sealed containers
- ensuring rubbish is regularly removed
- ensuring there is no unnecessary equipment or fixtures stored on the food premises
- using pest repellents or lure traps
- implementing a suitable pest control plan, which may involve a licensed pest controller (further information is provided in Appendix 7).

Pest eradication

Practicable measures the business can take to eradicate pests on food premises and in parts of vehicles used for food transport include:

- implementing a pest control plan with regular pest inspections and treatments (further information is provided in Appendix 7)
- hiring a professional pest controller — while not a legal requirement it will be necessary if pests cannot be adequately controlled by the food business
- using chemicals (suitable sprays or baits) or physical means (traps, electric insect controls) to kill or remove pests from the food premises.

Care should be taken to ensure any chemicals or killed pests (e.g. from the use of automatic spray dispensers and electric insect controls) do not contaminate food or food contact surfaces. Control devices such as electric zappers should not be used directly above food preparation areas, exposed food or unwrapped packaging material. Similarly, chemicals should not be used near exposed food or packaging. If this is unavoidable, non-spray chemicals should be used.

If food does become contaminated or is likely to have become contaminated by chemicals or killed pests, it must be disposed of. If eating and drinking utensils or food contact surfaces are contaminated during pest treatment, they will need to be cleaned and sanitised before they are used.

Example

Self-monitoring for pests

A business is self-monitoring for pest harbourage and eradication on the food premises. The proprietor draws up a pest control plan that outlines the pests being controlled, and the types and location of pest control being used (rodent baits, chemical sprays suitable for food premises and insect zappers). All baits are secured to the floor and date labelled, and insect controllers are placed in various locations around the premises, avoiding sites directly above food preparation and packaging areas.

A checklist of areas to inspect includes reminders to check under and behind all appliances, sinks, storage and waste areas. Records of monthly inspections are kept to remind the business of when to repeat inspections or treatments, and to demonstrate the business is conducting regular checks.

See also regulatory agency websites and food safety plans in Resources and References.

24(2) A food business must permit an assistance animal in areas used by customers.

'Assistance animal' (see subclause 24(4) below) is a dog or other animal trained to assist a person with a disability to alleviate the effect of a disability, as referred to in Section 9 of the *Disability Discrimination Act 1992*.

Persons with an assistance animal are permitted to take the animal with them into the dining and drinking areas of food premises and any other areas used by customers. However, assistance animals are not permitted in non-public areas, such as the kitchen.

24(3) A food business may permit a dog that is not an assistance animal to be present in an outdoor dining area.

'Outdoor dining area' is explained in clause 24(4). It is up to the food business whether or not they permit customers to have their dogs in outdoor dining areas and under what conditions (e.g. they may require that dogs are to be kept on the ground and leashed). Animals other than dogs or assistance animals are not permitted in outdoor dining areas.

A business that permits dogs in outdoor dining areas must ensure high standards of food safety and personal hygiene are maintained. The business must also comply with other regulations in place such as council bylaws.

24(4) In this clause —

assistance animal means an animal referred to in section 9 of the Disability Discrimination Act 1992 of the Commonwealth.

enclosed area means an area that, except for doorways and passageways, is substantially or completely closed, whether permanently or temporarily, by —

(a) a ceiling or roof; and

(b) walls or windows or both walls and windows.

outdoor dining area means an area that —

(a) is used for dining, drinking or both drinking and dining; and

(b) is not used for the preparation of food; and

(c) is not an enclosed area; and

(d) can be entered by the public without passing through an enclosed area.

Example

Permitting dogs in outdoor dining areas

A food business has an open dining area outdoors and chooses to permit pet dogs in this area as per subclause 24(3). However, in winter the food business encloses this area with café blinds and a retractable awning, making the area temporarily but substantially enclosed (i.e. no longer an 'outdoor dining area'). Subclause 24(3) would not apply during the period this winter set-up is used.

25 Alternative methods of compliance

This clause outlines how food businesses can demonstrate that an alternative system they have in place will not adversely affect the microbiological safety of the food. Food businesses are permitted to have safe alternative systems for the temperature control of potentially hazardous food as well as for the cooling and heating of this food.

Food businesses are permitted to use safe alternative systems for compliance with the following subclauses:

- 5(3) Food receipt (the business transporting the food may demonstrate it has a safe alternative system in place)
- 6(2)(a) Food storage
- 7(3) Cooling
- 7(4) Reheating
- 8(5)(a) Food display
- 10(b) Food transportation.

25 Without limiting the ways in which a food business can demonstrate that the temperature and any heating or cooling process it uses will not adversely affect the microbiological safety of food, a food business satisfies this requirement by complying with:

If a food business is not complying with the temperature and, where specified, the time and temperature requirements of these clauses, it must be able to demonstrate to the appropriate regulatory agency that the alternative system it is using is safe. 'Safe' in this context means that the microbiological safety of the food is not adversely affected; that is, that the alternative system will not allow foodborne pathogens to grow to unsafe levels. The business is not required to demonstrate that the alternative system will not adversely affect the physical or chemical safety of the food.

Several options for demonstrating compliance are listed in paragraph (a), (b) and (c) below, although businesses are not restricted to these options.

(a) a food safety program that meets the requirements for food safety programs in the Act, regulations under the Act, or a food safety standard other than this Standard;

Certain food businesses are obliged to have food safety programs, including:

- businesses that serve or process potentially hazardous food for service to vulnerable people, in accordance with Standard 3.3.1 — Food Safety Programs for Food Service to Vulnerable Persons
- seafood businesses that engage in the primary production or processing of, or manufacturing activities concerning, bivalve molluscs in accordance with Standard 4.2.1 — Primary Production and Processing Standard for Seafood
- businesses producing manufactured and fermented meats, in accordance with Standard 4.2.2 — Primary Production and Processing Standard for Poultry Meat and Standard 4.2.3 — Primary Production and Processing Standard for Meat
- businesses required by the relevant state or territory to develop and implement a food safety program, in accordance with requirements for that program in the state or territory where the business is located.

Businesses using an alternative system for potentially hazardous food as part of an approved food safety program will satisfy the requirement. Further information on food safety programs and templates is available from jurisdictions (see websites in Resources and References).

For example, the Victorian Department of Health produces a series of templates for food safety programs to enable businesses to comply with the requirements of the Victorian Food Act (see their Food businesses information web link).

(b) if no such requirements apply to the food business, a 'food safety program' as defined in this Standard;

'Food safety program' is defined in clause 1. If a food business is not legally obliged to implement a food safety program but wishes to demonstrate that it has a safe alternative system in place for the temperature control of potentially hazardous food through a food safety program, the program must be in accordance with this definition.

(c) a process that according to documented sound scientific evidence is a process that will not adversely affect the microbiological safety of the food; or

Food businesses may use an alternative system that is based on documented sound scientific evidence to demonstrate their system is safe. This evidence may be from, for example:

- published scientific papers
- written advice from expert organisations or persons — for example, validation of a process through laboratory testing by a NATA-approved agency
- Appendix 2 — The use of time as a control for potentially hazardous food (and associated modelling)
- Appendix 5 — Cooling of meats after cooking.

The evidence will need to specify the time and temperature that potentially hazardous food can be safely kept without affecting the food's microbiological safety. For example, Appendix 2 indicates that generally, ready-to-eat potentially hazardous food can be safely kept at temperatures between 5°C and 60°C for up to 4 hours.

The food business will need to demonstrate that the advised times and temperatures are not exceeded in the alternative system it uses. For example, if a business wishes to use the '2-hour/4-hour rule' described in Appendix 2, it will need to use a process that ensures food is not kept at ambient temperatures for more than 4 hours. It should be able to demonstrate this process was followed, for example through documented standard operating procedures, the use of time-identifying labels or other appropriate means that can be checked. An example template for logging time is provided in Appendix 8.

Examples on using time as an alternative control (including the 2-hour/4-hour rule) are provided in Appendix 2.

(d) a process set out in written guidelines based on sound scientific evidence that are recognised by the relevant food industry.

Industry guidelines based on sound scientific evidence may be used by food businesses as an alternative method of compliance. Industry sectors that may develop these guidelines include restaurant and catering, hotel, bed and breakfast, meat, dairy, bakery and supermarket sectors. An example is Meat and Livestock Australia's Guidelines for the Safe Manufacture of Smallgoods. Industry associations can be contacted for advice on whether relevant and recognised guidelines are available.

STANDARD 3.2.2A
FOOD SAFETY MANAGEMENT TOOLS

STANDARD 3.2.2A
FOOD SAFETY MANAGEMENT TOOLS

Summary

Standard 3.2.2A is an extension of the Standard 3.2.2 food safety requirements. It applies to Australian businesses in food service, catering and retail sectors that handle unpackaged, potentially hazardous food that is ready to eat. Generally, this includes caterers, restaurants, cafés, takeaway shops, pubs, supermarkets and delis, food vans and other facilities serving food (see example box). The standard requires these businesses to implement either two or three food safety management tools (in addition to their existing Chapter 3 obligations), based on their food handling activities. The three tools are food safety supervisor, food handler training and substantiation of critical food safety controls.

Standard 3.2.2A classifies businesses as category one or category two businesses (explained below). Category one businesses must implement all three management tools. Category two businesses must have a food safety supervisor and have staff trained in safe food handling.

Category one and category two classifications are described for the purposes of this standard. They are separate to business risk classifications used in states and territories (e.g. Class 1 or Priority 1 business). Refer to jurisdictional guidance or authorised officers to clarify how category one or category two align with each jurisdiction's classifications.

I Name

Clause 1 names the standard:

3.2.2A—1 This Standard is Australia New Zealand Food Standards Code – Standard 3.2.2A – Food Safety Management Tools.

The name reflects that it is an extension of requirements in Standard 3.2.2. That is, food businesses who must comply with Standard 3.2.2A must also still comply with all requirements in Standard 3.2.2 and Standard 3.2.3. A note to the clause states that Standard 3.2.2A becomes enforceable from December 2023 (12 months after gazettal date).

II Definitions

Clauses 2, 4, 5, 6, 7 and 12 contain definitions for terms specifically used in Standard 3.2.2A.

Key definitions are:

- category one business — in clause 6, see part IV of this guidance
- category two business — in clause 7, see part V

- food safety supervisor — in clauses 2 and 11, see part VII
- food safety supervisor certificate — in clauses 2 and 11, see part VII
- food safety training course — in clauses 2 and 10, see part VII
- food service and serve — in clause 4, see part IV
- prescribed activity — in clause 5, see part VI
- prescribed provisions — in subclause 12(4), see part VII.

These terms are underlined within each relevant clause.

Other definitions:

- Definitions for *potentially hazardous food, process,* and *ready-to-eat food* provided in this standard are consistent with the definitions used in Standard 3.2.2. Some explanatory text on these terms is in the chapter on that standard.
- *Food business, food handler, food premises* and *handling* are defined in Standard 3.1.1. Some explanatory text on these terms is in the chapter on that standard.
- *Application Act, authorised officer, caterer, fund raising event, jurisdiction* and *relevant authority* are defined in Standard 1.1.2.

III Application of this standard

Clause 3 sets out which businesses the standard applies to:

3.2.2A—3(1) This Standard applies to a food business in Australia that is a category one business or a category two business.

The standard applies to all food businesses in Australia identified as a 'category one' or 'category two' business – Attachment 1 has a decision flow chart showing which activities are linked to each category. The categorisation is regardless of the business size, location or business model (e.g. permanent, temporary, fixed, mobile). The business categories and their requirements are described below in section IV (category one) and V (category two). They are referred to in clauses 6, 7, 8 and 9 of the standard.

Basically, these businesses handle food that is unpackaged, ready-to-eat and potentially hazardous food, in the final stages before consumers will eat it. These handling activities have inherently high food safety risks and have been linked to foodborne illness outbreaks in Australia and overseas.

Examples

What type of businesses are captured by the standard?

The standard applies to food service and closely related retail businesses who are defined as either category one or category two businesses in the standard. General examples include, depending on their activities:

1. restaurants, cafés, pubs, hotels with table service, takeaway and smorgasbords
2. supermarkets and delis
3. takeaway shops, mobile food vendors and juice bars
4. hospitals, aged care facilities and childcare centres.

Examples

The standard does not generally apply to:

1. food handling for or at an event raising funds solely for charity (e.g. a sausage sizzle)
2. businesses that only manufacture or wholesale food (e.g. a manufacturer of bulk ham that is sold packaged to supermarkets)
3. other food businesses that are not serving or retailing unpackaged food that is potentially hazardous and ready to eat (e.g. service station selling food that remains in its original packaging, coffee van that only sells food that is not potentially hazardous).

Further details are provided under sections IV (for category one businesses) and V (for category two businesses). Attachment 1 has a decision tree for determining which category a business fits into.

Clause 3 also sets out an exemption for fund raising events:

3.2.2A—3(2) This Standard does not apply to the handling of food for or at a fund raising event.

The standard does not apply to food handling activities for or during a fund raising event. A fund raising event is considered a one-off event and is defined as 'an event that raises funds solely for a community or charitable cause and not for personal financial gain' (in Standard 1.1.2).

This exemption has been included because fund raising events are often run by volunteers and are only run now and then. It is considered impractical to require the food handlers to do a food safety training course, or for the organisation to have a food safety supervisor or maintain records for these events. However, organisations at fund raising events still have to ensure only safe and suitable food is sold, and meet the requirements of Standards 3.2.2 and 3.2.3.

IV Category one business

The intended outcome is that food businesses engaging in high-risk food handling activities are identified as category one businesses. These businesses must implement all three food safety management tools (food safety supervisor, food handler training and evidence), to strengthen their management of hazards known to contribute to foodborne illness.

This section covers several clauses related to category one businesses, including definitions and required food safety management tools.

(i) Definition of category one business

A category one business is defined based on specific activities, in clause 6:

3.2.2A—6 For the purposes of this Standard, a category one business means a food business that:

(a) is a caterer or a food service; and

(b) processes unpackaged potentially hazardous food into a food that is:

(i) potentially hazardous food; and

(ii) ready-to-eat food.

A category one business is a caterer or food service business that processes unpackaged potentially hazardous food into food that is both ready-to-eat and potentially hazardous food. The food is then served to a consumer for consumption. Because the food is directly handled by the category one businesses, it may be exposed to contamination by harmful microorganisms and other hazards before it is served.

'Food service' is defined in clause 4, see below. 'Caterer' is defined in Standard 1.1.2 as a person, establishment or institution (for example, a catering establishment, a restaurant, a canteen, a school, or a hospital) which handles or offers food for immediate consumption. 'Immediate consumption' means intended for consumption by the consumer without the need for any further processing, whether consumed at the food premises or elsewhere.

A flow chart for classifying a food business as category one is in Attachment 1. The categorisation is based on the food business activities, regardless of the business size (number of food handlers), location or business model (e.g. mobile, fixed premises, temporary, permanent). Fund-raising events are excluded (see subclause 3(2)).

Examples of category one businesses include (but are not limited to) restaurants, takeaway outlets, caterers and bakeries – see the text box.

Category one businesses must implement all three food safety management tools, under clause 8 (see (iii) below) – a food safety supervisor, mandatory food handler training and substantiation of particular food safety controls. Clauses 10, 11 and 12 respectively contain the requirements for each of these tools (see section VII).

They are designed to strengthen food safety measures in category one businesses, over and above the requirements in Standards 3.2.2 and 3.2.3.

Examples

Category one businesses

A flow chart for classifying a food business as category one is in Attachment 1. Examples of category one businesses could include:

- A dine-in restaurant processes vegetables and raw meats into salad and cooked meat. The food is served ready-to-eat to consumers on-site.
- A mobile food vendor cooks and cools a fried rice dish, containing cooked rice, vegetables and egg at their base kitchen. The product is then packaged into individual serves, and transported to the site where the food is reheated and served to consumers.
- A bakery makes and sells custard tarts, quiches, fresh cream buns and other potentially hazardous foods on-site, for consumption both on-site and off-site.
- A takeaway shop makes and serves hot chickens, salads, hot chips and gravy and other takeaway foods for consumption off-site.
- A caterer makes sandwich platters in their central kitchen then delivers to consumers at offices and other functions for immediate consumption.
- A training center prepares buffet-style meals on-site for training participants from many different organisations using their facilities. They are providing hot and cold potentially hazardous food that is ready to eat as part of the training fee of the participant.
- Hospitals, child care centres, aged care facilities that process and serve meals.

Not a category one business

- A service station that sells hot pies and other food that is all sold in original packaging (i.e. food remains packaged). The standard would not apply to this business.
- Category two businesses are described in section V.

(ii) Food service

Subclause 4 (1) defines what 'food service' means, used in the definition of category one business:

3.2.2A—4 (1) For the purposes of this Standard, food service means a food business which processes and serves ready-to-eat food direct to a consumer, whether consumed at the food premises or elsewhere.

For a business to be considered 'food service' it must both *process* (see below) and *serve* (defined below in subclause 4(2)) food to the consumer in a form that is ready to eat. The food can be consumed where it was served (e.g. a restaurant), or taken away or delivered to eat somewhere else.

The definition of 'process' is in clause 2 and is consistent with Standard 3.2.2. It means, in relation to food, an activity conducted to prepare food for sale and includes – but is not limited to – chopping, cooking, drying, fermenting, heating, thawing and washing, or a combination of these activities.

Examples of food service businesses may include restaurants, pubs, cruises, supermarkets (that process and serve ready-to-eat food), caterers, canteens, takeaway shops, mobile food vendors, bakeries, juice bars, hospitals, child care centres and aged care facilities. Whether or not the standard applies to a food service business will depend on whether they are defined as a category one business. That is, whether they process and serve unpackaged potentially hazardous food that is ready to eat.

Subclause 4 (2) defines what 'serve' means in the context of food service:

3.2.2A—4 (2) For the purposes of subsection (1), serve means the act of setting out or presenting food to or for a person to eat that food and includes the following activities:

(a) portioning food from a bulk tray or container into single serves and placing it on plates; or

(b) presenting food in a bain-marie or other bulk food display unit for self-service; or

(c) delivery of plated food.

Put simply, serve means providing food to a consumer to eat immediately (even if they choose to eat it later). It is the last step of food preparation before consumption. Serving includes, but is not limited to, portioning bulk food into smaller serves, placing food into a self-serve buffet, or having staff deliver food on a plate. The served food may be presented in packaging/wrapping (e.g. a takeaway or home delivered product).

(iii) Food safety management tools required for category one businesses

All three food safety management tools apply to category one businesses. The intended outcome is that a category one business puts in place prescribed training, supervision and information-keeping, to strengthen their management of key food safety risks and reduce the likelihood of foodborne illness.

Clause 8 requires category one businesses (defined in clause 6) to put in place all three food safety management tools of this standard:

3.2.2A—8 A category one business must comply with sections 3.2.2A—10, 3.2.2A—11 and 3.2.2A—12.

The three tools referred to in clauses 10, 11 and 12 are:

- all food handlers undertaking prescribed activities must have completed a food safety training course or have appropriate skills and knowledge (clause 10)
- a food safety supervisor must be appointed and be reasonably available (clause 11)
- records or other evidence to substantiate that specific activities are being properly managed (prescribed provisions of Standard 3.2.2, listed in clause 12).

Each of these tools is further described in section VII below.

If a business engages in a range of activities of both a category one and category two business (see Attachment 1), then it is deemed a category one business and clause 8 applies. The requirements are based on the business's highest-risk activities, and are designed to strengthen the business's food safety management.

V Category two business

The intended outcome is that food businesses retailing unpackaged potentially hazardous food are identified as category two businesses. These businesses must implement two of the three food safety management tools in the Standard, to strengthen their management of hazards known to contribute to foodborne illness.

This section covers two clauses related to category two businesses, including the definition and required food safety management tools.

(i) Definition of category two business

A category two business is defined by the activities listed in clause 7:

3.2.2A—7 For the purposes of this Standard, a category two business means a food business that offers for retail sale a food that is:

(a) potentially hazardous food; and

(b) ready-to-eat food; and

where that food:

(i) was received unpackaged by the food business or was unpackaged by the food business after receipt; and

(ii) was not made or processed (other than slicing, weighing, repacking, reheating or hot-holding the food) by the food business.

A category two business conducts retail sale of potentially hazardous, ready-to-eat food, where the food was handled unpackaged by the business, but not made or processed on-site (other than the excluded activities of slicing, weighing, etc.).

As with category one businesses, the categorisation is based on the food business activities, regardless of its size, location or business model. Fund raising events for charity are excluded.

Examples

Category two businesses

A flow chart and decision tree for categorising a food business as category two is provided in Attachment 1. Examples of category two businesses:

1. A supermarket delicatessen section receives ready-to-eat salads in a bulk bag to portion and serve. The bag is opened and the salad placed into a container in a refrigerated display unit, where customers can pick an amount to be weighed and packaged for them by delicatessen staff. In this example the food is received by a retailer, is potentially hazardous and ready-to-eat. The food was received in a package but was unpackaged by the business before being sold to the consumer, but the food was not made or processed on-site (other than being weighed and repackaged, which are exempt activities in 7(b)(ii)).
2. A service station receives packaged pies, pasties and sausage rolls from the local bakery. The service station unpackages these products, reheats them and then hot holds them in a display oven. The products are placed into a bag for sale to the consumer. In this example, the food has been unpackaged by the business, but not further processed other than (the exempted activities in 7(b)(ii)) being reheated and hot held. Note: if the bakery products were kept in their original packaging, the service station would not be a category two business (it would be exempt from the standard), because the food it handled was not unpackaged.

Businesses that are not category two businesses

1. A mobile food business receives packaged sandwiches, salads and fresh juices and sells them in the same unopened packaging. The business does not handle any unpackaged food so it is not a category two business (nor is it a category one business).
2. A small convenience store receives and slices ham, chicken loaf, and turkey for retail sale. The store also uses these foods to make sandwiches at their sandwich bar to serve customers. As the business processes ready-to-eat potentially hazardous foods (by making sandwiches) for service as a ready-to-eat food, it is considered a category one business. It is categorised according to its highest risk activity.

As mentioned above, unpackaged potentially hazardous food that is ready to eat is at high risk of contamination, because it is exposed and may be directly handled. Category two businesses are considered lower risk than category one businesses, because there is less handling of the product, in that slicing, weighing, repacking, reheating or hot holding only involve minimal handling. However, as the food is not further processed in a way that will reduce pathogens (e.g. cooked) before sale to the consumer, it is still a relatively high risk.

Category two businesses may include retail businesses such as delicatessens, market stalls, supermarkets with delis, service stations, convenience stores and other food retailers.

To strengthen food safety in category two businesses, the standard requires two tools to be put in place—a food safety supervisor and food handler training— under clause 9 (see (ii) below). The food safety management tools are detailed under section VII.

(ii) Food safety management tools required for category two businesses

The intended outcome is that category two businesses put in place prescribed training and supervision of food handlers, to strengthen their management of key food safety risks and reduce the likelihood of foodborne illness.

Clause 9 identifies that a category two business (defined in clause 7) must put in place two food safety management tools:

3.2.2A—9 A category two business must comply with sections 3.2.2A—10 and 3.2.2A—11.

The tools referred to in clauses 10 and 11 are:

- all food handlers undertaking prescribed activities must have completed a food safety training course or have appropriate skills and knowledge (clause 10)
- a food safety supervisor must be appointed and be reasonably available (clause 11).

Each of these tools is further described in section VII.

Category two businesses are not required to make records to substantiate their management of food safety (i.e. clause 12 does not apply to these businesses).

If a business engages in activities of both a category one and category two business, it is classed as a category one business and clause 8 (i.e. all three management tools, as above) applies to that business. A business is classed according to its highest risk activity.

VI Prescribed activities

The intended outcome is to identify target activities of the Standard; that is, activities related to handling potentially hazardous food at a stage where there is no further preparation step before consumption that would destroy any pathogens in the food.

Clause 5 defines what a 'prescribed activity' is, used in clauses 10-12:

3.2.2A—5 For the purposes of this standard, a prescribed activity is the handling by the food business of any unpackaged potentially hazardous food that:

(a) is used in the preparation of ready-to-eat food to be served to a consumer; or

(b) is ready-to-eat food intended for retail sale by that business.

Prescribed activities are the handling of unpackaged potentially hazardous food and either:

- preparing that food as part of ready-to-eat food served to a consumer; or
- retail sale of that food in a ready-to-eat form.

These activities are considered high risk and are the targets for the food safety management tools in this standard. This is because unpackaged potentially hazardous foods are open to contamination by harmful microorganisms or other hazards immediately before the food is served and eaten. Food handlers may have direct contact with this food before service and there is no further step to kill pathogens that may be present in the food.

The risks need to be carefully managed through keeping the food at safe temperatures during all stages of handling (receiving food, storing, processing, transporting, displaying) and minimising the chances of food becoming contaminated from unhygienic practices or equipment. The food safety management tools are designed to ensure food handlers know what to do and how to do it correctly.

Examples

Prescribed activities

1. A restaurant receives potentially hazardous food (PHF) such as raw meat, salad vegetables, dairy and eggs. The food is unpackaged for preparation then made into meals that are served to dine-in customers. These activities are prescribed activities, as they involve handling unpackaged PHF to prepare and serve as ready-to-eat food.
2. A supermarket receives bulk packaged ready-to-eat meats. The meats are opened and displayed for sale in the deli section cabinet. Customers request specific amounts of meat, which the deli staff slice, weigh and package for the customer. These ready-to-eat meat handling activities are prescribed activities as the food is unpackaged PHF that is ready to eat and sold through retail sale.

Not prescribed activities

A category one bistro business engages in a range of activities, including preparing meals and selling alcohol and packaged snacks (nuts and chips). The handling of alcohol and packaged snacks are not prescribed activities, as they do not involve food that is unpackaged and potentially hazardous.

All businesses undertaking prescribed activities will be either a category one or category two business, depending on the details of their activities (clause 6 and 7, section IV and V). The food safety management tools detailed below must be used to manage prescribed activities in the business.

VII The food safety management tools

(i) Food safety training for food handlers engaged in a prescribed activity

The intended outcome is that food handlers have appropriate and adequate food safety skills and knowledge to handle potentially hazardous foods and keep them safe to eat.

Clause 10 requires food handlers to have obtained adequate skills and knowledge for high risk activities:

3.2.2A—10 The food business must ensure that each food handler who engages in a prescribed activity has, before engaging in that activity:

(a) completed a food safety training course; or

(b) skills and knowledge of food safety and hygiene matters commensurate with that specific prescribed activity.

Food handlers in both category one and category two businesses must meet these requirements (as per clauses 8 and 9). Food businesses in either category must ensure all food handlers have completed a food safety training course, or have appropriate skills and knowledge, before they start handling high-risk foods.

For part (a), the standard has the following definition (in clause 2) of food safety training course:

food safety training course means training in food safety that includes training in each of the following:

(a) safe handling of food; and

(b) food contamination; and

(c) cleaning and sanitising of food premises and equipment; and

(d) personal hygiene.

The food safety training course must include all of the listed topics but specific courses or units are not prescribed. Course content for the listed topics should cover, at a minimum:

- safe handling of food – including temperature control measures for potentially hazardous food and understanding of the temperature danger zone
- food contamination – including strategies to keep raw and cooked food separate, allergen management, food storage, and use of separate utensils and chopping boards
- cleaning and sanitising of food premises and equipment – including correct procedures for cleaning then sanitising, using food-safe chemicals, and/or using heat as a sanitiser
- personal hygiene – including obligations for sick employees, handwashing, uniforms and grooming of hair, nails, skin, etc.

The intention is that food handlers have obtained knowledge and skills to safely handle food that supports the growth of pathogenic microorganisms and is inherently high risk. These topics have been prescribed because they cover activities that can directly affect the safety of ready-to-eat potentially hazardous foods. These processes need to be strictly controlled, so food handlers need a clear understanding of the activities and food safety risks.

Keeping food at safe temperatures, avoiding contamination and cross-contamination, correct cleaning and sanitising of food premises and equipment, and good personal hygiene (see clause 2) will all reduce the risk of pathogens getting into food or growing in it. However, if done incorrectly, these activities are known to cause or contribute to foodborne illness.

Part (b) means a business can recognise a food handler's prior learning – such as competency-based food safety training, in-house education, or a food safety induction course completed at another food business – instead of a food handler needing to complete a food safety training course. Under subclause (b), a business may also be able to recognise a food handler's previous experience in the food industry, as long as it is relevant to the activities they do. See example below.

How and where to receive training:

Businesses can choose how food handlers are trained – they may use free online food safety training programs (e.g. I'm Alert and DoFoodSafely are free and recognised by regulatory agencies), courses from vocational training providers, or training developed by the business or other food businesses where the employee worked previously. Internal training may be tailored to suit the business's own activities and procedures, but it must cover safe handling of food, understanding of food contamination, cleaning and sanitising of food premises and equipment, and personal hygiene.

Businesses may choose to keep a record of the training food handlers have completed. This will enable them to be sure everyone has completed the training they need, and easily demonstrate to authorised officers they have met the requirements of this clause.

Additional training:

No specific timeframe or refresher period has been set for food handler training. However, businesses need to make sure their food handlers' skills and knowledge is adequate and up to date. It is best practice to schedule regular refresher training.

Additional training may be needed for food handlers working with high-risk products or high-risk processes; for example sous vide cooking or making raw egg foods.

If an authorised officer determines a food handler may not have the necessary skills and knowledge, they may request that the food handler does further training.

Business owners may also consider food safety training for themselves or managers even if they don't handle food, as part of a strong food safety culture, and to understand and mitigate the business's risks.

Examples

A food handler hasn't completed a food safety training course

1. A food handler has been newly appointed to a sandwich bar. The business must make sure the food handler has completed a food safety training course, or already has appropriate skills and knowledge to make sandwiches (a prescribed activity involving handling unpackaged potentially hazardous foods that are ready to eat). The manager knows the food handler made sandwiches and similar meals in a previous job and has a positive referee report from the previous employer. The food safety supervisor at the business also questions the food handler on food safety and hygiene and is confident they know how to keep the business's food safe. In this example, the food handler doesn't need to complete a food safety training course.
2. Another staff member at this same food business is new to the food industry. They do not have the required skills and knowledge to make sandwiches or handle other potentially hazardous food that is ready to eat. They must either complete a food safety training course (e.g. online or through the food safety supervisor), or do other tasks that do not involve handling high risk food. For example, they could do general cleaning, handle low risk foods, take orders and/or wait tables. Once they have food safety knowledge and skills adequate to safely handle high risk food, they can then make sandwiches, etc.

(ii) Supervision of food handlers

The intended outcome is that food handlers in category one and two food businesses are adequately supervised by a trained and competent supervisor.

Clause 11 sets out the requirements for a food safety supervisor (FSS):

3.2.2A—11 The food business must:

(a) appoint a food safety supervisor before engaging in a prescribed activity; and

(b) ensure that the food safety supervisor is reasonably available to advise and supervise each food handler engaged in that prescribed activity.

Both a category one and category two business must appoint a certified FSS (see below) before doing any high-risk food handling (i.e. a 'prescribed activity', see section VI and clauses 5, 8 and 9). The FSS must also be 'reasonably available' (see below) to do their job including advising and supervising food handlers engaged in prescribed activities. The intention is that a FSS with appropriate skills, knowledge and authority can effectively supervise the food handlers and ensure food is kept safe, particularly high-risk potentially hazardous food that is ready-to-eat.

The standard defines a food safety supervisor in clause 2:

food safety supervisor means a person who:

(a) holds a food safety supervisor certificate that has been issued within the immediately preceding period of 5 years; and

(b) has the authority and ability to manage and give direction on the safe handling of food.

A FSS must be a person who has obtained formal certification as a FSS within the past 5 years (see definition below on FSS certificate). This way, a FSS should have recent, relevant and consistent skills and knowledge to handle food safely, particularly high-risk food. They must be able to recognise, prevent and fix food safety problems. A FSS must be given authority from the business to both supervise and instruct other food handlers. It is not considered reasonable for a business to appoint someone who does not regularly handle food as part of their normal duties, or a person who is never onsite at a food business, to the role of FSS.

The FSS should be able to provide their certificate to an authorised officer, if requested.

For clarity, clause 2 also defines a food safety supervisor certificate in the FSS definition:

food safety supervisor certificate means certification as a food safety supervisor by:

(a) a registered training organisation; or

(b) an organisation recognised by the *relevant authority under the application Act.

FSS certificates must be obtained from either a registered training organisation (e.g. accredited through the Australian Skills Quality Authority), or an organisation recognised by the relevant food regulator. The certificate will show the participant has successfully completed the required national units of competency for the FSS course. Details of FSS competency units are available on the national register of vocational education and training website at training.gov.au.

For the purposes of this standard, a FSS certificate is valid for five years (as above). Some training organisations may offer refresher FSS courses for those who have received the qualification previously. Alternatively, the complete FSS course will need to be repeated every five years.

Role of the FSS

The role of the FSS is to make sure the business is handling food safely. They can do this through instructing staff, reviewing and updating business procedures, and inspecting food handling operations and the premises. Where potential hazards are identified, it is the role of the FSS to make sure risks are managed and issues are prevented or corrected. The business needs to make sure the FSS is able to fulfil these duties.

The FSS also has an important role in sharing skills and knowledge, and improving awareness of what can happen if food is unsafe – that is, foodborne illness and injury and its impacts. This helps foster a positive food safety culture, where food safety is a top priority in 'the way things are done around here'.

In a business with good food safety culture workers' attitudes and behaviours result in food being handled in a way that keeps it safe (e.g. importance of adherence to the 2-hour/4-hour rule). If something goes wrong, food that may be unsafe to eat is not processed further or served to consumers.

Further information on food safety culture is in Appendix 11.

'Reasonably available'

To be an effective supervisor, the FSS must be 'reasonably available' as a point of contact for food handlers and authorised officers while the business is undertaking the prescribed activity. The FSS should be in a position where they can oversee food handling and be involved in the day-to-day food handling operations of the food business.

'Reasonably available' generally means the FSS physically works on-site and oversees food handling of high-risk unpackaged foods, or can be easily contacted (e.g. by phone) if established food handling procedures are in place at the business. See the examples below.

Examples

'Reasonably available' food safety supervisor

1. Neighbouring food businesses: A proprietor has two cafés on opposite sides of town. Each business has a separate on-site manager and the proprietor works at either store, depending on the spread of staff and customer demand. The proprietor decides to make the manager at each site a FSS so food safety can be effectively managed at both his businesses.

2. Food safety supervisor studies part time : A food safety supervisor works on-site at a supermarket deli 80% of the time, and studies online in the other hours. In their study time, they are contactable by mobile phone at all times the deli is operating. The deli also has written procedures in place and staff are well trained to follow them. If a problem comes up, the supervisor would be reasonably available to instruct the food handlers by phone.

3. Sporting club kitchen and bar: A sporting club kitchen closes at 9pm but the club remains open until 11pm for entertainment activities, including serving drinks. A FSS would not be required to be available for the period after 9pm even though the business is open, as they are not undertaking prescribed activities at that time.

Examples

Food safety supervisor not 'reasonably available'

1. Morning and afternoon shifts: A person works half days at a restaurant, commencing at midday each day and is not contactable outside their working hours. Breakfast is served from 8am and lunch preparations commence at 11am. This person would not be considered to be reasonably available to be contacted at all times while the food business is open. However, subject to meeting other criteria, the person may be the food safety supervisor for the afternoon shift, with a different person nominated as the food safety supervisor for the morning shift.

2. Supervisor on leave: A small business relies on a single food safety supervisor to manage food safety. The supervisor needs to go on extended leave (6 months) for personal reasons. They will not be readily contactable during this time. The business will need to organise another food safety supervisor, but will be given reasonable allowance (for example, 30 days) to appoint someone or get someone trained.

For short periods of absence (for example, up to 30 days), there is no need to appoint a new food safety supervisor if the business has systems in place to ensure staff follow standard procedures in the supervisor's absence.

(iii) Substantiating food safety management of prescribed activities ('evidence tool')

The intended outcome is that a category one business actively monitors and manages key food safety risks related to food temperature control, food processing, and cleaning and sanitising.

The evidence tool requirement applies only to category one businesses. These businesses must maintain records or demonstrate through other suitable means to authorised officers that specific requirements in Standard 3.2.2 are being met. These requirements are for safely receiving, storing, processing, displaying and transporting potentially hazardous food, and for cleaning and sanitising. These are referred to as prescribed provisions in this Standard and are listed below. The business must show how the prescribed provision has been achieved or verified.

Clause 12 sets out the evidence requirements for category one businesses:

3.2.2A—12 (1) Subject to subsection 3, if the food business engages in a prescribed activity, the food business must make a record that substantiates any matter that the prescribed provisions require in relation to that prescribed activity.

This subclause requires a food business to make records to show it is adequately managing food safety during key ('prescribed') activities. Prescribed activities are set out in clause 5 (section VI above) and involve handling unpackaged food that is both potentially hazardous and ready to eat. 'Prescribed provisions' are listed below in subclause 12(4) and relate to keeping food at safe temperatures, and cleaning and sanitising. These directly affect the safety of ready-to-eat potentially hazardous foods and therefore need to be strictly controlled.

The requirement applies to category one businesses (see clause 6 and 8, section IV). Regardless of the range of activities a business engages in, if it is deemed a category one business, it must comply with the evidence requirements for all prescribed provisions (in subclause 12(4)).

The business must make an appropriate record, unless it can show it is complying with jurisdictional guidance on how to demonstrate substantiation, or other arrangements are agreed to with an authorised officer (see subclause 12(3) below).

It is expected that a business engaged in prescribed activities would already be monitoring temperature and process controls, and cleaning and sanitising, as they are critical for food safety. The requirement is intended to strengthen the ability of the business to manage its highest food safety risks, detect issues early and correct any problems. It may also help the business provide a tangible record of due diligence and assist if complaints are made about food sold by the business.

Outside these requirements, any food business may choose to keep any records as best practice, to assist in the overall management of the business.

What is a record?

A 'record' means a document or object in any form (including electronic) that is kept for information it contains or that can be obtained from it (refer to Archives Act 1983). Records could include, for example:

- writing or other entries on paper or electronic templates (e.g. templates used or adapted from Appendix 8 or from food regulators)
- written instructions that have been verified to achieve food safety outcomes (e.g. a validated recipe or standard operating procedure; SOP)
- notes on invoices (e.g. a receipt temperature)
- data logger information in a graph
- photos or video footage
- information recorded in any other way that allows for the required information to be captured and kept for the required amount of time.

A single record might cover more than one prescribed activity or food – for example, a record of the cool room temperature used to store all potentially hazardous foods.

Records need to be available to an authorised officer (or business personnel that need them) on request. So, records should be available at the business at any time the business is operating (e.g. not in an inaccessible drawer or inaccessible computer file).

Substantiating matters

Records to substantiate matters (e.g. to demonstrate that potentially hazardous food is kept at safe temperatures) should be made on each day the business is engaged in prescribed activities. Information recorded should include the date (and time, if appropriate) the record was made and which food or activity it relates to. Further details on what needs to be substantiated are given in Table 1 and the example box.

Examples

Making records to substantiate food safety management

1. Receiving food at safe temperature

If the 'matter' to be substantiated is that potentially hazardous foods are received at or below 5°C, or at or above 60°C (as per subclause 5(3) of Standard 3.2.2), the business must show how it knows the food was received at an appropriate temperature. So, the record needs to show what the food was, when it was received and the temperature of the food when it was received.

2. Storing food at safe temperature

A food business has a cool room and upright refrigerator to store potentially hazardous foods. There is a bottle of water in each unit, the food handlers use a probe thermometer to check the temperature of the water in each unit each day. The temperature is recorded on a sheet which is kept for 3 months.

Further examples are provided in Table 1 below and Attachment 2.

3.2.2A—12 (2) The food business must keep a record required by subsection (1) for 3 months after the business makes the record.

Where a food business is required to keep a record, that record must be kept for at least 3 months. The business may find it useful to keep records for longer periods, to track activities over time and look for trends or potential issues (e.g. signs that a bain marie needs servicing/replacing, or a food handler is not recording enough details).

The minimum 3 months has been designed to assist in foodborne illness outbreaks. This time period is based on the incubation period of listeria bacteria, a significant pathogen in foodborne illness.

3.2.2A—12 (3) Subsection (1) does not apply to a food business that can demonstrate to the reasonable satisfaction of an authorised officer on request that the business has complied with each of the prescribed provisions.

This subclause offers flexibility in how a business can show that key risks (in prescribed provisions, subclause 12(4)) are being adequately managed. A business may be able to substantiate their food safety management for prescribed provisions, for example by:

- physically demonstrating an activity (e.g. sanitising a piece of equipment, measuring the temperature of food)
- training staff on a standard operating procedure and talking/walking through that procedure with an authorised officer.

Businesses should refer to guidance material developed by their state/territory regulator for further details on how to demonstrate substantiation.

The onus is on the business to substantiate matters to an authorised officer. If an authorised officer believes the business is not adequately managing a critical activity (e.g. not following a specified SOP), they may require the business to keep records as per subclause (1) of clause 3.2.2A-12.

Examples

Managing food safety using a standard operating procedure (SOP)

1. Keeping potentially hazardous food safe using time

A shop makes sandwiches from salad and meat ingredients displayed in a refrigerated cabinet. They wrap the sandwiches and place them on top of the display cabinet, ready to sell in the lunch time rush. The standard procedure is to make sure the sandwiches are sold within 4 hours of preparation (validated as per the 2-hour/4-hour rule, see Appendix 2). At the 4-hour time point, any remaining sandwiches are removed from the counter and disposed of. Using this method, staff know the potentially hazardous food they serve is safe for customers to eat. They will also be able to explain to an authorised officer what is the usual time the sandwiches are placed on the counter, and by what time any unsold sandwiches are disposed of (i.e. as soon as the food has been out of refrigeration for 4 hours). Further examples of the 2-hour/4-hour rule are in Appendix 2.

2. Transporting potentially hazardous food safely using time

Standard 3.2.2-10(b) requires all potentially hazardous food to be transported under temperature control. This means keeping cold food at 5°C or below, hot food at 60°C or above, or using a time period that does not make the food unsafe.

A takeaway shop decides to deliver hot takeaway meals using time as a control, rather than temperature. The shop cooks the meals, puts them in an insulated bag and gives them to the delivery driver within 10 minutes of cooking. The meals are only delivered within 5 kilometres of the shop (no more than 20 minutes by car). The business has a map showing the 5km delivery radius. All delivery drivers and those collecting phone orders are aware of this process and follow it for every order.

In this way the business can be sure all potentially hazardous food is safely delivered within 30 minutes of cooking. If an authorised officer requests, the business can show the map and explain how staff follow the timeline from ordering to delivery.

3. Cleaning and sanitising procedure

A food business does not have a dishwasher for cleaning and sanitising, so all food contact surfaces are cleaned and sanitised using detergent, water and a food-grade chemical sanitiser. The business already has an established validated procedure for cleaning and sanitising using chemicals, which all staff doing the cleaning and sanitising are aware of, but this procedure is not documented.

The business writes down their procedure, laminates it and places it in the dish-washing area. The procedure includes what needs to be cleaned and sanitised and when, what chemicals are to be used and how, and the steps for cleaning and sanitising. The food safety supervisor runs a session for all existing staff to reinforce the procedure, and all new staff are also trained in this procedure as part of their induction.

3.2.2A—12 (4) For the purposes of this section, the prescribed provisions are the following provisions of Standard 3.2.2:

(a) subclause 5(3); [on temperature control during food receipt]

(b) paragraph 6(2)(a); [on temperature control during food storage]

(c) paragraph 7(1)(b)(ii); [on pathogen reduction during food processing]

(d) subclause 7(2); [on minimising time during food processing]

(e) subclause 7(3); [on cooling food

(f) subclause 7(4); [on reheating food]

(g) paragraph 8(5)(a); [on temperature control during food display]

(h) paragraph 10(b); and [on temperature control during food transport]

(i) clause 20; [on cleaning and sanitising].

The prescribed provisions listed are clauses in Standard 3.2.2 related to handling potentially hazardous food and cleaning and sanitising (as shown in square brackets).

Food can become unsafe if these activities are not correctly managed, so they need to be strictly controlled. The exact clauses of Standard 3.2.2 and what category one businesses need to substantiate (for Standard 3.2.2A) are summarised in Table 1 below.

Corrective actions

If a record identifies an activity or process was not correct (e.g. food was stored at an unsafe temperature because equipment had broken down), the business must take action to address the food safety concern (e.g. discard food, replace or repair the equipment). The action taken should also be recorded to show the food safety issue was addressed.

Useful resources

Templates: Some written templates are provided in Appendix 8 to help businesses in recording food temperatures and cleaning and sanitising activities. This appendix also includes other templates (for pest control and supplier details) businesses may find useful in running their operations. State, territory and council food regulatory agencies also have templates available for free. These forms are not mandatory – businesses can adapt them to suit their needs, or use other forms or formats, as long as the record contains the required information.

Translated information: Translated information is available online for some of the requirements the evidence tool relates to (e.g. Victoria Health Translations).

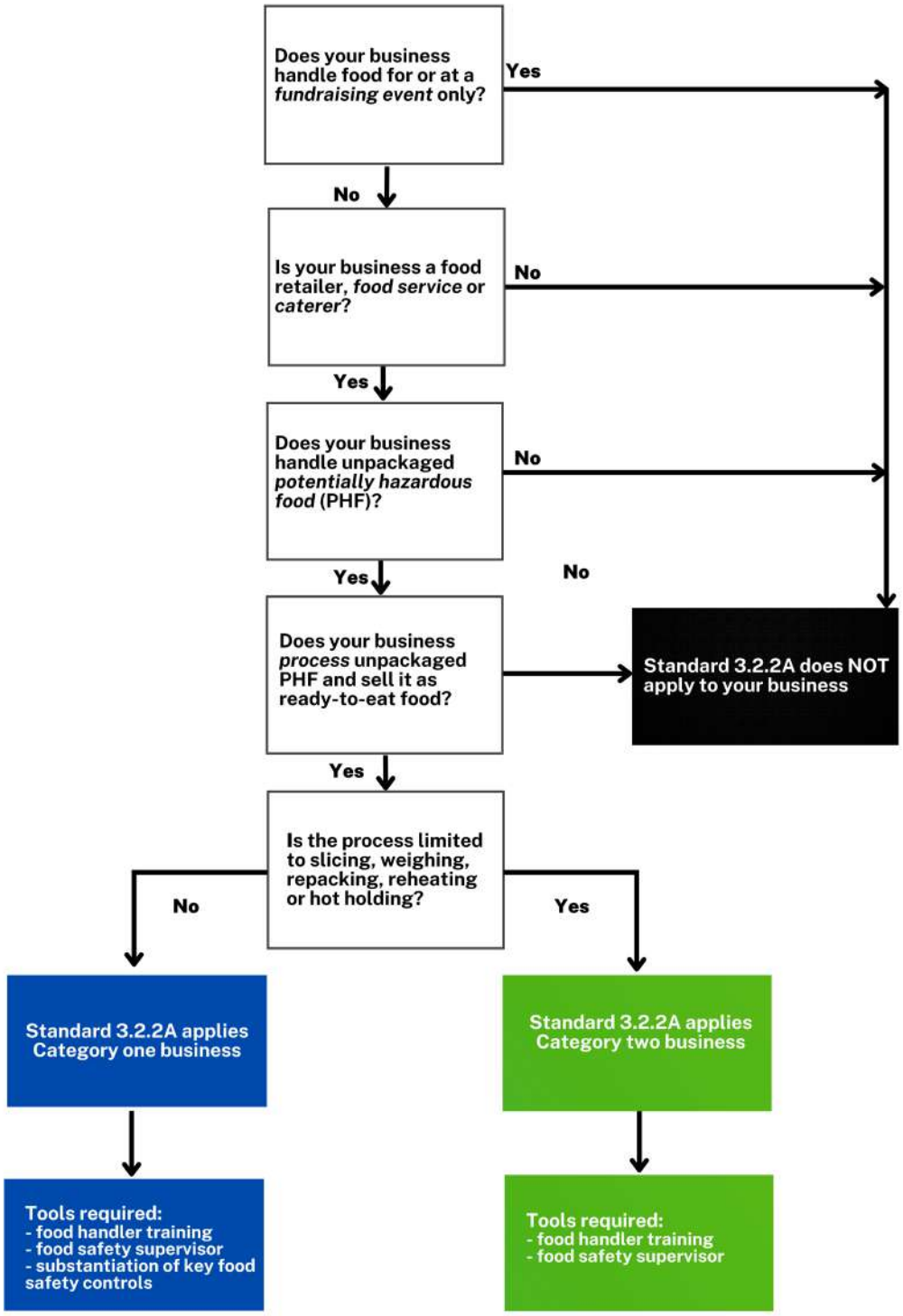
Table 1 – Prescribed provisions and records

Prescribed provisions-Standard 3.2.2 clause	What needs to be shown?	What needs to be recorded?	Suggested frequency
RECEIPT subclause 5(3) A food business must, when receiving potentially hazardous food, take all practicable measures to ensure it only accepts potentially hazardous food that is at a temperature of: (a) 5°C or below; or (b) 60°C or above unless the food business transporting the food demonstrates that the temperature of the food, having regard to the time taken to transport the food, will not adversely affect the microbiological safety of the food.	The temperature of potentially hazardous foods (PHF) when received OR The time arrangement with the supplier showing the food safety has not been adversely affected during food tranport.	Date, food received and food temperature OR the time taken to deliver food.	Each delivery
STORAGE paragraph 6(2)(a) A food business must, when storing potentially hazardous food store it under temperature control.	The temperature of PHF during storage.	The temperature of PHF during storage, date.	Daily
PROCESSING paragraph 7(1)(b)(ii) A food business must, when processing food, where a process step is needed to reduce to safe levels any pathogens that may be present in the food – use a process step that is reasonably known to achieve the microbiological safety of the food.	That a pathogen reduction step (killing or reduction step) has been used on PHF to achieve safety of the food (i.e. destroying pathogens potentially present).	The date and outcome of the pathogen reduction step e.g. • temperature of cooked food • pH of acidified/ fermented food • time & temperature of pasteurised or sous vide food • water activity (a_W) of dried foods.	Per batch or as often as instructed in a standard operating procedure (SOP)
PROCESSING subclause 7(2) A food business must, when processing potentially hazardous food that is not undergoing a pathogen control step, ensure that the time the food remains at temperatures that permit the growth of infectious or toxigenic microorganisms in the food is minimised	The time that ready-to-eat PHF is in the temperature danger zone (between 5°C and 60°C) is minimised and does not make the food unsafe.	The time taken to prepare and then re-refrigerate ready-to-eat PHF or the method used to thaw ready-to-eat PHF, and date.	Per batch and/or as often as instructed in a SOP
COOLING subclause 7(3) A food business must, when cooling cooked potentially hazardous food, cool the food: (a) within two hours – from 60°C to 21°C; and (b) within a further four hours – from 21°C to 5°C unless the food business demonstrates that the cooling process used will not adversely affect the microbiological safety of the food.	That cooked PHF have cooled to prescribed temperatures within the required timeframes.	The time and temperatures of the food during the cooling process i.e. the length of time taken for food to cool from 60°C to 21°C, and the time then taken to cool food from 21°C to 5°C, and date.	Per batch and/or as often as instructed in a SOP

Prescribed provisions-Standard 3.2.2 clause	What needs to be shown?	What needs to be recorded?	Suggested frequency
REHEATING subclause 7(4) A food business must, when reheating previously cooked and cooled potentially hazardous food to hold it hot, use a heat process that rapidly heats the food to a temperature of 60°C or above, unless the food business demonstrates that the heating process used will not adversely affect the microbiological safety of the food.	That cooked and cooled PHFs are re-heated rapidly (within 2 hours) to 60°C or above.	The length of time taken to reheat the food and the temperature the food is reheated to, and date.	Per batch and/or as often as instructed in a SOP
DISPLAY paragraph 8(5)(a) A food business must, when displaying potentially hazardous food display it under temperature control.	That PHF is displayed at 5°C or below; or 60°C or above, or total time out of temperature control does not exceed 4 hours (2 hr/4 hr rule, see Appendix 2).	The temperature of PHF on display or the length of time foods are on display, and date.	Daily or as often as in-structed in a SOP
TRANSPORT paragraph 10(b) A food business must, when transporting food trans-port potentially hazardous food under temperature control.	That PHF are transported at 5°C or be-low; or 60°C or above, or total time out of temperature control does not exceed 4 hours (2 hr/4 hr rule, see Appendix 2).	The temperature of PHF transported or the length of time food is trans-ported for, date.	Daily or as often as in-structed in a SOP
CLEANING AND SANITISING clause 20 (1) A food business must ensure the following equip-ment is in a clean and sanitary condition in the circum-stances set out below- eating and drinking utensils - immediately before each use; and (b) the food contact surfaces of equipment - whenever food that will come into contact with the surface is likely to be contaminated.	That eating and drinking utensils and food contact surfaces have been cleaned and sanitised when required.	If using heat, the temperature the water reaches to sanitise the surfac-es, date If using chemicals, how and when the chemicals are used to sanitise the food contact surfaces, date. If using a commercial dishwasher, the setting recommended by the manu-facturer for sanitising.	Daily or as often as in-structed in a SOP

Attachment 1: Decision tree for Standard 3.2.2A

A business's classification as category one or category two depends on their activities with unpackaged food that is both ready to eat and potentially hazardous food.



NOTES to Decision tree for Standard 3.2.2A

If a business engages in activities of both category one and category two, then category one requirements apply.

Caterer is a person, establishment or institution (for example, a catering establishment, a restaurant, a canteen, a school, or a hospital) which handles or offers food for immediate consumption.

Food service means a food business which processes and serves ready-to-eat food direct to a consumer, whether consumed at the food premises or elsewhere.

Fund raising event means an event that raises funds solely for a community or charitable cause and not for personal financial gain.

Handling of food includes making, producing collecting, extracting, processing, storing, transporting, delivering, preparing, treating, preserving, packing, cooking, thawing, serving and displaying food.

Potentially hazardous food means food that has to be kept at certain temperatures to minimise the growth of any pathogenic microorganisms that may be present in the food or prevent the formation of toxins in the food.

Process means activity conducted to prepare food for sale and includes chopping, cooking, drying, fermenting, heating, thawing and washing, or a combination of these activities.

Ready-to-eat food means food that is ordinarily consumed in the same state as that in which it is sold but does not include nuts in the shell; whole raw fruits; or vegetables that are intended for hulling, peeling or washing by the consumer.

Attachment 2: Keeping evidence of food safety management

The following scenarios are provided for information on how the evidence tool of Standard 3.2.2A is expected to be implemented by a Category 1 business. The examples illustrate 'a day in the life' of a business, to explain the sorts of records or other evidence a business could use to substantiate their key (prescribed) activities are being properly managed.

These are examples only and do not cover all of the business types and activities that are covered by Standard 3.2.2A.

1. A bakery or café that makes and retails its own products

Food storage – A staff member arrives on site and before starting any preparation for the day, checks the temperature of the food in the refrigerator and/or checks the temperature of the refrigerator (if a calibrated gauge is used). The food in the freezer is also checked to make sure it is still hard frozen. These checks ensure that any potentially hazardous food (PHF) being used for the day has been stored correctly under temperature control overnight and the food is safe to use. The food temperature is recorded on the business's daily temperature record sheet. The bain marie used for chilling is turned on, so it will be cold before placing food items in later that morning.

Cleaning and sanitising of specific equipment – The staff member checks that the equipment being used for preparation and service is clean and has been stored to prevent contamination. The benches are sanitised before food preparation begins. This may be part of the cleaning instructions and schedule.

Food receipt – The staff member regularly checks for new deliveries of ordered food. When a delivery arrives, they wash their hands and sanitise the temperature probe. The delivery contains both dry goods and PHF. The PHF is checked first for labelling and any damage to packaging or potential contamination, then the staff member takes the temperature to ensure it is received under temperature control. A temperature infra-red gun may be used to check surface temperature, or a probe placed between two packaged units (e.g. cryovac meat packets). Once the PHF has been checked, it is immediately placed into the cool room/ refrigerator or freezer. Once the PHF is checked, the temperature and product name are recorded on the daily temperature sheet.

If this staff member picks up food from the supermarket on the way to the café, they could either check the food temperature on arriving at the café (e.g. if transported in cooler bags with ice packs) or manage food safety using time as a control. A standard operating procedure (SOP) could describe this in relation to food being out of refrigeration for less than 2 hours.

Food storage – The staff member then stocks the bain marie with sandwich ingredients from the refrigerator. The temperature of the food in the bain marie is checked intermittently, to ensure the equipment is maintaining correct temperature. The food temperature is then recorded on their daily temperature record sheet. Alternatively, the time the food is put into the bain marie is noted, and either:

- the food is checked at 2 hours to ensure it is still 5°C or colder
- the food is placed back into the refrigerator at 2 hours for future use, or
- the food is discarded at the end of 4 hours, as per the 2-hour/ 4-hour rule (more information on this rule is in Appendix 2).

Minimising processing time – The time that food is brought out of the refrigerator, and the time it is placed back into refrigeration or discarded can be recorded. Alternatively, a SOP that shows the process for the bain marie with food temperature/time checks can be used. An authorised officer can observe this process is in line with the SOP and ask questions to confirm understanding, then temperatures and time may not need to be recorded routinely.

Processing to achieve microbiological safety of food – Raw chicken and vegetables are cooked on-site to be cut up and used for sandwiches. The core temperature of the cooked food is checked to ensure it is 75°C or hotter, and the temperature recorded.

Food cooling – If the food cooked on the day is all consumed within 4 hours or discarded, then cooling does not have to be monitored. If some of the cooked chicken and roast vegetables are cooled for use later in the day, or for the next day, cooling must be monitored. Cooling temperatures can be checked and recorded, or a SOP can be used that shows the standard process for cooling with food temperature/time checks. The authorised officer can observe this process is in line with the SOP and ask questions to confirm understanding. Temperatures and time would then not need to be recorded routinely. If, for example, rice is cooled using ice water, a temperature record is not required, as this is a standard process known to rapidly chill grains. The authorised officer may ask the staff member how it is cooled, to ensure it is meeting cooling requirements.

Food reheating – If the business does not reheat any foods to hold hot, no record is needed. If this business uses a pie warmer to keep pastry items warm for service, reheating must be monitored. The products are reheated before placing in the pie warmer. The pie is checked to make sure it is at least 60°C and the temperature is recorded. As this is a very common practice, it can also be demonstrated by a SOP. The authorised officer can check the temperature of the pies in the pie warmer and observe this process is in line with procedure, or ask questions to confirm understanding, then temperatures may not need to be recorded routinely.

If the business only reheats food for immediate service (e.g. takes the pie from the refrigerator and reheats it in an air fryer for 5 minutes), documenting the temperature is not required, as it is not being hot held.

Food display – For making and directly serving sandwiches, temperature records would not be required. If sandwiches were made in advance, time or temperature would need to be monitored and recorded, or a SOP used.

Food transport – This business does not transport food, so this does not need to be monitored. If the business decided to be a caterer or, for example, sell food to a local school canteen, time or temperature would need to be monitored and recorded, or a SOP used.

Cleaning and sanitising – Evidence made for this may be a schedule, listing food contact surfaces and equipment to clean and sanitise, which is ticked as the task is completed. It may also include instructions for the chemicals to be used and the process for cleaning and sanitising. This could also include recording the temperature of the dishwasher during operation once per week.

2. An off-site catering business

Food receipt – The caterer either picks up food from the supermarket, has delivery from a supermarket, or receives food from a distributor. The same process applies as for the above example.

Food storage – The process is also the same as the above example. The temperature of food (or water in a jar) in the cool room and/or refrigerator is checked for temperature control and recorded. If this caterer is quite large, they may also decide to have the cool room/refrigerator monitored by a calibrated data logger or alarm. They do not have to record the temperature monitoring daily but should check that the readings are correct and can show this readout to the authorised officer upon request.

Achieving microbiological safety of food – The caterer cooks chicken and beef, sous vide in a water bath. The caterer must be able to demonstrate that they know the time and temperature requirements relative to the thickness of the meat to ensure the food is safe (e.g. 65°C for 90 minutes may be the time required to cook a 4cm-thick slice of beef). The batch, food thickness and heating/cooking time should be recorded.

The caterer also cooks trays of chicken Kievs in the oven. The largest Kiev should be checked to ensure it is cooked thoroughly to the core, and its internal temperature recorded.

Minimising processing time – The caterer prepares bulk sandwiches and also slices the sous vide meat to be used at an event the next day. They have a process where they bring the sandwich ingredients and cooked meat out of the refrigerator for 1 hour, and after two trays have been prepared, put that batch of sandwiches in the refrigerator before starting on the next two trays. They repeat this process until all the ingredients are used or the 1 hour is reached, and they place the ingredients back in the refrigerator. A SOP could be developed for this and confirmed by the authorised officer on site. Otherwise, the time the ingredients come out of the refrigerator, and the time they are used up, or put back in, could be recorded. Alternatively, the business has a chilled bain marie to hold their ingredients at or below 5°C.

Food cooling – Food is cooked by this caterer the day before the event. Cooling requirements would be similar to the café (above), with either the largest food volume monitored and recorded for each batch, or a SOP could be used where the size, food type and process is consistent and temperatures previously validated.

Food reheating – The caterer reheats the sliced sous vide chicken and places it in a hot bain marie for plating and service. The temperature of the chicken is checked to make sure it is 60°C or above. This food is all plated, served and consumed within 1.5 hours. If the food was not consumed within 2 hours, the temperature of the chicken would be rechecked and recorded to ensure it was being held under temperature control.

Food display – This caterer does not display food at every event, although on some occasions it will provide a self-serve option for the client, where bain marie equipment is available. Requirements are similar to above. For example, if the food was not consumed within 2 hours, the temperature of the chicken would be rechecked and recorded to ensure it was being held under temperature control.

Food transport – This caterer has a refrigerated delivery van to transport the food at 5°C. The caterer should record the temperature of the food in the van. The caterer also uses a non-refrigerated van when they have large events. Food safety is maintained by packaging food in an insulated cooler or ensuring time out of refrigeration is minimised. The temperature of the food on delivery to the event should be checked and recorded, or time recorded if the event was less than 2 hours drive.

Cleaning and sanitising – Evidence kept for this may be a schedule listing food contact surfaces and equipment to clean and sanitise, which is ticked as the task is completed. It may also include instructions of the chemicals to be used (contact time, dilution, rinse or no rinse, etc.) and the process for cleaning and sanitising. This could also include recording a temperature of the dishwasher during operation once per week. Cleaning and sanitising of equipment at the venue may also need to be considered for this caterer.

STANDARD 3.2.3
FOOD PREMISES AND EQUIPMENT

STANDARD 3.2.3
FOOD PREMISES AND EQUIPMENT

Division 1 — Interpretation and application

1 Interpretation

This clause includes definitions applicable to this standard only. Definitions that apply to more than one of the standards are specified in Standard 3.1.1. Standards 1.1.1 and 1.1.2 also provide definitions of terms used throughout the Code.

Definitions

In this Standard —

adequate supply of water means potable water that is available at a volume, pressure and temperature that is adequate for the purposes for which the water is used.

The term is used in clauses 4 and 13.

potable water means water that is acceptable for human consumption.

Where there is doubt as to the acceptability of a particular water supply, reference should be made to the *Australian Drinking Water Guidelines 2011* (NHMRC and NRMMC 2011) as updated.

The term is used in clauses 4 and 14.

sanitise means to apply heat or chemicals, heat and chemicals, or other processes, to a surface so that the number of microorganisms on the surface is reduced to a level that:

(a) does not compromise the safety of food with which it may come into contact; and

(b) does not permit the transmission of infectious disease.

The definition makes it clear that businesses may use one or a combination of methods to sanitise. See the discussion under Standard 3.2.2, paragraph 20(2)(b).

The word is used in clauses 3, 9, 12, 13 and 17.

sewage includes the discharge from toilets, urinals, basins, showers, sinks and dishwashers, whether discharged through sewers or by other means.

The definition covers all waste water, whether or not it drains to a sewer, septic tank, vehicle tank or other disposal system.

The term is used in clauses 5 and 13.

2 Application of this standard

2(1) This Standard applies to all food businesses in Australia in accordance with Standard 3.1.1 (Interpretation and Application).

2(2) A food business may only use food premises and food transport vehicles that comply with this Standard.

2(3) A food business may only use equipment, fixtures and fittings in or on food premises and in or on food transport vehicles that comply with this Standard.

The standard applies to all food premises, food transport vehicles and associated equipment, fixtures and fittings used by food businesses (as per definitions in Standard 3.1.1 clause 1). It applies to existing premises, new premises, domestic premises used for commercial purposes, temporary premises and mobile premises. Obligations on food businesses are the same regardless of the type of premises, except for exemptions that may be granted under specific clauses (e.g. domestic and temporary premises may be granted exemptions regarding hand washing facilities).

There is no prescribed list of specifications for the design and construction of food premises, equipment, fixtures or fittings to meet the standard. Food operations vary in size and complexity and what is considered appropriate and adequate for a business's food premises and food transport vehicles will depend on the operations. The evaluation of food premises should be based on risks to food safety and suitability and consider the outcomes intended by the standard.

The following documents provide useful guidance:

- Australian Standard AS 4674-2004 *Design, Construction and Fit-Out of Food Premises* provides uniform criteria recommended for food premises.
- The National Construction Code Series Volume 1 (for 2–Class 9 buildings, including commercial buidlings; ABCB 2020 and as updated) outlines provisions for special-purpose buildings, including specifics for individual states and territories in the appendices.
- Various guides on design, construction and fit-outs for different types of food premises have been developed by states and territories (refer to food regulator websites in Resources and References).
- Appendices in this document contain collated information on requirements for temporary and mobile premises (Appendix 9) and for home-based businesses (Appendix 10).

When preparing plans for any new food premises, or alterations to existing premises, advice should be sought from the appropriate government agency responsible for food safety (i.e. local council/government authority) to avoid potential issues.

Division 2 — Design and construction of food premises

3 General requirements

The intended outcome is that food premises are designed and constructed to:

- be appropriate for the purposes for which they are used
- provide adequate space for food production and equipment
- facilitate cleaning, sanitising and maintenance
- prevent access by and harbourage of pests
- keep out dust, dirt, fumes, smoke and other contaminants.

3 The design and construction of food premises must:

(a) be appropriate for the activities for which the premises are used;

The word 'activities' in this clause includes food handling operations (defined in Standard 3.1.1 clause 1) and all associated activities such as storing packaging materials and chemicals, providing access for delivery and garbage vehicles, and storing garbage and recyclable material.

The design and construction of food premises may vary considerably and its appropriateness under this clause will depend on the business's particular food operations. Factors that help make premises suitable as food premises include those listed below.

Layout

The layout of premises can minimise the likelihood of food becoming contaminated through enabling an appropriate flow of activities, providing physical separation of different activities and facilitating cleaning.

To minimise cross contamination, the food flow should ideally be in one direction from receipt ➔ storage ➔ preparation ➔ dispatch/service. If activities are organised so that food is handled in progression without repeatedly crossing back and forth across the layout, this will avoid chances of contamination from, for example, areas where raw meat packages are opened, and areas where the final cooked product is served.

Separation of areas where different activities take place could include, for example:

- physically separating areas where raw products are handled from areas where the final product is dispatched
- separating food preparation areas from wash-up areas, chemical storage areas and garbage areas
- locating entrances, toilets and change rooms so that staff and visitors do not have to cross food preparation areas.

Location of equipment and facilities

Equipment and facilities should be located where staff can readily use them. If this is not practicable, the business should consider the likely impact on food safety and determine whether the situation is acceptable. For example, at a temporary event a coolroom may need to be located some distance from a stall intending to prepare ready-to-eat potentially hazardous food. There is a risk that potentially hazardous food might be left out of temperature control and become unsafe if staff do not have time to walk to the coolroom. In this situation, a solution could be to provide ice boxes on site where potentially hazardous food can be temporarily stored until there is time to place food in the coolroom.

The location of hand washing facilities is covered under clause 14 to ensure such facilities are available and accessible to all food handlers.

Construction standards and materials

The standard of construction should ensure that appropriate food safety and hygiene standards may be maintained by the business, taking into account the food handling activities and permanency of the premises. For example, a stall used once a week at a market may be built of more lightweight materials than permanent premises while still preventing the entry of dust, dirt and pests.

Construction materials should be durable under the conditions they are used for (e.g. canvas would be suitable for a temporary stall but not for a permanent structure).

Construction materials should not pose a risk of tainting or contaminating food with fumes, migrating chemicals, splinters, food debris, etc. Specific clauses in this standard require materials (of walls, ceilings, floors, fixtures, etc.) to be able to be effectively cleaned and, if necessary, sanitised.

Examples

Inappropriate design for food premises

1. The owner of a building proposes to open a basement as a restaurant. Refrigerators, washing facilities and toilets are two storeys above the basement. There is no plumbing or drainage to the basement. The enforcement officer advises the owner that the premises would be inappropriate for this use unless a water supply and connections to the sewer, washing facilities including a hand basin, and refrigeration are provided in the basement.
2. A business is designing a commercial kitchen for preparing and packaging cooked ready-to-eat foods. However, the proposed design is poorly organised because food handlers will need to walk back and forth through several different food handling areas to dispose of waste and to wash their hands. This would present a risk that the ready-to-eat foods will become contaminated with for example, waste or raw meat juices, or from dirty hands touching food packaging. The business is advised to change elements of the kitchen design and/or reorganise its proposed activities so that, for example:

- the flow of activities is one direction from ingredient storage to raw food preparation to food cooking to final packaging
- washing and waste disposal facilities are located where they are actually needed so staff do not have to cross through different areas unnecessarily.

(b) provide adequate space for the activities to be conducted on the food premises and for the fixtures, fittings and equipment used for those activities;

'Equipment' is defined (3.1.1 Interpretation) and includes, for example, washbasins, stoves, food-processing equipment, refrigerators, garbage containers and hot water services. The terms 'fixtures' and 'fittings' take their dictionary definitions and broadly include benches, shelves, sinks, cupboards, lights, garbage chutes, conveyors and ventilation ducts.

The amount of space a food business needs will depend on the complexity of its operations, including the volume and type of food it handles and the number of staff on site. Space needed for activities such as receiving, preparing and dispatching food as well as cleaning and sanitising should be considered. In addition to space for equipment, fittings and fixtures, storage space is usually needed for food, packaging, utensils, staff belongings, garbage and so on.

'Adequate' space

The space should be sufficient to allow all activities to be conducted without compromising food safety. Factors that could be considered include, for example:

- space to separate food handling activities to prevent cross-contamination — e.g. sufficient bench space/table area for work flow so that, for the volume of food being handled, prepared ready-to-eat foods are separated from raw foods and ingredients

- space to safely store ingredients, food packaging and other raw materials — e.g. sufficient cupboards, refrigerators, secure storage areas for the scale of operations
- storage space for recalled product to be kept separate from product for sale
- the need to install/accommodate additional equipment to prevent cross-contamination — e.g. separate food preparation sinks may be needed for preparing raw foods separately to washing of ready-to-eat salad ingredients
- staff numbers and protective clothing requirements — e.g. changing room space may be needed
- cleaning — e.g. there should be enough space to manoeuvre the cleaning equipment, to access areas for cleaning and to store cleaning chemicals, etc.
- quantity and type of garbage and recyclable material produced — e.g. space for appropriate garbage containment and access for garbage removal
- water requirements — e.g. sufficient space for hot water storage (and cold water if there is no mains supply)
- sewage disposal — e.g. adequate space for equipment if on-site storage and/or disposal is necessary.

Appendix 9 contains some information specific to temporary and mobile premises.

Example

Inadequate space for safely storing food

A small café expands its activities to operate a catering service. Sandwiches and salads are made early each morning for delivery later in the day to various local businesses. An increase in business means there may be insufficient space in the coolroom to store potentially hazardous sandwich fillings and ready-to-eat salads. If these foods are not kept under temperature control, foodborne pathogens may grow to dangerous levels.

The business should have adequate space for the activities it conducts. If there is insufficient space for the additional refrigeration required for its catering service, the café should come up with suitable alternative arrangements, which may include limiting the catering service.

(c) permit the food premises to be effectively cleaned and, if necessary, sanitised; and

Premises that are designed and constructed so that they can be effectively cleaned and sanitised are easier to clean and so more likely to be kept clean, providing fewer opportunities for food to become contaminated.

Cleaning

'Clean' is defined in Standard 3.1.1 clause 1. Under Standard 3.2.2 clause 19 the business must keep the food premises clean, so there is no accumulation of garbage or recycled matter (except in containers), food waste, dirt, grease or other visible matter.

Features that could affect whether food premises can be effectively cleaned include:

- ducts, fans, etc. with access covers — covers can be removed to allow cleaning
- horizontal ledges created by pipe runs, windowsills, picture rails, etc. — can potentially trap dirt
- concealment of, or dust covers provided for pipes, ducts, conduits, wiring and similar fittings in walls, floors or ceilings — allows for easier cleaning of these surfaces
- width of doorways and passages and height of gaps under benches, etc. — should be sufficient to allow the cleaning equipment that is intended to be used (e.g. electric foaming machines) to be used effectively
- texture (e.g. rendered, rough timber, exposed brick) of walls, floors, ceilings and other surfaces in areas where exposed food is handled — should be able to be effectively cleaned with intended cleaning methods
- moveable equipment — moving or dismantling equipment enables the areas behind, around and underneath to be more easily cleaned.

Sanitising

'Sanitise' is defined in clause 1 of this standard. Businesses need to ensure that the surfaces they sanitise are designed and constructed to withstand the effects of sanitising hot water or chemicals. Note that most non-food contact surfaces are required to be clean and not sanitised.

(d) to the extent that is practicable:

(i) exclude dirt, dust, fumes, smoke and other contaminants;

'Contaminant' is defined in Standard 3.1.1 clause 1 and includes any matter carried by people, materials or air that could compromise food safety or suitability.

To prevent contamination of food or food contact surfaces, the design and construction of food premises should exclude contaminants, including dirt, dust, fumes and smoke. The premises' design and construction should be considered bearing in mind likely contaminants, the types of food being handled, handling methods and movement of staff and products. Particular attention should be paid to areas where unpackaged foods and ready-to-eat foods are handled, as these foods are more vulnerable to contamination.

'Practicable' design and construction

The business is only required to exclude contaminants to the extent that is practicable. The clause recognises that there may be situations where dirt and dust are unavoidable. For example, at an open-air market stall it may be impracticable to dust proof the premises itself and more appropriate to protect the food from contamination by directly covering it using plastic wrap, lidded containers, mesh or other covers.

Practicable design and construction aspects that exclude dirt, fumes and other contaminants could include, for example:

- layout that separates areas that may generate airborne contamination from areas where exposed food is handled (e.g. locating loading docks and cooling units away from food preparation and packaging areas) — note that clause 12(2) requires that fixtures, fittings and equipment do not cause food contamination
- close-fitting doors and mesh screens on doors, windows and other openings to prevent dust and dirt blowing through
- double doors or positive air curtains at entrances where contaminants may enter
- air intakes for ventilation systems positioned so that they do not draw in contaminated air
- airlocks or self-closing doors to separate areas handling exposed food from toilet areas, laundries and living areas
- mechanical ventilation to remove possible airborne contamination on the premises to areas not used for food preparation
- secure storage facilities for items that may be sources of contaminants, such as clothing, cleaning chemicals, etc. (see also clause 15).

Open-plan food premises

Food premises constructed with open shopfront designs, outdoor eateries and open-plan kitchen and dining areas are by their nature more exposed to contaminants carried by air, people, or animals. Businesses with these types of premises could minimise opportunities for contaminant entry by, for example:

- facing open sides away from prevailing winds, nearby toilets or garbage areas to prevent entry of airborne contaminants
- ensuring the ground is sealed or covered to prevent contact with dirt and dust
- sheltering or enclosing food preparation areas from draughts
- using barriers to restrict access to food preparation areas by passing customers and animals
- using positive air curtains at openings
- covering holes or gaps (e.g. using filling material around pipes coming through walls)
- providing protective shields and holding units (e.g. display cabinets) for exposed food.

(ii) not permit the entry of pests; and

'Pests' is defined in Standard 3.1.1 clause 1. Pests can transmit spoilage and pathogenic microorganisms, damage food and food packaging and directly contaminate food.

The business is only obliged to exclude pests to the extent that it is practicable. For example, it might not be possible to prevent the occasional fly coming in or to avoid bringing pests onto the premises in prepacked goods.

Design and construction elements a business could use to prevent pest entry could include, for example:

- flyscreen doors, self-closing doors and doors with weather strips
- mesh screens on windows or other openings

- sealed drains, grease traps and ventilation pipes
- sealed openings where pipes pass through external walls
- covered containers for food scraps and other waste.

(iii) not provide harbourage for pests.

The premises should be designed and constructed so as not to create spaces where pests can nest and multiply. Pests are generally attracted to dark cool and undisturbed spaces near a food source. Where practicable, such areas should not be created in the first place, or should be removed for example by sealing them up. If these options are not practicable, the area should be opened up or provided with access for inspection, cleaning and pest control.

Clauses 10, 11 and 12 specifically require that floors, walls, ceilings, fixtures, fittings and equipment are unable to provide pest harbourage.

4 Water supply

The intended outcomes are that potable water is available for activities including washing food, cooking, making ice, cleaning, sanitising and personal hygiene, and that non-potable water is used only where it will not affect food safety.

4(1) Food premises must have an adequate supply of water if water is to be used at the food premises for any of the activities conducted on the food premises.

An 'adequate supply of water' means potable water that is available at a volume, pressure and temperature that sufficiently serves the purposes for which the water is used by the business. Factors to be considered include the food handling operations of the business, cleaning and sanitising operations, hours of operation and requirements during peak periods.

Temperature

Although the standard does not specify water temperatures for particular activities, the following factors should be considered:

- Hand washing facilities are generally required to have warm water (usually considered as 20°C–40°C) — see clause 14.
- For cleaning and sanitising activities:
  - » using hot or warm water for cleaning is likely to be more effective than cold water because the heat helps remove grease and fats. Some cleaning chemicals need to be used with water at certain temperatures (refer to manufacturer's instructions)
  - » dishwashers and similar machines may need water supplied at specified temperatures to operate the wash or rinse cycle, particularly if used for sanitising — the machine's operating instructions should provide details (Appendix 6 has more information on dishwashers)
  - » for manual sanitation using hot water, a minimum temperature of 77°C for at least 30 seconds (as per US Food Code 2013) or equivalent is recommended
  - » some sanitising chemicals need to be used with water at certain temperatures

(refer to manufacturer's instructions, e.g. see Appendix 6 on the use of bleach).

- For other activities: The requirement for water at adequate temperatures applies to all activities at the food premises. If the correct operation of cooking, food washing or other food processing equipment is dependent on water being supplied to that equipment at certain temperatures, the business must have a water system capable of supplying that water.

Where warm water is needed, it may be supplied as a mixture of hot and cold water, or water heated by an element or other means.

Example

Sanitising utensils

A café serves hot drinks, sandwiches and cakes using returnable cups, saucers, plates and cutlery. The café currently has a hot water system capable of delivering water at a maximum of 60°C, which is not hot enough for effective manual sanitation.

To be able to sanitise items effectively, the proprietor has the options of:

- using a chemical sanitiser for eating and drinking utensils and other items that require sanitising such as large mixing bowls, chopping boards etc.
- installing a hot water system, sink element or other method to heat and maintain water at 77°C for at least 30 seconds (or equivalent time and temperature) — items can then be sanitised by submerging them in the hot water using a rinsing basket
- installing a dishwasher capable of sanitising
- using disposable cups, plates and other utensils and discarding them after use instead of sanitising and reusing items.

Capacity (volume and pressure)

The hot and cold water systems must have sufficient capacity to enable the business to operate properly, including during its peak hours.

Businesses in areas where supplies are limited will have to ensure that water availability, pressure or volume does not limit the business's ability to carry out food operations and cleaning and sanitising.

Factors that may need to be considered related to water capacity include:

- the number of appliances that have to be supplied with water (including any that are used in conjunction with the premises, such as showers)
- peak hot and cold water usage for different applications (e.g. cleaning, sanitising, washing food, adding as an ingredient and processing food)
- required temperature of water in the tank
- length and size of pipe runs to appliances
- recovery rate of water heaters
- manufacturers' specifications for water requirements for appliances

- pressure requirements of equipment such as dishwashers.

Advice on specific issues regarding water supply may be sought from the local council and/or water authority.

Mobile and temporary premises

The water supply requirements apply to all food business including mobile and temporary food premises.

Mobile premises not connected to reticulated (piped) supplies must be fitted with water storage tanks that provide an adequate water supply for the period of trading between opportunities for refilling. Similarly, temporary premises such as market stalls must have tanks or other containers for clean water storage if there is no piped or hose supply from a reticulated system. See 4(2) below for further information related to water storage tanks.

The volume of water needed will depend on the number of people, the amount of food being handled and the type of activities being conducted on the premises. As an indication, guidance provided by states and territories recommends access to a minimum of 20-25 litres per day for each activity (e.g. for hand washing and for utensil/equipment washing).

Appendix 9 contains collated information for these types of premises.

4(2) Subject to subclause (3), a food business must use potable water for all activities that use water that are conducted on the food premises.

'Potable water' is defined in clause 1. The water must be safe to drink and not introduce contaminants into food (as an ingredient or through washing food or other processing activities). The water must be safe to use for cleaning and sanitising processes, and hand washing. Ice must only be made with potable water.

The following documents provide useful guidance:

- Australian Drinking Water Guidelines — comprehensive guidance including guideline values for chemicals, microorganisms, turbidity, pH, etc. to be met for water of potable quality (summarised in Tables 10.4 and 10.5), testing procedures and water treatments (e.g. disinfection, filtration) (NHMRC and NRMMC, 2011 and as updated).
- Guidance on the Use of Rainwater Tanks — information on potential hazards in rainwater, preventative measures to minimise contamination, construction materials, etc. (Australian Government Department of Health and Aged Care 2010).
- See regulatory agency websites (e.g. Water Supply Safety on Victoria's Food business information website, NSW's Private Water Supply Guidelines)
- For ice production, see Packaged Ice Association of Australasia's *Code of Practice*.

Town water (reticulated) supplies

Businesses using a treated town water supply do not usually need to take extra steps to ensure the water is potable unless the supply authority has specifically recommended further treatment.

Other water supplies

Businesses using untreated water or non-reticulated water supplies (e.g. rainwater tanks, bores dams, rivers) may need to have the water tested and treated to ensure it is suitable for use.

Untreated or non-reticulated water could be unsafe for consumption, depending on its source, due to:

- pathogens such as *Giardia, Cryptosporidium, Legionella, Campylobacter, Salmonella* and norovirus
- harmful chemicals such as pesticides or heavy metals
- physical parameters such as its acidity and turbidity.

Sources of water contamination include animals and their faeces (e.g. livestock or bird droppings), soil, insects, septic systems, landfills, paints, toxic plants and air pollutants. While taking preventative measures can minimise sources of contamination (see points under *Water storage tanks* below), corrective steps, such as treating the water may be needed.

Treatments to remove contaminants include boiling, chlorination, filtration and ultraviolet light irradiation. The treatment needed may vary depending on the type and level of contaminants present, the water's volume and flow and other factors. Technical expertise may be needed to effectively treat water to make it potable. Advice could be sought from local water authorities and the guidance documents listed above.

Commercially carted water

Businesses using or supplying commercially carted water should ensure that the water supply is potable; for example by providing evidence of authorisation from an appropriate authority, proof that the tankers are suitable for carrying drinking water (e.g. made of food-grade material and not used to carry other materials that would contaminate drinking water), or a record of water chlorination.

Recycled water

As for any water supply, recycled water used on the food premises must be potable unless the business can demonstrate its use will not affect the safety of the food (see subclause 4(3) below). Depending on its source, recycled water is likely to contain hazards such as pathogens and harmful chemicals that need to be removed so that they do not contaminate food or food contact surfaces. Water testing and treatment may be needed to make the water suitable.

Repeatedly using the same water many times, for example for washing food or dirty dishes, is likely to result in decreasing water quality (e.g. from a buildup of food particles or pesticides) and may pose a risk to food safety.

Water storage tanks

To prevent water contamination, water storage tanks must be adequately designed, constructed and maintained. Subclause 12(2)(a) also requires that all fixtures, fittings and equipment have no likelihood of causing food contamination.

Factors to consider on the use of water storage tanks include:

- To prevent chemicals leaching into the water, tanks should be made of material suitable for use with potable water (e.g. standard galvanised steel, fibreglass, food-grade plastic and concrete are generally suitable but uncoated lead flashing and preservative-treated wood are generally not suitable). Where tanks are used to collect and store rainwater, the roofs, gutters or other surfaces that collect the water should be suitable for use with potable water or water may need to be treated.
- To prevent contamination by animals, insects, leaves, dirt, droppings and other debris tanks should be securely covered and inlets, outlets and overflows should be screened or covered with guards. Outlets should face downwards to prevent things dropping in.
- To ensure there is no buildup of contaminants from sludge or the contaminant sources mentioned above, the tank and associated system (e.g. pipes, roofs, gutters, outlets, filters, screens) should be regularly inspected and cleaned. Installing first flush devices or discarding the initial flush of water through downpipes may help reduce the amount of debris accumulation.
- To ensure breakages in the tank and associated system do not introduce contaminants, the whole system should be well maintained including repair of any breakages.
- Where it is known or suspected that the water is not potable (e.g. droppings found in the water, or the tank is made of non-food-grade material), the water should be treated as necessary to remove contaminants and not used until confirmed to be acceptable for human consumption.

4(3) If a food business demonstrates that the use of non-potable water for a purpose will not adversely affect the safety of the food handled by the food business, the food business may use non-potable water for that purpose.

Businesses may use non-potable water provided they can demonstrate to the appropriate food regulatory agency that the quality of the water and its intended use will not affect food safety. Evidence may include the reasons why the water is non-potable and the systems in place to ensure that the water will not contaminate food or equipment that comes in contact with food on the premises.

Examples of uses that may be appropriate for non-potable water include refrigeration equipment, fire-fighting and certain cleaning activities (e.g. AS 4674-2004 states that non-potable water may be used for cleaning garbage areas). Use of seawater for specific purposes in seafood production is described in Standard 4.2.1 — Primary Production and Processing Standard for Seafood.

If a food business uses any non-potable water supplies, there must be no cross-connections between potable and non-potable water supplies, to prevent contamination of the potable water.

To avoid the wrong water being used for food handling activities, any pipes or taps connected to a non-potable supply should be clearly identified (required by AS 4674-2004). Note that Standard 3.2.3 subclause 12 requires fixtures, fittings and equipment to be designed so that there is no likelihood they will cause food contamination.

5 Sewage and waste water disposal

The intended outcomes are that sewage and waste water are disposed of effectively and there is no contamination of food or the water supply from the disposal system.

The requirement applies to all sewage and waste liquid produced by the business, including waste from cleaning and cooking processes, toilets and stormwater. Solid waste is covered under clause 6.

Liquid waste is likely to contain pathogenic organisms, particularly the waste from toilets, personal washing and water contaminated by blood or soil (e.g. from washing food, cutting boards, etc.). To prevent contamination of the premises, equipment and food with such waste, the disposal system used by the business must completely remove it without endangering food safety.

5 Food premises must have a sewage and waste water disposal system that

'Disposal system' means a system that removes the waste from buildings, vehicles and stalls, and from the curtilage of the premises (that is, the land where the building, vehicle or stall is situated) that is within the control of the food business. This includes drains and sewers, holding tanks, grease arrestors and on-site treatment plants for sewage, waste water and stormwater.

(a) will effectively dispose of all sewage and waste water; and

For disposal to be effective, all sewage and waste water must be:

- conveyed from all buildings on the site so as not to cause ponding or backflow into the building
- disposed of in a way that does not jeopardise food safety on-site
- both on-site and off-site, disposed of in accordance with statutory requirements (including environmental requirements).

(b) is constructed and located so that there is no likelihood of the sewage and waste water polluting the water supply or contaminating food.

Drainage pipes, grease arrestors, drain inlets and access openings, and on-site sewage treatment plants must be located where there is no risk of them contaminating the water supply or food. For example, grease arrestors located in food preparation areas can result in contamination problems when the arrestors are emptied. It is recommended that grease arrestors are located away from areas where food, equipment or packaging materials are handled or stored and preferably located outside the building.

The standard of workmanship overall must ensure that the disposal system is not likely to leak, block, overflow or allow access by vermin into the food premises.

Temporary and mobile premises

The requirement applies equally to temporary and mobile premises:

- Where there is no connection to a mains system, temporary holding tanks and any associated pipes must be properly constructed so there is no likelihood of waste contaminating the water supply or food (e.g. be leak proof).
- Emptying disposal tanks or containers must be done in a way that ensures there is no risk of food or water supplies becoming contaminated during the emptying process. Waste liquid should never be disposed of by simply pouring it on the ground.
- To prevent contamination problems from overflowing containers placed under sinks or basin outlets, these containers should be emptied regularly.
- Sites set aside for stalls and mobile premises at show grounds, markets or similar events should not be located near sullage pits, soakaways or holding tanks because of the risk of food or water becoming contaminated from these disposal systems.
- Where temporary toilets and hand washing facilities are provided by the food business at an event, the business must ensure that disposal arrangements meet the requirements of the clause. For example, arrangements to empty holding tanks must not result in a food safety problem that could occur if pump-out pipes cross food preparation areas.

Appendix 9 contains collated information for these types of premises.

6 Storage of garbage and recyclable matter

The intended outcomes are that storage facilities for garbage and recyclable matter:

- are suitable for the volume and types of garbage and recyclable material produced by the food business
- do not provide a breeding ground for pests
- are able to be easily and effectively cleaned.

This broad requirement applies to all types of food premises and the garbage and recyclable material produced on site.

Businesses should check whether state/territory or local requirements under building, environmental or other laws apply to their garbage and recyclable material (e.g. for bunding drums of oil).

6 Food premises must have facilities for the storage of garbage and recyclable matter that:

'Facilities' is intended to include all the areas and equipment used in connection with garbage and recyclable material storage. It includes:

- outside storage areas where bins are kept
- garbage rooms
- refrigerated garbage rooms

- garbage chutes
- bins, hoppers and other storage containers, whether used outside the buildings or in food handling areas
- compactor systems and the rooms in which they are housed.

'Garbage and recyclable matter' includes food waste and oil, paper, plastics, cardboard, glass, metal and any other waste material, whether recycled or not, produced by the business that has to be stored before it is removed.

(a) adequately contain the volume and type of garbage and recyclable matter on the food premises;

To prevent the risk of garbage or recyclable material contaminating food, all waste should be contained in bins, hoppers, wire cages, enclosures or other containers that are:

- appropriate for the type of waste — for example, dry paper can be stored in hessian or polythene sacks and wire cages but used oil or food waste, which may leak liquids, must be placed in impervious (e.g. plastic or metal) containers
- large enough or in sufficient numbers to contain all the waste produced until the next waste removal from the premises
- housed in an outside area or room that is adequate for the volume and types of waste — while there is no requirement to use refrigerated garbage rooms, this may be necessary for some businesses to prevent putrefaction and odour problems.

(b) enclose the garbage or recyclable matter, if this is necessary to keep pests and animals away from it; and

Garbage and recyclable matter needs to be enclosed wherever there is a risk of attracting or harbouring pests and animals. For example:

- To keep flies, cockroaches, rodents and other pests away from garbage in open-air storage areas, containers in these areas should have tight-fitting lids.
- In food preparation areas, lids on garbage containers are not necessary. Lids can cause inconvenience to staff handling food and can pose a risk of cross contamination if, for example, food handlers touch dirty lids and then touch food or utensils. However, it would be expected that all garbage would be regularly removed from food preparation areas to appropriate waste storage areas, to prevent attracting pests such as cockroaches.
- Recyclable material such as dry cardboard that could provide a harbourage site for pests, could be baled, kept in an enclosure and removed regularly.

Example

Storing garbage to avoid attracting pests

Garbage from a café is placed in plastic garbage bags, which are left at the back of the premises and collected twice a week. The proprietor observes that cats or dogs are tearing the bags open at night and the spilt garbage is attracting mice and other pests.

As a solution the café proprietor installs bins with tight fitting lids to securely store the garbage while it is awaiting removal.

c) are designed and constructed so that they may be easily and effectively cleaned.

This requirement applies to internal and external areas where the waste is stored and to garbage chutes, bins or other containers used to hold garbage or recyclable matter.

If the food premises has a garbage room:

- the floors, walls and ceiling must be designed and constructed in a way that enables them to be cleaned (under clauses 10 and 11) — for example:
  - » floors should be made of impervious material
  - » floors should be coved
  - » a hose tap connected to a water supply should be provided
  - » floors should be graded and drained to an appropriate floor waste disposal system
- it must not, as far as practicable, provide harbourage for pests — for example, walls should be smooth and free of cracks and crevices where insects could hide
- it must have sufficient ventilation (under clause 7) and lighting (under clause 8).

Garbage containers or garbage areas are not required to be sanitised. This is because the containers should not be in contact with food for sale, and food handlers should thoroughly wash their hands after touching the containers if their next handling job could transfer contamination from the containers to food. Washing containers thoroughly with detergent and water should remove residues that are likely to attract pests.

7 Ventilation

The intended outcome is that natural or mechanical ventilation minimises the likelihood of airborne contamination of food.

7 Food premises must have sufficient natural or mechanical ventilation to effectively remove fumes, smoke, steam and vapours from the food premises.

In the context of food safety and suitability, ventilation serves the following purposes:

- prevents the build-up of fats, oils, moisture and food particles on walls, ceilings and other surfaces that may otherwise attract pests or enable moulds or microorganisms to grow
- removes fumes and objectionable odours that could taint food
- helps prevent potential hygiene issues, for example, from food handlers sneezing or coughing if smoke is not removed.

'Ventilation' in this clause includes both the system that provides the fresh air and the exhaust system to remove stale air.

'Fumes, smoke, steam and vapours' includes all types of airborne matter that could cause hygiene problems or affect food safety or suitability if allowed to remain in food premises.

Sufficient, effective ventilation

The adequacy and effectiveness of a ventilation system can be affected by various factors including the:

- nature and volume of food operations or other activities (such as cleaning) on the premises — e.g. activities that produce large amounts of fumes, smoke, steam or vapours will require more ventilation
- power capacity of the ventilation system (affected by model specifications)
- cleanliness of the system components (including ductwork) and how well maintained the system is as a whole
- location of air intakes — intakes should be placed so that they provide air that is uncontaminated by outside fumes and smoke
- location of equipment near the ventilation system — the equipment should not obstruct the flow of air through the system
- overall layout of the ventilation system — it should be designed so that it does not draw (or blow) air into 'clean' preparation rooms from other areas that generate dust or other airborne matter that could cause food contamination. Exhaust hoods should be placed where their capacity to capture fumes, etc. is not affected by breezes coming through doors or windows.

Example

Ventilation problems in a bakery

Condensation in a bakery is causing flour to stick on the walls and mould and flaking paint to appear on the ceiling. These could pose a physical or microbiological contamination risk to the food. The problem is caused by the oven not being provided with an effective exhaust system.

The proprietor has an exhaust hood and extraction fans installed to ensure the condensation is effectively removed from the premises.

Appropriateness of the ventilation system

Businesses may choose to ventilate the premises either naturally (e.g. with windows and/or vents), with a mechanical ventilation system or a combination of both, provided the chosen system adequately serves its purpose. When building or altering a premises, the business should consider their particular needs (based on the list above), as it can be costly and inconvenient to install a mechanical extraction system retrospectively.

When determining whether or not a particular ventilation system is appropriate, some general points to consider are:

- The system must remove objectionable odours and prevent the accumulation of grease, fumes, condensation, etc. that could contain harmful microorganisms and toxins.
- Examples of evidence that an existing system is inadequate includes the presence of strong odours, grease on walls, smoke stains on ceilings and flaking paint above cooking and washing areas.
- Natural ventilation will generally only be suitable in premises where there is little or no cooking that generates steam or greasy air.
- If ventilation is needed for other purposes, such as providing a positive pressure to prevent airborne dust and insects entering the premises, the chosen system should be appropriate for that purpose (under clause 3).
- The parts of a mechanical ventilation system, such as fans, kitchen exhaust hoods and ductwork are 'fixtures, fittings and equipment' and must comply with clause 12.
- Other state/ territory or local legislation related to ventilation may also apply.

Mechanical ventilation systems

Guidance on mechanical ventilation systems is provided in the following (see Resources and References):

- AS/NZS 1668.1:2015 *The Use of Ventilation and Air Conditioning in Buildings - Fire and Smoke Control in Buildings*
- AS/NZS 1668.2-2012 (and as updated) *The Use of Mechanical Ventilation and Air-Conditioning in Buildings Part 2 Mechanical Ventilation for Acceptable Indoor-Air Quality* —includes useful guidance on designs and installation, and calculations for airflow rates, etc.

- The National Construction Code for Class 2 to 9 buildings (ABCB 2020, which includes commercial buildings) — Part F4 on Light and Ventilation states that a commercial kitchen must be supplied with a kitchen exhaust hood complying with AS/NS 1668.1 and AS 1668.2 where cooking apparatuses have power inputs above specified levels (e.g. where any cooking apparatus has a total maximum electrical power input exceeding 8kW or a total gas power input exceeding 29MJ/hour).
- AS 4674-2004 — in addition to referring to the National Construction Code and standards AS/NZS 1668.1 and AS/NZS 1668.2, this standard covers provision of an extraction system where a dishwasher or similar equipment vents steam and causes condensation on walls and ceilings.

Example

Change in ventilation system needed when a food premises changes hands

A business purchases a pre-existing food premises and begins operating in it using the existing fit out, including ventilation equipment. Over a few weeks, the proprietor notices that a greasy film is appearing on the walls and ceiling around the cooking equipment.

This shows that the mechanical ventilation that was suitable for the previous business is no longer adequate. It needs to be upgraded or replaced with a system that will effectively remove all the new business's cooking vapours.

Domestic premises

The clause applies equally to home-based food businesses. As above, the extent of ventilation required will depend on the type and scale of the business's food handling activities. Unless there is considerable frying or other activities that generate fumes, smoke, steam and vapours, domestic exhaust hoods are generally likely to be suitable. (Appendix 10 contains collated information on home-based businesses.)

8 Lighting

The intended outcome is that the food premises has sufficient natural and/or artificial light for staff to carry out food handling operations, cleaning and sanitising and other activities.

8 Food premises must have a lighting system that provides sufficient natural or artificial light for the activities conducted on the food premises.

Lighting must be sufficient to enable food handlers to readily check whether areas and equipment are clean, to detect signs of pests and to clearly see the food and equipment they are handling. Specific tasks, such as inspecting food, taking measurements or monitoring equipment, may require higher levels of lighting than general food operations. Natural or artificial light may be provided as long as it meets the intended outcome.

While subdued lighting may be provided for customers in dining and drinking areas, extra lighting must be made available in these areas to permit cleaning and inspection activities.

The standards AS 1680.1-2006 *Interior and Workplace Lighting: General Principles and Recommendations* and AS/NZ 1680.2.4-2017 *Interior and workplace Lighting- Part 2.4 Industrial Tasks and Processes* provide comprehensive information on interior lighting, including recommendations for specific tasks and processes (see Resources and References).

Light fixtures and fittings should pose no likelihood of causing food contamination and be able to be easily and effectively cleaned (as per clause 12).

Division 3 — Floors, walls and ceilings

9 Application

9 The requirements for floors, walls and ceilings specified in this Division apply to the floors, walls and ceilings of all areas used for food handling, cleaning, sanitising and personal hygiene except the following areas:

(a) dining areas;

(b) drinking areas; and

(c) other areas to which members of the public usually have access.

Dining areas include seating areas of restaurants, outdoor dining areas of restaurants and customer areas of takeaways.

Drinking areas include the customer side of bars and outdoor drinking areas of premises.

Other areas to which the public has access include customer areas of supermarkets and other retail shops, customer areas of warehouses and public toilets.

The requirements of other Divisions in this standard will also apply to these areas.

10 Floors

The intended outcomes are that floors are appropriate for the area, able to be effectively cleaned, impervious to grease, food particles and water and do not provide harbourage for pests.

The requirement applies to floors of interior (e.g. kitchens, coolrooms) and exterior (e.g. loading docks) food handling areas. It also applies to areas used for washing and cleaning equipment and utensils, and to toilet and other personal hygiene areas (provided there is no public access).

The clause applies equally to permanent, mobile and home-based food businesses: to kitchens, storerooms and personal hygiene areas used for business purposes. Temporary premises may be granted certain exemptions (see 10(3) below).

It does not apply to dining and drinking areas and areas where the public have access.

10(1) Floors must be designed and constructed in a way that is appropriate for the activities conducted on the food premises.

'Appropriate' in this context means fit for purpose considering factors such as:

- the activities conducted in the area — requirements for floors in areas where exposed food is handled (e.g. kitchen) may be more stringent than other areas (e.g. areas used to store packaged dry goods) because the food safety risk is greater
- whether the floor material, or the ground surface if it is being used, could produce dust, splinters or other material that could contaminate food

- the type of materials (e.g. food scraps, hot oil, water, chemicals) that could be spilt on the floor and the cleaning methods used to remove them
- whether the floor is durable enough to withstand the cleaning operations used (wet or dry) and other activities in the area that cause wear and tear.

The business may also consider factors such as cost, occupational health and safety issues and appearance.

10(2) Subject to subclause (3), floors must:

This subclause contains specific requirements for floors that apply to most food businesses, but certain exemptions may be granted (see subclause (3)).

(a) be able to be effectively cleaned;

Floors must be able to be effectively cleaned to remove accumulations of food waste, dirt, grease etc. that could otherwise contaminate food, attract pests and enable microbial growth. Food spills, food handlers' shoes and goods brought into the premises all contribute to making the floor dirty.

To be able to be effectively cleaned, floors should generally be non-absorbent, smooth (within occupational health and safety guidelines), free from cracks and crevices, and where required resistant to hot water, steam and/or chemicals used for cleaning. Floors may need to be graded so that water falls to a drainage system, depending on the cleaning method used (e.g. hosing with water). If a floor is able to be effectively cleaned, it is more likely that it actually will be kept clean.

Floor finishes

The suitability of the floor finish depends on the activities being carried out in the area, how much dirt, food residue, etc. is brought into the area, and how the floor is cleaned (e.g. mopped or hosed).

Examples of finishes suitable for floors in food preparation and wash up areas (e.g. smooth, free from cracks and crevices and resistant to hot water, steam and/or chemicals) include:

- ceramic tiles with flush epoxy grouting
- sealed quarry tiles
- polyvinyl sheeting
- laminated thermosetting plastic sheeting
- epoxy resins
- non-slip stainless steel.

A broader range of floor finishes may be suitable for other areas including storerooms, garbage rooms and eating areas. AS 4674-2004 provides additional information on the suitability of floor finishes.

Coving

Coving installed at floor–wall junctions and floor-plinth junctions helps with effectively cleaning floors by providing a continuous surface that prevents accumulation of dirt, grease, etc. Coving should ideally be provided for floors that are cleaned by flushing or hosing with water. It may also help with cleaning where the floor has to be frequently swept.

Sanitising floors

While there is no specific requirement under this clause that floors are capable of being sanitised, floor sanitation may be required under subclause 3(c) in order to minimise food safety risks associated with certain food handling activities (e.g. to prevent environmental contamination by *Listeria* in areas where chilled ready-to-eat foods are processed). Where sanitation of floors is required, the floors must be able to withstand the sanitising treatment to be 'appropriate' under subclause (1).

(b) be unable to absorb grease, food particles or water;

The floor surface must be impervious to grease, food particles and water to enable effective cleaning and so minimise the likelihood of food contamination. Carpet, unsealed timber and other absorbent flooring material would generally be considered unsuitable.

Mats (including dust control mats) and duckboards are 'equipment' and must comply with clause 12.

(c) be laid so that there is no ponding of water; and

Water remaining on floors could provide a water source for pests and so encourage their presence in the premises. It could also be a source of food contamination because it could contain pathogens, dirt, etc. that could transfer into food.

To avoid ponding issues, the floor surface should be either even (with no dips) and horizontal, or even and graded to allow water to fall to a drainage point.

(d) to the extent that is practicable, be unable to provide harbourage for pests.

The floor must contain no places where pests such as cockroaches could harbour and breed. For example, vinyl sheeting must be firmly attached to the surface beneath to prevent pests harbouring under the sheeting. Floors in poor condition (e.g. broken tiling with crevices or torn and lifted vinyl sheeting) might provide harbourage for pests.

The term 'to the extent that it is practicable' recognises that it could be difficult to exclude every crack or crevice in a floor. As with other clauses in this standard, the general intent is to protect food safety and suitability. Note that floors must be maintained in a good condition under Standard 3.2.2 subclause 21(1).

10(3) The following floors do not have to comply with subclause (2):

(a) floors of temporary food premises, including ground surfaces, that are unlikely to pose any risk of contamination of food handled at the food premises; and

This exemption to the requirements for floors in 10(2) allows businesses using a temporary food premises to use the existing ground surface, such as grass, concrete, paving or dirt, if the surface does not present a food safety hazard (e.g. the selling of packaged foods or food directly from a barbecue at temporary events such as fetes and markets).

If the ground surface is unsuitable, floors that do not comply with subclause 10(2) may be installed in temporary premises, provided they do not pose a food safety hazard. Examples of floors that may be suitable are groundsheets and sealed timber boards.

(b) floors of food premises that are unlikely to pose any risk of contamination of food handled at the food premises provided the food business has obtained the approval in writing of the appropriate enforcement agency for their use.

Food premises other than temporary may be exempt from the requirements for floors in 10(2) if the floor is unlikely to pose a risk to food safety based on the food handling activities of the business or history of use (e.g. dirt floors used traditionally in wineries). A written exemption must be obtained from the regulatory agency.

Example

Exemption for floor for storage purposes

A grocery store has a storeroom with an unsealed timber floor. Since the unsealed material could absorb grease, food particles and water, the floor could pose a risk of contaminating exposed food. The proprietor is granted written approval to store only packaged, non-perishable food in that storeroom, provided the floor is kept clean, free of pests and maintained in good order.

11 Walls and ceilings

The intended outcomes are that all walls and ceilings:

- are appropriate for the area and are provided where they are necessary to protect food
- do not provide places for pests to hide
- are able to be effectively cleaned
- where provided to protect food, are:
  - » sealed to prevent dirt, dust and pests getting into the area and
  - » impervious to grease, food particles and water
  - » easy to clean effectively.

The requirement applies to walls and ceilings in all food premises. However, it recognises that some food premises do not have walls and ceilings (e.g. some temporary stalls) and that walls and ceilings may be used for purposes other than protecting food, such as weather protection and security.

The requirement does not apply to walls and ceilings in dining and drinking areas or areas where the public usually have access (e.g. the retail area of a shop or living areas of a bed and breakfast).

11(1) Walls and ceilings must be designed and constructed in a way that is appropriate for the activities conducted on the food premises.

Where premises have walls and ceilings, their design and construction must be appropriate considering factors such as:

- the food handling activities in the area — whether the surfaces are subject to heat from cooking processes, or splashing or soiling
- the likelihood of material, such as paint flakes, contaminating food
- whether food will come into contact with wall surfaces
- a need to withstand impact from equipment (e.g. trolleys)
- cleaning methods — whether they are wet or dry, properties of cleaning chemicals used
- the likelihood of pest infestation and the types of pests
- ease of maintenance and replacement of worn or damaged areas
- ease of cleaning, particularly if the surface is broken by window sills, pipes, access panels, etc.

For example, areas where wet processes are carried out will need walls that are waterproof and may need to withstand high-pressure hosing. Processes that generate dust will need walls and ceilings with smooth hard surfaces that cannot trap and hold dust.

11(2) Walls and ceilings must be provided where they are necessary to protect food from contamination.

To protect the safety and/or suitability of the food, walls and ceilings must be provided where food is vulnerable to contamination; for example, where:

- unprotected (unpackaged) food is handled or stored and could be contaminated by insects, dust, dirt or other airborne material
- packaged food could be damaged by the weather, dust, dirt or pests.

Walls and ceilings may not be needed at temporary premises such as barbecues where raw food is kept in containers and cooked food is sold directly off the hotplate.

11(3) Walls and ceilings provided in accordance with subclause (2) must be:

The requirements for walls and ceilings that are needed to protect food that is vulnerable to contamination (as per subclause (2)) are more stringent to ensure the food is kept safe and suitable. The requirements are in addition to subclause 11(4).

(a) sealed to prevent the entry of dirt, dust and pests;

To prevent dust, dirt and pests such as cockroaches accessing the area where unprotected food is being handled:

- junctions between walls, between walls and plinths, and between walls and the ceiling must be tightly joined
- ceilings should be of continuous construction so that there are no spaces or joints — drop-in, removable panel ceilings are generally not suitable in areas where open food is prepared, displayed or served because the panels are difficult to seal
- if access is needed to the ceiling space then access panels should be located outside the area where open food is handled— if this is not possible, the access panel should fit very tightly in its surround.

(b) unable to absorb grease, food particles or water; and

Wall surfaces in kitchens and other food processing areas must be finished with impervious materials such as ceramic tiling, vinyl sheeting or stainless steel. Other materials coated or sealed to be impervious may be appropriate. AS 4674-2004 provides additional information on the suitability of wall and floor finishes for food premise areas.

Plasterboard and similar absorbent wall surfaces are generally not suitable unless protected by ceramic tiles or other impervious material in areas that are likely to be splashed by water or be in contact with food. This is particularly important for walls that have to withstand frequent cleaning.

Plasterboard ceilings painted with washable paint should generally provide a surface that is impervious enough to prevent the ceiling absorbing any steam, etc. that is not removed by ventilation systems.

(c) able to be easily and effectively cleaned.

Walls and ceilings that are able to be easily and effectively cleaned are more likely to be kept clean by staff, and so minimise risks of food contamination from dirty surfaces. Cleaning is made easier when surfaces are smooth and clear of fittings such as pipes, pictures or shelves.

Walls and ceilings with rough textures (e.g. stippled, rendered, exposed brick, rough wooden beams) may be unsuitable for food preparation areas because they are difficult to clean.

Sanitising walls and ceilings

Wall and ceilings are not generally required to withstand sanitising, since they should not generally come into contact with food and it should be sufficient to ensure they are clean. However, if it is deemed necessary to sanitise walls and ceilings to maintain food safety, the business should ensure the surface can withstand the method used for sanitising (under subclause 3(c)).

Examples

Suitability of wall finishes in food premises

1. The wall above a food preparation bench in a restaurant is made of exposed brick. This area is frequently soiled by food particles and despite being scrubbed cannot be kept clean. The dirty wall surface could attract pests or result in food becoming contaminated. The business is advised that the wall should be re-surfaced using a suitable finish that can be effectively cleaned, such as glazed tiles, a glass splashback or stainless steel sheeting.
2. The proprietor of a grocery store wishes to store wine bottles in a storage area separated from the rest of the store by a metal mesh wall. The business is advised that the metal mesh wall is suitable provided it can be effectively cleaned (and is kept clean).

Requirements for all walls and ceilings

11(4) Walls and ceilings must:

(a) be able to be effectively cleaned; and

The desired standard of cleaning will depend on what the area is used for, how dirty is it is likely to get and how this might affect food safety and suitability. Some examples to consider related to the effectiveness of cleaning are listed below:

- In staff hygiene areas (e.g. toilets and hand wash areas) and in cleaning areas (e.g. pot wash and dish wash areas) the standard of cleanliness will need to be high and so surfaces should be smooth, free of cracks and ridges, and impervious to grease and moisture (e.g. glazed tiling, stainless sheeting).
- In a dry goods store where all food is packaged, the walls and ceiling are unlikely to get greasy or contaminated by food. However, they may still get dusty and need cleaning, so a smooth finish (e.g. sealed wood panelling, painted plaster or smooth concrete) will help with effective cleaning.
- In areas of heavy wear (e.g. where trolleys may hit and chip finishes), hard wall surfaces such as stainless steel panels and corner protectors may be needed to ensure that the surfaces remain smooth and easy to clean.
- The colour of the wall is not relevant as long as the surface material is able to be effectively cleaned.
- Kitchens and other food preparation areas are likely to have walls and ceilings that are necessary to protect food from contamination and so must comply with subclause 11(3).

(b) to the extent that is practicable, be unable to provide harbourage for pests.

The requirement applies to the extent that is practicable and the use of the area and the total approach to pest control for that business should be considered. Some examples of practicable measures that could be taken to minimise harbourage sites for pests include:

- adhering tiles and sheeting (e.g. vinyl or stainless steel) directly to the wall so that there are no gaps
- avoiding pathways that pests could run along (e.g. ensuring there are no ledges where wall surfaces join and concealing piping and wiring)
- filling gaps and crevices around pipe entry points, open joints, etc.

Where the premises has false or suspended ceilings, access should be provided to spaces above these ceilings so that they can be inspected for signs of pests.

Appendix 7 contains further information on pest management.

Division 4 — Fixtures, fittings and equipment

12 General requirements

The intended outcomes are that:

- all fixtures, fittings and equipment are:
  - » adequate to produce safe and suitable food and are fit for use
  - » designed, constructed, located and installed so that they will not contaminate food, can be easily and effectively cleaned, and do not provide harbourage sites for pests
- adjacent surfaces can be easily and effectively cleaned
- food contact surfaces are made of material that will not contaminate food and are impervious to grease, food particles or water
- can be easily and effectively cleaned and, where necessary, sanitised.

The scope of this requirement is very broad and covers all fixtures, fittings and equipment in the premises and on food transport vehicles.

12(1) Fixtures, fittings and equipment must be:

(a) adequate for the production of safe and suitable food; and

This subclause intends to ensure that food premises are adequately equipped to keep food safe and suitable during all food handling operations, that the premises are kept clean and free of pests, and that staff can comply with the requirements for personal hygiene. 'Equipment' is defined in Standard 3.1.1.

Examples of general operations and the equipment or facilities likely to be needed are listed in the following table.

Type of operation	Equipment/facilities likely to be needed
Cooking/processing	Equipment that can ensure the process reaches the temperature or other parameter required to destroy pathogens or otherwise achieve the microbiological safety of the food.
Cooling and refrigerated storage	Equipment that can keep potentially hazardous food at 5°C or below (or other appropriate temperature control), and where appropriate, cool food quickly as per Standard 3.2.2 clause 7. Adequate refrigerated space for the volume of food that needs to be refrigerated or cooled.
Displaying potentially hazardous foods	Refrigerated or hot-display units that can hold all displayed food under temperature control (as per 3.2.2 clause 8) and protect it from contamination.

Type of operation	Equipment/facilities likely to be needed
Storing food — see 3.2.3 clause 15	Shelving, cupboards, storerooms, etc. so that food is protected from contamination.
Transporting chilled potentially hazardous foods	Refrigeration equipment, insulated containers or other appropriate equipment that can ensure transported food is kept under temperature control and is protected from contamination.
Washing food — see 'Sinks' below	A food preparation sink(s) should be installed if frequently washing food such as fruit and vegetables.
Utensil and equipment washing and sanitising	Double bowl sink, triple bowl sink, or single bowl sink plus dishwasher — see 'Sinks' below.
Personal washing	Equipment that ensures all staff have easy access to hand washing facilities as per clause 14.
Floor and general cleaning requirements	Single bowl sink, cleaner's sink, hose connections, curbed drain connected to the sewer or other waste-collection facility for cleaning the equipment used for cleaning the premises and for disposing of dirty water.

Sinks

The number and size of sinks that the food premises needs depends on factors such as:

- the type of operations on the premises that need a sink (e.g. washing food, washing/sanitising equipment, waste disposal, personal hygiene)
- the scale of operations, including the:
  - » volume of food or equipment that needs to be washed
  - » number of staff on site that need to wash hands
  - » frequency of various washing tasks (e.g. multiple times a day, at end of day only)
  - » amount of adjacent space needed to hold equipment or food for washing or draining
- the size of objects to be washed (e.g. large pots and pans)
- whether objects need to be immersed in water (e.g. sanitising utensils in hot water) or held under running water (e.g. washing foods)
- whether sanitation processes require a rinsing step
- whether the premises has a dishwasher and whether it can sanitise.

The intention is that the number and size of sinks are sufficient to allow the business to easily conduct all of its washing and cleaning activities without interference or obstruction, and without posing a food safety risk. For example, it is good practice to separate the following activities:

- food washing and equipment washing
- hand washing and food or equipment washing
- liquid waste disposal (e.g. mop buckets, fish tank waste) and any of the above.

These activities could be separated by using different sinks, or by conducting the activities at different times and ensuring the sink is cleaned and sanitised between uses.

Examples

Sink arrangements

1. A café has a single bowl sink, which is used for washing fruit and salad as well as for disposing of leftover milk in jugs and for rinsing wash cloths. Using the one sink for all these operations poses a risk of the food becoming contaminated from waste milk and dirt, grease etc. from cloths unless the sink is cleaned and sanitised between uses as appropriate. A better arrangement would be to have a dedicated food preparation sink.
2. A kitchen in a restaurant has a washing up sink but it is often obstructed with pots and pans and so cannot always be used when it is needed. The business should ensure there is an area with sufficient space to hold the dirty equipment so the sink is available.

Further examples are provided under clause 14 Hand washing facilities.

(b) fit for their intended use.

General design and construction

The design, construction and mode of operation of all fixtures, fittings and equipment must be fit for the intended use. The intention is that there are no flaws that could cause a food safety or suitability issue. Some examples are provided below:

- A refrigerator used to hold potentially hazardous food at 5°C or below should be designed and constructed to maintain an airflow and temperature that keeps the food this cold.
- A dishwasher used to sanitise utensils should be designed and constructed to operate on wash, rinse and dry cycles that leave the utensils clean and sanitary — this applies to washers that sanitise using heat or sanitising chemicals (see also subclause 13(3)).
- A sous vide cooker should be designed and constructed to heat the water to the cooking temperature and hold it at that temperature, and to mix the water so the temperature is even throughout the water bath.

Examples

Avoiding food safety issues with equipment unfit for its intended use

1. In a takeaway, chilled ready-to-eat meat dishes are placed in the bain marie when the business opens at 8.30 a.m., to reheat for the lunch-time trade. The bain marie is designed to hold heated food hot but is **not** intended by the manufacturer to reheat chilled food. Cold food placed in a bain marie is likely to heat very slowly and so provide opportunity for foodborne pathogens to multiply to dangerous levels. The business is advised to install a microwave oven or similar equipment to reheat the food rapidly before transferring it to the bain marie for hot holding (see Standard 3.2.2 subclause 7(4)).

2. A food business moves into an existing premises that has a chilled display unit. On testing the equipment they find the unit is not able to maintain a constant temperature of 5°C or below to safely display potentially hazardous food. The equipment is therefore not suitable to use for cold display. The business chooses to disconnect the unit and use it simply as a cabinet to display packaged chips and confectionery instead. Since these displayed foods are not potentially hazardous and do not need to be kept under temperature control, the unit is fit for its new intended use.

Materials

The materials used to construct fixtures, fittings and equipment must be suitable for their intended use. The intention is that there are no flaws that could cause a food safety or suitability issue. Some considerations are listed below:

- Metal used for surfaces that will be in direct contact with food should be able to withstand contact with that food as well as cleaning and sanitising (if applicable) processes. For example, certain grades of stainless steel and aluminium are generally likely to be suitable, but uncoated copper is not generally suitable.
- Unsealed timber is not generally recommended for use in fixtures, fittings or equipment that are frequently cleaned with water. The use of hard, close-grained wood can be suitable for equipment such as chopping boards, butcher's blocks, rolling pins etc. providing they are maintained in good condition and can be effectively cleaned and sanitised as appropriate.
- Plastics are generally suitable for a wide range of purposes but plastics vary with their resistance to heat, suitability for food contact, etc.

12(2) Fixtures and fittings must be designed, constructed, located and installed, and equipment must be designed, constructed, located and, if necessary, installed, so that:

The following requirements are intended to prevent food contamination resulting from fixtures, fittings and equipment that are poorly designed, constructed, located or installed. The phrase 'if necessary, installed' recognises that some equipment used on the premises is moveable and not actually installed.

(a) there is no likelihood that they will cause food contamination;

Fixtures, fittings and equipment could potentially contaminate food from dripping/spraying liquids, falling components, failure to cover food or transfer of built-up dirt or pathogens. The business must ensure all sources of likely contamination have been controlled. Some general examples are provided below.

- Equipment containing bearings and gears should be designed so that bearings cannot fall out and lubricant does not drip from the equipment. If some dripping is inevitable and could contaminate food, the equipment should be located so that there is no likelihood that the lubricant will be in contact with the food. Similarly, oils, solvents, release sprays (used to free equipment or stop squeaking) and other materials used in equipment or for maintenance should not leak from the equipment.
- Lines carrying liquid waste from equipment, lines carrying detergent to dishwashers or drains carrying waste from appliances should not be located directly above food handling areas or across food and food containers.
- Glass light fittings should be designed and located so that, should a globe break, glass will not fall onto food.
- Fans should be located so that they do not blow dirt, dust, etc. over exposed food.
- Electronic insect killing devices should be designed and constructed so that the dead insects are caught by the device and do not fall on food or equipment. Alternatively, insect control devices should be located away from exposed food.
- Clean-in-place equipment should be designed and constructed so that it is either self-draining or can be effectively drained to prevent cleaning and sanitising solutions remaining in the system and contaminating food. The design should ensure that there are no parts that cleaning and sanitising solutions cannot reach.
- Equipment openings, covers and lids should be designed to protect stored or prepared food from contaminants and other foreign matter that could fall into the food.
- The drip gutter on kitchen exhaust hoods should catch the grease and condensation to prevent drips on food or equipment.
- Condensation from refrigeration motors and air conditioning equipment should be collected and discharged to a drain so it does not contact food.
- Parts in machinery should be designed to avoid trapping and holding food particles or moisture, especially in inaccessible parts of the machine.

(b) they are able to be easily and effectively cleaned;

Fixtures, fittings and equipment need to be kept clean to prevent the build-up of food residues and other waste that could attract pests and enable pathogenic microorganisms to grow. Equipment, etc. that is able to be easily and effectively cleaned is more likely to be kept clean.

This requirement covers all of the surfaces of fixtures, fittings and equipment, including architraves, doors and curtains (e.g. plastic strip curtains). Note that food contact surfaces are specifically covered by subclause (3).

All the surfaces must be able to be readily reached and cleaned to ensure cleaning can be done easily and often enough to maintain the premises' cleanliness.

Factors that make fixtures, fittings and equipment easy to clean include:

- smooth impervious surfaces with rounded edges and no open joints or tube ends, and no rough surfaces or joints that can trap dirt
- nozzles or taps that are easy to dismantle
- if dismantling is necessary for cleaning, it can be done by hand or with readily available tools
- readily accessible access panels in ducts
- readily removable grease filters in kitchen extraction hoods
- shelves mounted so there is a slight gap from the wall or other surface they are fixed to so that food and dirt cannot lodge at the wall–shelf junction
- equipment either butted together with joints sealed so that debris cannot fall between, or located with enough space around the equipment to reach and clean the sides
- removable safety shields
- door knobs, plates and panels made of smooth impervious material
- wheels or castors on equipment so it to be easily moved, preferably by one person
- service wires, pipes or hoses (gas, electricity, water) that can be disconnected (or are flexible and long enough to enable the equipment to be moved)
- legs that raise equipment high enough to enable access to the surfaces underneath
- cleanable dust control mats (as used in customer areas of supermarkets).

(c) adjacent floors, walls, ceilings and other surfaces are able to be easily and effectively cleaned; and

Following on from clause 12(b), this subclause intends that the surfaces adjacent to the fixtures, fittings and equipment are able to be easily and effectively cleaned.

Features that enable these surfaces to be easily and effectively cleaned include:

- equipment and walls spaced far enough apart to allow access for cleaning
- equipment and walls butted together with joints sealed
- castors, rollers or legs on unfixed equipment to enable it to be moved
- plinths or legs on fixed equipment to raise it high enough for floors to be cleaned underside.

(d) to the extent that is practicable, they do not provide harbourage for pests.

Cavities and crevices in fixtures, fittings and equipment can provide nesting sites for pests such as cockroaches and mice and so pose a risk to food safety and suitability. Cracks, crevices and cavities should be avoided through appropriate installation and maintenance. Boxed-in compartments such as bases to bench units, boxed-in water heaters and other inaccessible spaces generally should not be used unless they are vermin proofed (e.g. by filling cavities using expandable foam).

The requirement must be complied with only to the extent that it is practicable, appropriate to the type of premises and risks posed to food safety. For example, it would be impracticable and probably unnecessary for a stall set up for a short event to fill all cavities and crevices.

Appendix 7 contains further information on pest management.

12(3) The food contact surfaces of fixtures, fittings and equipment must be:

This requirement includes any surface that comes into direct contact with unprotected food and is related to Standard 3.2.2 clause 20(1). Examples are processing equipment, chopping boards and other preparation surfaces, eating and drinking utensils and storage containers.

(a) able to be easily and effectively cleaned and, if necessary, sanitised if there is a likelihood that they will cause food contamination;

Where possible, food contact surfaces should be impervious, smooth and free of cracks, chips, ridges or grooves that could impair cleaning (and so pose a risk of harbouring pathogenic microorganisms and transferring them to food). Some factors to consider are listed below.

- It is recognised that some surfaces will not be able to be completely smooth, free from ridges and grooves because of their required function (e.g. graters, shredders, non-slip conveyor belts).
- Unsealed surfaces of timber, earthenware and stone may not be able to be easily and effectively cleaned and sanitised, and so generally are not recommended for purposes such as preparing or serving food. However, food contact surfaces made of hard, close-grained wood that is well maintained is generally suitable. Any surfaces could be used for display purposes if the food on display is not for consumption (in this case there is no likelihood of the surface causing food contamination).
- Food packaging and storage containers should not be reused unless they have surfaces that are designed for, and capable of, being cleaned and (if necessary) sanitised to prevent cross-contamination between uses. See also Standard 3.2.2 clause 9.

Further information on cleaning and sanitising, including procedures, is provided in Appendix 6.

(b) unable to absorb grease, food particles and water if there is a likelihood that they will cause food contamination; and

The surfaces must be impervious to grease, food particles and water if there is a likelihood that they will absorb material that could contaminate food they are in contact with. For example, unglazed earthenware and unsealed timber generally should not be used for preparing or serving food (see paragraph (a) above).

The subclause does not apply if the surface will not contaminate the food it is in contact with. For example, porous paper used for filtering coffee and hard timber tables in sound condition used for rolling bread dough would generally be considered unlikely to cause food contamination.

(c) made of material that will not contaminate food.

Materials used for food contact surfaces must not contaminate food. Potential sources of contamination include chemicals migrating into the food from glazes, plastics or metals, or fragments of material transferring to food. Some examples include:

- lead in ceramic, china and crystal utensils, solders, flux and pewter
- copper and galvanised metal in contact with acidic foods
- plastics that are not sufficiently heat resistant to withstand the cooking process (e.g. frying in hot oil)
- plastic packaging that is not food-grade material
- wood splinters from unsealed timber serving baskets
- glass shards from chipped glassware.

See also Standard 3.2.2 clause 9.

12(4) Eating and drinking utensils must be able to be easily and effectively cleaned and sanitised.

Eating and drinking utensils may transfer pathogens directly into people's mouths and so cause illness to people using them. To ensure that the business uses eating and drinking utensils that will withstand cleaning and sanitising processes, this specific requirement has been included. See also Standard 3.2.2 clause 20, which requires eating and drinking utensils to be in a clean and sanitary condition before each use. Appendix 6 contains further information on cleaning and sanitising.

13 Connections for specific fixtures, fittings and equipment

The intended outcomes are that:

- fittings, fixtures and equipment are connected to an appropriate water supply and drainage system if they are designed to do so
- dishwashers, glasswashers and similar equipment used to sanitise are only used to sanitise when the water has reached the sanitising temperature.

13(1) Fixtures, fittings and equipment that use water for food handling or other activities and are designed to be connected to a water supply must be connected to an adequate supply of water.

'Adequate supply of water' is defined in clause 1. All fixtures, fittings and equipment that are designed to be connected to a continuous water supply must be plumbed in (e.g. to a mains supply or tank water). General examples include sinks, basins, dishwashers, glasswashers, hose connections and ice-making machines. However, it does not include equipment that is not designed to be connected to a water supply (e.g. bowls used for washing utensils). Portable/ stand-alone equipment that uses water (e.g. portable hand washing stations) is designed to be connected to its own water supply.

This requirement is intended to:

- ensure a supply of water at appropriate volume, temperature and pressure for water-using activities (see also clause 4)
- prevent food contamination from the use of unsuitable (non-potable) water supplies.

Example

Inadequate water connections for a sink

A small café has a kitchen sink that is connected to the mains cold water supply but there is no hot water connected. Food handlers need to boil the jug whenever warm water is needed to wash utensils and pour the water into the sink.

The business is advised to connect the sink to piped hot water because:

- the sink is used for washing utensils throughout the day and so needs a constant warm water supply (cold water will not effectively wash utensils)
- the sink is designed to be connected to a hot water supply.

This requirement applies to all food premises. See Appendix 9 for collated information on temporary and mobile premises.

13(2) Fixtures, fittings and equipment that are designed to be connected to a sewage and waste water disposal system and discharge sewage or waste water must be connected to a sewage and waste water disposal system.

All fixtures, fittings and equipment that are both designed to be connected to a drainage system and discharge sewage or waste water, must be connected to the food premises' drainage system. This system will be the business's disposal system as per clause 5 and may or may not be mains sewerage. Note that other legislation may require that waste water does not run into storm water drains.

It is recognised that some equipment that discharges waste water is not intended to be connected to the drainage system. For example, some food processing equipment discharges cooking water to waste channels in the floor rather than having a direct connection to a drain.

Mobile and temporary premises

For mobile premises fixtures, fittings and equipment that produce waste water must be directly connected to a sewer or a tank of adequate size as per clause 5. The subclause does not apply to mobile premises that do not produce waste water (e.g. vehicles selling pre-packaged foods such as canned drinks).

Stalls and other temporary premises are unlikely to use equipment that is designed to be connected to the drain (they are likely to use bowls or other portable equipment for washing).

See also Appendix 9 for collated information.

13(3) Automatic equipment that uses water to sanitise utensils or other equipment must only operate for the purposes of sanitation when the water is at a temperature that will sanitise the utensils or equipment.

Standard 3.2.2 requires eating and drinking utensils, and food contact surfaces that could contaminate the food they are in contact with, to be sanitised. This subclause requires that automatic equipment (such as glasswashers and dishwashers) used to sanitise with hot water only operates for that purpose when the water is at the sanitising temperature.

It is not possible to tell whether clean utensils and surfaces have been effectively sanitised by automatic equipment by simply looking at them (as pathogens are not visible to the naked eye). So, it is important that equipment that is designed and used for sanitation actually does sanitise.

For further discussion on sanitising see Standard 3.2.2 (clause 20) and Appendix 6 (including some discussion on domestic and commercial dishwashers).

Businesses should contact the manufacturers of machines they intend to use for sanitising, if they need to establish that the machine's time and temperature cycles will in fact sanitise.

Example

Sanitising correctly with a dishwasher

A continuous dishwasher is used by a food business to sanitise eating and drinking utensils. The dishwasher manufacturer's instructions specify that the machine sanitises by using a program that washes at 60°C and rinses at 82°C for set times.

The dishwasher is fitted with a temperature-indicator light that turns on when the optimum temperature is reached. The machine can still be operated when this light is off, although using it this way could mean that the utensils do not get hot enough to be properly sanitised. The machine should be adjusted so that it cannot operate with the light off, or to otherwise ensure that staff do not use the machine for sanitising utensils unless the temperature light is on.

14 Hand washing facilities

The intended outcome is that designated, appropriate hand washing facilities are available and accessible for food handlers.

Thorough washing and drying of hands is a critical factor in preventing foodborne illness. Standard 3.2.2 specifies when food handlers must wash and dry their hands and requires them to use only the facilities provided and maintained by the business for hand washing. Clause 14 sets out requirements on the design and location of hand washing facilities.

14(1) Subject to subclause (4), food premises must have hand washing facilities that are located where they can be easily accessed by food handlers:

'Easily accessed'

The requirement for accessibility is to enable and encourage food handlers to frequently use hand washing facilities. Factors to consider when determining whether facilities can be easily accessed include:

- The location of hand washing facilities in any particular area should have regard to the layout of the area and the needs of the people working there (e.g. for washing, cleaning and sanitising activities). Paragraphs (a) and (b) specify areas that must have hand washing facilities.
- Basins or other hand washing facilities located behind or obstructed by other equipment, walls, partitions or doorways are not likely to be accessible.
- Facilities located above or under benches may be too low or too high to be accessible.

(a) within areas where food handlers work if their hands are likely to be a source of contamination of food; and

This requirement is to ensure that there are hand washing facilities wherever unprotected food or food contact surfaces are handled, such as in food preparation areas.

Example

Relocating a basin to avoid food contamination issues

A café proprietor is refurbishing the kitchen of a café. The kitchen currently has a hand basin behind a door so it is difficult to access, especially when the door is open. Because of this, staff prefer to use the food preparation sink to wash their hands. This presents cross-contamination risks, because pathogens and other contaminants from the food handlers' hands could contaminate the sink area and transfer to food being washed.

The proprietor is able to relocate the basin so it is nearer to the food preparation benches and easier to access. This will encourage staff to frequently use the hand basin and leave the food preparation sink for its proper use, preventing cross-contamination issues.

Within areas where food handlers work

The facilities must be close enough to food handlers so that they are not discouraged from washing their hands by having to walk outside the food handling area. A specific distance is not prescribed, as it may vary depending on the size of the area and the food handlers' activities. For example, the distance to the nearest hand basin in a restaurant kitchen is likely to be less than in a large food production factory or in a dry food packaging area where water use is restricted.

Hands likely to contaminate food

'Contamination' is defined in Standard 3.1.1.The likelihood of a food handler's hands contaminating food depends on the food handler's activities. For example, if they are handling unprotected food or clean and sanitised food contact surfaces, they are likely to be a source of food contamination and so hand wash facilities are required. If only handling fully packaged food, the risk of contaminating food is minimal, so hand wash facilities may not be required.

Examples

Hand washing facilities

1. In multiple areas

A supermarket has a delicatessen, butchery, seafood area and bakery where unprotected food is handled. The food handlers in each of these areas could be a source of food contamination, so hand washing facilities should be available in each area.

2. Not needed in certain situations

In a warehouse cartons of packaged foods are stored and moved from one area to another by hand and machine. The hands of staff working here are not a source of contamination of food since they will never touch the food and so no hand washing facilities are necessary in the warehouse.

Number of hand wash basins

The number of basins is not prescribed, but the intention is that food handlers should not be discouraged from washing hands because they have to wait or travel too far to wash their hands.

At least one hand basin must be provided in areas where unprotected food is handled, as outlined above. Whether additional basins are needed will depend on the size, layout and use of the area and the number of food handlers.

Example

Placement of hand wash basins to prevent cross contamination

A kitchen is used to prepare meals and sandwiches for catering. Although there are no dividing walls there are three distinct food handling operations taking place. In one area sandwiches are made and meals portioned into containers, in another area raw ingredients are prepared and cooked, and in the third area returned utensils are washed.

The business installs three wash basins that are each visible from, and convenient to, one of the work areas. This is to limit cross-contamination between raw foods in the preparation area and ready-to-eat foods in the portioning area. It also limits cross-contamination from soiled eating and drinking utensils to the hands of staff handling ready-to-eat foods.

(b) if there are toilets on the food premises — immediately adjacent to the toilet or toilet cubicles.

To prevent the transfer of pathogens from toilet areas to food, food handlers are required to wash their hands immediately after using the toilet (under Standard 3.2.2 clause 15). To enable this, hand washing facilities must be immediately adjacent to any toilets (or cubicles) that are part of the food premises. A basin in the toilet cubicle or immediately outside the cubicle would generally be suitable.

Businesses using shared public or staff toilets (e.g. in shopping malls, at fairs) are not specifically required under these standards to ensure hand basins are available at these public facilities. However, note that businesses must ensure 'adequate' toilets are available for food handlers, under clause 16. Other legislation (e.g. building laws) may also apply.

It is good practice to provide a hand basin at the staff entrance to the food preparation area, because it will encourage and enable staff to thoroughly wash their hands before resuming work and before there are opportunities to contaminate food or surfaces.

14(2) Subject to the following subclauses, hand washing facilities must be:

(a) permanent fixtures;

The facilities have to be permanent fixtures, unless the premises are temporary or a specific exemption has been granted (under subclause (4) and (5)).

(b) connected to, or otherwise provided with, a supply of warm running potable water;

The hand wash facilities must have warm potable water that runs from a single outlet. This could be achieved by, for example:

- an instantaneous water heater preset to provide warm water
- a thermostat-controlled water heater
- separate hot and cold water supplies delivered through a single mixer tap
- water from a single outlet at a temperature controlled by a thermostatic mixing valve.

Note that hand washing equipment designed to be connected to a water supply must be connected to an adequate supply of water under clause 13.

Hands-free taps and automatically timed taps

Hands-free taps or single-lever mixer taps are increasingly being used and help prevent contamination transferring from one person's hands to another's, because the tap is less likely to be touched with dirty hands.

The duration of water flow is not prescribed, but running water should be available for long enough to thoroughly wash hands. This may mean that automatic taps need to be activated more than once to complete hand wetting, lathering and rinsing steps.

Example

Sinks not set up adequately for hand washing

1. A hand basin at a café is connected to the cold water supply only. As is, this set-up does not provide warm running water for food handlers to effectively wash their hands.

   The basin should be connected to a hot water supply and a single mixer tap installed (if not already fitted), or another set-up provided for warm running potable water.

2. The hand wash sink in a mobile food business has separate hot and cold spouts, connected to a hot and cold water supply. The sink is filled with hot and cold water to provide warm water for hand washing. This set-up does not provide warm **running** water required for hand washing. The business could for instance replace the separate taps with a single mixer tap or (if appropriate) adjust the hot water temperature to provide warm running water.

(c) of a size that allows easy and effective hand washing; and

A size is not prescribed, but hand washing facilities must be large enough (including the distance under the tap) for food handlers to easily move their hands and arms about under the running water to effectively wash them. If sinks are too small, there is a risk that hands and arms will not be washed properly or that dirt and pathogens from hands will splash and contaminate surrounding areas.

If automatic units are used for heating water, or dispensing water and soap, they should be installed in a way that provides room for food handlers to effectively wash their hands and arms under the running water.

(d) clearly designated for the sole purpose of washing hands, arms and face.

The facilities must be identified in a way that shows they are only to be used for washing hands, arms and face.

The business might identify a sink, for example, by:

- installing a conventional hand basin (easily recognised as a hand wash basin) and providing soap and drying facilities only at that basin (or basins)
- putting up a sign that states 'For hand washing only'
- putting up a picture of hands being washed
- using signage that says the sink is not to be used for food and utensil washing.

Double bowl sinks

If one compartment of a double bowl sink is designated for hand washing, the sign must clearly indicate which compartment. This use of one compartment would generally only be suitable if the business did not need both compartments for its food handling activities or if other sinks are available for food preparation, cleaning and sanitising (see example below).

Example

Using one half of a double sink for hand washing

A café serving only pre-prepared ready-to-eat food (cakes, pies, wraps) and drinks uses a dishwasher to wash and sanitise all eating and drinking utensils and other small pieces of equipment. The business has a double bowl sink, with one compartment designated as the hand basin. A sign above this half of the sink states 'Hand washing only — no other uses' and soap and paper towels are located on a shelf above the sink. The other half of the sink is used for general purposes such as washing bench tops and pre-rinsing items for the dishwasher.

14(3) Paragraph (2)(a) does not apply to temporary food premises.

Hand washing facilities at temporary premises do not have to be permanently fixed in place. Because temporary premises are generally dismantled after an event, having permanent fixtures would be impractical. Examples of alternative facilities that could be used include water containers with taps and commercially available portable hand wash stands.

Mobile food premises must have permanent hand washing facilities fitted.

14(4) With the approval in writing of the appropriate enforcement agency, food premises that are specified in the approval do not have to comply with any requirement of this clause that is also specified in the approval.

14(5) Only food premises that are used principally as a private dwelling or are temporary food premises may be specified in an approval for the purposes of subsection (4).

Temporary premises and premises used mainly as private dwellings may be exempted from the requirements of clause 14 if the food business has written approval from the food regulatory agency. The approval must specify which of the requirements do not have to be met.

Exemptions for domestic premises

When considering whether to approve an exemption to a requirement for hand washing facilities, regulatory agencies should consider risks to food safety, taking into account the type and scale of the business's activities (all food handling, and cleaning and sanitising operations).

For example, if only one or two people are involved with food handling activities at one time or only food that is not potentially hazardous is handled, the food safety risks may be relatively low. Arrangements for hand washing that may be suitable in this case could include:

- a hand basin adjacent to the kitchen or easily accessible from the kitchen (e.g. in a laundry or bathroom nearby) is available for hand washing
- the kitchen has a double bowl sink with one compartment designated for hand washing only
- the sink can be effectively used for different activities at different times (and sanitised between uses as necessary) to enable hand washing when it is needed.

However, if for example multiple people are engaged in food handling activities within the kitchen and they are handling both raw and ready-to-eat food, the food safety risks resulting from cross-contamination from hands may be considered higher. In this case a designated hand wash basin in the kitchen may be appropriate.

An exemption from having a basin immediately adjacent to the toilet or toilet cubicles may be sought by home-based businesses. The regulatory authority may grant an exemption if they are satisfied that food handlers can use other hand washing facilities without compromising food safety.

Temporary premises

Food regulatory agencies considering approval for an exemption to a requirement for hand washing facilities should consider the risks to food safety and the business's temporary operations. For example, for temporary premises handling only low-risk packaged food (e.g. market stalls selling packaged drinks and snacks), or operating where water is limited or unavailable (e.g. outback camping tours) it may be considered adequate to use hand washing alternatives such as sanitising gels or wipes.

Other legislation

Other legislation (e.g. in building codes) related to hand basins may apply to food businesses.

Division 5 — Miscellaneous

15 Storage facilities

The intended outcome is that adequate storage is available for items likely to be a source of food contamination and that stored items are unlikely to contaminate food or food contact surfaces.

15(1) Food premises must have adequate storage facilities for the storage of items that are likely to be the source of contamination of food, including chemicals, clothing and personal belongings.

The requirement applies to the storage of any items that could contaminate food.

Clothing and personal belongings

Outdoor clothing, soiled uniforms, handbags and other personal belongings are likely to contain foreign material such as hair, dirt and microorganisms that could contaminate food, surfaces and equipment.

The business must provide staff with space to store their belongings, so they are not put on bench tops or other places where they could contaminate food.

What is 'adequate' storage will depend on the operations of the business and how many staff need storage. For example, in a small business a designated cupboard for personal items may be suitable, but if staff have to change clothes or uniforms to work, a dedicated change room with lockers or cupboards may be necessary.

Chemicals and equipment for non-food use

Chemicals used for cleaning and pest control are usually toxic if ingested and so contamination of food and food contact surfaces must be avoided. Similarly, equipment used for cleaning or pest control is likely to have chemicals, microorganisms, dirt, etc. on it that could make food unsafe or unsuitable.

The business must provide facilities for storing these chemicals and equipment to prevent them contaminating food. Ideally, the facilities would be a separate and secure designated area such as a storeroom or cupboard. However, in some circumstances separate enclosed storage may not be needed. For example, if chemicals are in unopened, sealed containers and do not emit odours, then a part of a storage area for packaged dry goods or unused equipment may be adequate.

Other items

The business must provide adequate storage (e.g. a dedicated room, cupboard or drawer) for the following items, if they are kept on the premises:

- office equipment (laptops, pens, paperclips, calculators, etc.) and paperwork
- maintenance equipment (tools, screws, paint, etc.)
- dirty linen, tablecloths, tea towels, aprons, etc.

15(2) Storage facilities must be located where there is no likelihood of stored items contaminating food or food contact surfaces.

To reduce the risk that contaminants from stored items will contaminate food, it is recommended that storage facilities are located:

- away from areas where food or utensils are stored, prepared or displayed — if this is not possible, the storage should be provided in a cupboard, locker or other designated area (preferably enclosed)
- in a place where small items (e.g. paperclips) are unlikely to fall into food or food packaging/ containers — for example, shelving above food preparation and food packaging benches is unlikely to be suitable.

Other legislation

Other legislation (e.g. in building codes) related to storage facilities may also apply to food businesses.

16 Toilet facilities

The intended outcome is that toilet facilities for food handlers are available either on the premises or nearby.

16 A food business must ensure that adequate toilets are available for the use of food handlers working for the food business

'Adequate toilets'

Toilets should be located, designed and maintained to enable and encourage food handlers to use them whenever they need to. The term 'adequate toilets' in this context includes the following considerations, whether or not the toilets are on the food premises or elsewhere:

- accessible at all times that food handlers are working
- clean and operating properly
- with suitable hand washing and hand drying facilities (as per clause 14(b))
- adequately lit and ventilated
- in enough numbers to be used without unreasonable waiting
- located to prevent contamination of food, for example:
  - » so there is no likelihood that droplet-borne contamination will compromise food safety
  - » separated from areas where open food is handled, displayed or stored, for example by an intervening ventilated space with self-closing doors, or by self-closing doors and a mechanical exhaust system
  - » access to customer or public toilets should not be through areas where open food is handled, displayed or stored (other than customer areas such as dining areas)
- located within a reasonable distance from the food handlers' work area, so that food handlers can readily get to the toilet in the time available for breaks, etc.

Toilets that are not part of the food premises

If a food business is using toilets that are not part of the food premises, they must still ensure these facilities are adequate. For example, if the toilets are in a shopping mall under the control of the mall's management and are not kept clean, the food business should ensure action is taken so the toilets are clean, or provide access to other toilets. Otherwise there is a risk that the business's food handlers will transfer contamination from the unclean toilets to food.

Mobile premises

The clause applies to mobile premises. The proprietor of the mobile business should ensure that toilet facilities are available to the business during its operating hours. Facilities could include, for example, toilets at a service station, another business, a residential property or a portaloo on site.

See Appendix 9 for collated information on mobile premises.

Example

Mobile businesses using nearby toilets

A mobile seafood vendor parks his vehicle in a service station driveway to sell seafood on weekends. He obtains permission from the service station proprietor to use the toilets at the service station, checking the facilities will be open for the hours he will be operating.

17 Food transport vehicles

The intended outcomes are that:

- vehicles used to transport food are designed and constructed to protect the food
- the parts of the vehicle used to transport food can be effectively cleaned
- the surfaces in contact with food can be sanitised if necessary.

This clause applies to vehicles used to transport food whether they are self-propelled or not and whether they are used on land, sea or air. Vehicles used to transport food include shopping trolleys (under Standard 3.1.1).

The clause does not apply to vehicles used for preparing or selling food; they are mobile food premises and must comply with the requirements for food premises.

17(1) Vehicles used to transport food must be designed and constructed to protect food if there is a likelihood of food being contaminated during transport.

The intent is that the design and construction of food transport vehicles protects food from contamination. Note that Standard 3.2.2 clause 10 requires food to be protected during transport.

Possible sources of contamination in vehicles transporting food that need to be considered by the business include:

- the vehicle itself, such as flaking paint, dripping water from fan units and grease from overhead rails — note that Standard 3.2.2 clause 21 requires food transport vehicles to be maintained in a good state of repair
- environmental contaminants such as airborne dust, dirt, vehicle fumes and rain — food should ideally be enclosed either in suitable packaging, containers or within the vehicle itself
- drivers and passengers — the food compartment should generally be separate from the driver's or passengers' areas to prevent food being in contact with people's body parts, droplets from coughs or sneezes, or personal items
- chemicals or other products (including food) that may make the food unsafe or unsuitable by giving off odours or mixing directly with the food — for example, cooked and raw foods transported together, or cleaning chemicals and food transported together should be adequately separated or packaged so there is no risk of spillage, direct contact or contamination by fumes.

Designing and constructing the vehicle to include partitions, separate compartments, shelves, etc. will assist in segregating loads and preventing cross-contamination. Completely enclosing food in suitable containers during transport may be sufficient to protect the food from contamination (e.g. home-delivered pizzas enclosed in new takeaway boxes and inside insulated bags would be suitable to transport this food in personal vehicles).

17(2) Parts of vehicles used to transport food must be designed and constructed so that they are able to be effectively cleaned.

This requirement only applies to the area in the vehicle where the food is placed. For example, it would not generally apply to the driver's compartment, passenger areas or, if the food is placed in a specific compartment of the vehicle, to the rest of the holding area of the vehicle.

The surfaces in the vehicle parts need to be able to be cleaned to a level appropriate to the food being transported (see example below).

17(3) Food contact surfaces in parts of vehicles used to transport food must be designed and constructed to be effectively cleaned and, if necessary, sanitised.

If the food being transported is unpackaged and in direct contact with the interior surfaces of the vehicle (see example 3 below), the surfaces must be capable of withstanding sanitising by heat or chemicals.

Example

Examples of vehicle surfaces for effective cleaning

1. A truck used to transport raw unwashed fruit and vegetables is likely to need basic cleaning that removes soil and pests. So, a metal floor and metal or canvas sides would likely be suitable surfaces that enable effective cleaning.
2. A truck carrying unpackaged foods such as meat carcasses would need to be cleaned to a higher standard to remove dirt as well as microbiological contamination. Because of this, it should have metal or other impervious interior surfaces that withstand repeated contact with hot water and cleaning detergents.
3. A tanker transporting milk has direct contact between the tanker lining and the milk so the surface will need the highest standard of cleaning as well as sanitising to prevent any contamination. The food contact surface of this vehicle should be stainless steel or equivalent material that can withstand any heat or chemical treatments used to clean and sanitise (requirements for dairy transport businesses are specified under Standard 4.2.4 — Primary Production and Processing Standard for Dairy Products).

Other legislation related to food transport vehicles may also apply; for example, laws applicable to meat transport may refer to AS 4696:2007 *Australian Standard for the Hygienic Production and Transportation of Meat for Human Consumption*.

APPENDICES

APPENDICES

Appendix 1: Potentially hazardous foods

In Standards 3.2.2 and 3.2.2A potentially hazardous food is defined as food that has to be kept at certain temperatures to minimise the growth of any pathogenic microorganisms that may be present in the food or to prevent the formation of toxins in the food. Potentially hazardous foods are also referred to as 'temperature control for safety (TCS) foods'.

Potentially hazardous foods have certain characteristics that support the growth of pathogenic microorganisms or the production of toxins. Factors affecting microbial growth include the nutrients, moisture, acidity (pH) and gas atmosphere of the food. If the combination of these factors creates a favourable environment and the food is not kept under temperature control, microorganisms can grow and form toxins. If the levels of pathogenic microorganisms or toxins reach unsafe levels, foodborne illness may result.

While toxin formation is generally associated with the growth of pathogenic microorganisms, it can also result from food decomposition. For example, the amino acid histidine, present at various concentrations in fish muscle, can be broken down by certain bacteria to form scombrotoxin (histamine) if the fish[1] are not rapidly chilled shortly after capture.

What food is potentially hazardous?

Potentially hazardous foods are generally moist, nutrient-rich foods with a neutral pH. Examples of foods that are normally considered potentially hazardous include:

- raw and cooked meat/poultry or foods containing raw or cooked meat/poultry; for example burgers, curries, kebabs, pâté and meat pies
- foods containing eggs (cooked or raw), beans, nuts or other protein-rich food, for example batter, mousse, quiche and tofu
- dairy products and foods containing dairy products, for example milk, dairy-based desserts, bakery products filled with fresh cream or with fresh custard (yoghurt is not included here as it is an acidified product)
- seafood (excluding live seafood) and foods containing seafood, for example sushi
- sprouted seeds, for example of beans and alfalfa
- prepared fruits and vegetables, for example cut melons, salads and unpasteurised juices
- cooked rice and both fresh and cooked pasta
- foods that contain any of the above foods, for example sandwiches, pizzas and rice rolls.

Notes

1. Some of the types of food listed will not be considered potentially hazardous if they have been processed in certain ways; for example, if a food contains certain additives or has been commercially sterilised (see below).
2. Many of the products require refrigerated storage to prevent food spoilage or achieve the stated shelf life.

1 Fish of the *Scombridae* family (e.g. tuna and mackerel) and *Scomberesocidae* family (e.g. saury) are commonly associated with histidine poisoning. Also see Fish in Appendix 4.

If it is uncertain whether a manufactured food is potentially hazardous, advice should be sought from the manufacturer.

What food is not potentially hazardous?

If a food does not contain pathogens, or does not support the growth of a pathogen or toxin production, then it is not potentially hazardous.

Some foods (e.g. foods that are naturally acidic) in their natural state do not support pathogen growth because their intrinsic properties create an unfavourable environment. Other foods may have been processed in a way (e.g. dried, salted, acidified) that minimises microbial growth or has eliminated microorganisms in the food (e.g. commercially sterilised food). In addition, the use of certain chemicals additives (e.g. nitrites, sulphites) or specialised packaging may minimise microbial growth in food.

The water activity (aw; related to moisture content) and pH of a food are two critical factors affecting microbial growth. Tables listing pH and water activity levels that will prevent microbial growth are provided in the Business Sector Food Safety Risk Priority Classification Framework (Food Regulation Standing Committee 2007) and these levels have been included in information on process limits in Appendix 3. Foods with water activity or pH levels below these critical values are not potentially hazardous foods.

Examples	Examples of food types considered to be not potentially hazardous:	
	• biscuits and crackers • bottled marinades • bottled pasta sauces • bottled salsas • confectionery • dried fruit • dry goods • fermented dried meats • fruit cake • fruit juices • hard cheeses • honey and jam	• nuts in the shell • peanut butter • pickles • plain breads and bread rolls • plain cakes • raw whole fruit and vegetables • salad dressings • sauces — asian/soy, ketchup style • salted dried meats • unopened canned foods • yoghurts

Note that the foods listed as not potentially hazardous might become potentially hazardous when the food is opened or altered in some way; for example, opening a can of soup, cutting up a whole melon, slicing cured meat, or reconstituting dry foods. Any food that contains a potentially hazardous ingredient must also be considered a potentially hazardous food. For example, sushi rice correctly prepared with vinegar may be acidic enough to prevent pathogen growth, but adding fillings such as fish, chicken or vegetables would make the end product potentially hazardous.

Whole uncracked eggs might have pathogens present on the shell that can contaminate the inside contents when they are cracked. As such, raw egg pulp and foods containing raw eggs (e.g. aioli, tiramisu) are considered potentially hazardous unless they have been appropriately treated.

Some foods might contain certain pathogenic microorganisms but not support their growth. Although by definition such foods are not 'potentially hazardous' they can still be a food safety hazard. For example, food containing viruses such as hepatitis A or norovirus can cause foodborne illness even if the pathogen has not multiplied in the food.

Further information

The critical pH and water activity levels that will prevent microbial growth are provided in the *Business Sector Food Safety Risk Priority Classification Framework* (Food Regulation Standing Committee 2007). This risk profiling framework is used nationally to classify business types on the basis of food safety risk.

Further information is also available from state and territory food regulatory agencies material. For example:

- NSW Food Authority's guideline *Potentially Hazardous Foods — Foods That Require Temperature Control for Safety* includes temperature control recommendations for some Asian and European foods and various bakery products. This guidance includes some common food safety issues and advice on demonstrating alternative methods of compliance.

For information on specific foods, see Appendix 4 and the regulatory agency websites in Resources and References.

Appendix 2: Time as a control for potentially hazardous food

Potentially hazardous food must be kept under temperature control to minimise the growth of foodborne pathogens and prevent the formation of toxins in the food. Toxin formation is not limited to toxins produced by pathogens; toxins may also be formed in foods through compositional degradation.

In practice in general terms, food must be kept at or below 5°C, or at or above 60°C, unless the food business can demonstrate that another practice it uses is safe (as per clause 25 of Standard 3.2.2). The temperature range between 5°C and 60°C is often referred to as the 'temperature danger zone' because food poisoning bacteria can grow rapidly in this range. However, short periods in this temperature range are unlikely to allow foodborne pathogens to grow (or produce toxins) to unsafe levels.

This appendix provides science-based guidance on the use of time as an alternative control for potentially hazardous food.

It is important to note that Standard 3.2.2A requires certain food service businesses (including caterers) to substantiate food safety controls when handling potentially hazardous food. See the chapter on Standard 3.2.2A for further details.

General guidance on using time as an alternative control

If a business uses time to control potentially hazardous food, it must ensure food handlers have and apply the appropriate skills and knowledge to use time correctly. This skills and knowledge would include, for example:

- knowledge that a type of food is potentially hazardous and able to support the growth of pathogenic microorganisms at temperatures between 5°C and 60°C
- knowledge that certain pathogens may be associated with certain foods
- knowledge that the time potentially hazardous food is kept between 5°C and 60°C is important because bacteria multiply faster (exponentially) as this time extends
- skill to monitor the time that potentially hazardous food is between 5°C and 60°C, which may accumulate over multiple steps (e.g. over receipt, transport and display periods)
- skill to manage the food correctly (e.g. use, refrigerate or discard it) depending on the times and temperatures that have been used during food handling operations.

The business will need to carefully consider any risks of pathogen growth or toxin production during its food handling practices. The growth rate of pathogens in potentially hazardous food depends on the:

- pathogen of concern in the particular food — some pathogens may be intrinsically present in the food because of its origins and other pathogens may have been introduced by cross contamination. Each pathogen has its own temperature tolerance and optimum growth temperature.
- characteristics of the food — its pH, water activity, solidity, complexity of ingredients, etc. will determine how favourable the food environment is for each pathogen to multiply or produce toxins

- starting temperature that food is brought out of temperature control — that is, whether it is refrigerated (5°C) or has been cooked (60°C)
- temperature of the environment — for example, temperatures greater than 21°C would allow most foodborne pathogenic bacteria to grow faster than at 10°C.

Taking these factors into account, the final level of pathogens (or toxins they may produce) will depend on the initial number of pathogens present in the food and the total time the food is between 5°C and 60°C (note that food safety risks may be greater if pathogen levels are higher to start with). The business will need to demonstrate that the time it has kept food between 5°C and 60°C has not allowed pathogen or toxin levels to adversely affect the safety of the food.

Ready-to-eat potentially hazardous food

As a general rule, the total time that a ready-to-eat potentially hazardous food can be kept at temperatures between 5°C and 60°C is **4 hours**. After this time the food needs to be discarded.

Generally, cooked potentially hazardous foods should be either served immediately, hot held at temperatures of 60°C or above, or cooled for later use as per subclause 7(3) of Standard 3.2.2. However, it is recognised that there are some circumstances where cooked food is kept at temperatures below 60°C; for example during further food preparation or transport, or when displaying food for service for short periods (e.g. at a temporary stall). In these circumstances, the food can be used or sold up to 4 hours but once 4 hours has passed, it needs to be thrown out.

It is important to note that the total time is the **sum** of any periods that the hot food is at temperatures below 60°C (i.e. the time is cumulative). For example, the time includes any transport and display time at temperatures between 5°C and 60°C.

How does this work in practice for hot food?

- Timing should start from when the temperature of the cooked ready-to-eat potentially hazardous food drops below 60°C (e.g. as checked with a probe thermometer).
- The cooked food can be used, sold or discarded within 4 hours.
- Once cooked food has been held for a total of 4 hours below 60°C, the time limit is exceeded and the food needs to be discarded.

Example

Displaying hot food below 60°C

A food business owner prepares a variety of cooked meat and vegetarian dishes and transports them to a market stall to display and sell over lunch. To keep the food safe, the business does the following:

- The food is cooked in the morning and immediately placed in insulated containers to keep it hot.
- The food is transported to the stall and placed in display units.
- The display units at the stall can keep food warm, but cannot hold the food at temperatures of 60°C or above. Because of this, the business knows that the food should not be kept for more than 4 hours.
- The business needs to monitor when the food first cools below 60°C (e.g. 11 a.m.). The business adds 4 hours to this time so it knows when the 4-hour period will be up (3 p.m.), and makes a note of this time.
- Once the 4-hour limit is reached (3 p.m.) any remaining food is removed from display and discarded.

The 2-hour/4-hour rule for ready-to-eat potentially hazardous food brought out of refrigeration

The 2-hour/4-hour rule is a rule of thumb that has been designed to help businesses deal with some of the practicalities of handling refrigerated ready-to-eat potentially hazardous food. It recognises there may be several circumstances where this type of food is brought out of refrigeration and held at temperatures above 5°C for convenience; for example while preparing food at a kitchen bench or displaying food for service for short periods.

The rule provides options for what can be safely done with ready-to-eat potentially hazardous food **brought out of refrigeration**, depending on how long it has been at temperatures above 5°C.

If the total time is:

- less than 2 hours, the food may be used, or refrigerated for later use
- between 2 and 4 hours, the food may still be used
- 4 hours or longer, the food needs to be thrown out.

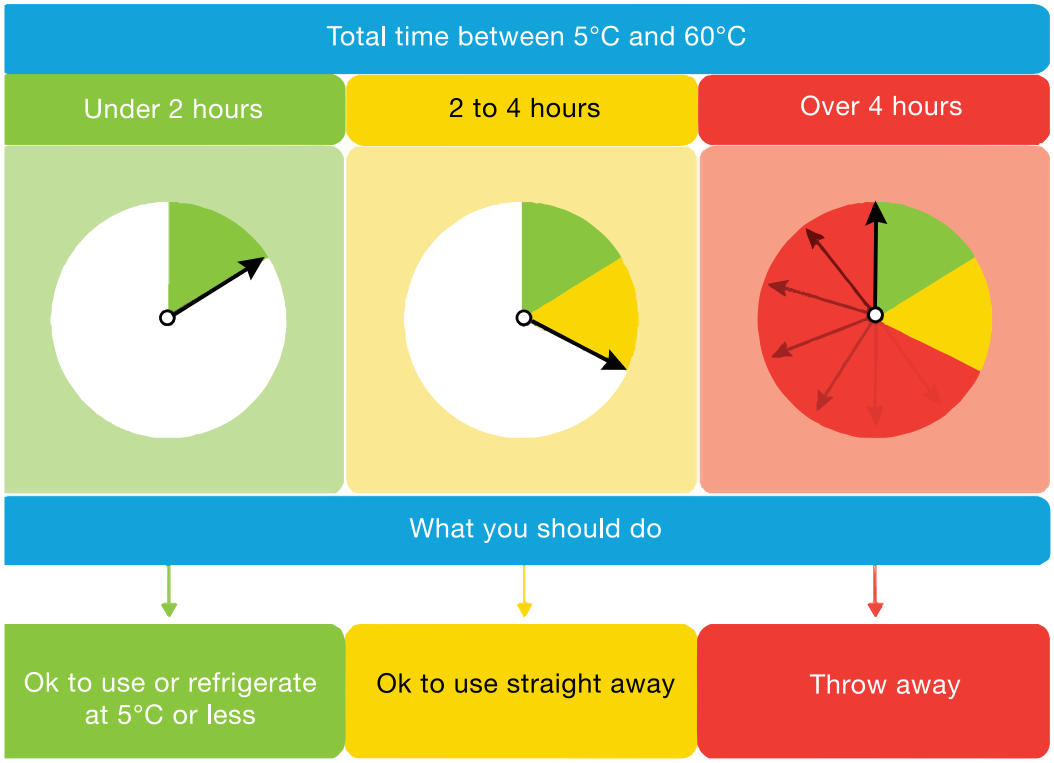


Figure 1 : The 2-hour/4-hour rule for potentially hazardous food brought out of refrigeration (image provided courtesy of SA Health)

The rule is designed so that once the 2-hour mark has been passed, the food cannot be re-refrigerated for later use: the business must use it or discard it before the total 4-hour time limit.

It is important to note that the time is **cumulative**: all time periods where the food is at temperatures between 5°C and 60°C need to be counted. This includes food preparation time (e.g. making sandwiches or sushi), any subsequent transport time (e.g. transferring from a caterer's business to the place of consumption, or from a preparation kitchen to a market stall) and any time periods that food is held for service or display between 5°C and 60°C.

How does the 2-hour/4-hour rule work in practice?

- Timing should start from when ready-to-eat potentially hazardous food is brought out of refrigeration (at 5°C or below).
- If food is held for no more than 2 hours above 5°C, it can be put back in the refrigerator to use later.
- Once food is held for more than 2 hours above 5°C, it needs to be used, sold or discarded before the total time of 4 hours is exceeded.
- Once food has been held for a total of 4 hours above 5°C, the time limit is exceeded and it must be discarded.

An example template that may be helpful for logging time as a control is provided in Appendix 8.

Extra caution may be necessary in some cases. Some foods should not be kept at higher ambient temperatures (e.g. > 25°C) for 4 hours; a maximum of 2 hours is advised. For example, the Australian Egg Corporation (AECL) recommends that egg products that are to be held warm (e.g. foods with a hollandaise or béarnaise sauce) are prepared just before service and held only for that service period (generally up to 2 hours) (AECL 2015). See also Appendix 4. Extra caution is advised with foods served to vulnerable people (young, elderly, ill or pregnant).

Examples

Food prepared and displayed at ambient temperature

A business prepares sushi and displays it for sale at ambient temperature on a conveyor belt. The sushi rice the business uses has been acidified to pH 4.6 so is not in itself a potentially hazardous food. However, meat, seafood and vegetable fillings are added to this rice, so the final product is potentially hazardous. To display the food safely, the business uses the 2-hour/4-hour rule as follows:

1. The time the fillings are removed from refrigeration is noted, as this is the start of the 2-hour/4-hour period (e.g. 11 a.m.). The fillings are added to the sushi rice and the final products displayed for sale.
2. Before the 2-hour mark (1 p.m.) the business assesses how well the sushi is selling, and decides whether to put some sushi back into refrigeration for later use.*
3. At the 4-hour mark (3 p.m.), the business discards any remaining sushi on display.

*If leftover re-refrigerated sushi is brought out to display later, the business needs to sell it within 2 hours (since this makes a total of 4 hours out of refrigeration) or discard it.

Applying time as a control for potentially hazardous food

How can businesses keep track of the time?

It is a good idea to keep records of the times that food is out of temperature control, and/or to identify displayed food with time stickers or colour-coded plates, etc. These measures will help the business keep track of how long food has been held in the temperature danger zone, and also to demonstrate the safety of their practice with potentially hazardous foods as per clause 25 of Standard 3.2.2. An example template for logging the time that ready-to-eat potentially hazardous food is out of refrigeration is provided in Appendix 8.

What if cooked food has been cooled – does the cooling time count?

No, cooling is a separate process. The 2-hour/4-hour rule only applies to ready-to-eat potentially hazardous food once it has been removed from refrigeration. It can be applied to previously cooked foods that have been cooled according to clause 7(3) of Standard 3.2.2, because this cooling process ensures pathogens that survived the cooking process will not be able to multiply to dangerous levels as the food cools. So, when this food is removed from refrigeration it can still be safe for up to 4 hours.

What if the food has been prepared by another business?

If a food business wishes to use the 2-hour/4-hour rule for ready-to-eat potentially hazardous food it has not itself cooked or otherwise processed to ensure its safety, they will need to know the temperature history of the food; for example, whether the food spent any time in the temperature danger zone during storage, preparation, or transport. If any of the available time has been 'used up' before the business receives the food, this time needs to be counted towards the total 4-hour period. If the business does not know this history, it should not make use of the 2-hour/4-hour rule and the food will need to be kept at or below 5°C or at or above 60°C.

Examples

Preparing food using cooked ingredients from another supplier

A café purchases precooked and chilled meats from a supplier to make salads and wraps that will be displayed at ambient temperature over the lunch period. To demonstrate this practice is safe, the cafe receives advice from the meat supplier that the cooked meat was cooled as per subclause 7(3), and has spent less than 30 minutes between 5°C and 60°C by the time it is delivered.

The café notes that it takes another 30 minutes to prepare the salads and wraps, leaving less than 3 hours for safe display for sale at ambient temperature. The salads and wraps are identified with stickers on wrapped food or on the display platters that indicate they are to be sold within 3 hours' time or discarded.

Can food be brought in and out of temperature control more than once?

Yes, as long as the periods are for less than 2 hours each and the total time out of temperature control is no longer than 4 hours. The business should keep track of each time period the food is between 5°C and 60°C so it is sure when the total 4 hours is used up. A sample template for logging times is provided in Appendix 8.

Examples

Displaying potentially hazardous food at room temperature more than once

A café cooks and cools chickens the day before they are used to make sandwiches. It then prepares the sandwiches with the cold chicken and displays them at ambient temperature (about 21°C) over the lunch period. If sales are slow, the business would like to refrigerate some sandwiches for sale the following day. To make sure this practice is safe, the business:

1. cools the cooked chickens according to the temperatures and times specified in Standard 3.2.2 subclause 7(3) (this cooling period does not count towards the 2-hour/4-hour rule);
2. records the time when the cooled chicken is first removed from refrigeration on the next day to make the sandwiches (this is when the 2-hour/4-hour rule starts);
3. adds 2 hours to this time and notes that this will be the time the chicken sandwiches are to be put back into refrigeration for use the next day (using the 2-hour part of the rule);
4. adds a further 2 hours to note that this will be the time any remaining chicken sandwiches are to be discarded (using the 4-hour part of the rule).

If the business chooses to keep any sandwiches for use the following day, the chicken must not have been out of refrigeration for more than 2 hours the first day. When the chicken sandwiches are removed from refrigeration for sale the following day, they need to be sold or discarded within 2 hours (so the total is less than 4 hours).

What if a business uses time periods other than those specified in this appendix?

A business may still use any temperature/time combination with any potentially hazardous food if it can demonstrate the practice it uses is safe (as per clause 25 of Standard 3.2.2).

What is the origin and science behind using time as a control?

The advice on using time as a control provided in this appendix was originally developed from information in the US Food Code 1999 and the UK Food Safety (Temperature Control) Regulations 1995. The US and UK guidance is incorporated into, respectively, the US Food Code (US FDA 2020) and guidance from UKFSA accompanying European EC Regulation 852/2004 The Food Hygiene Regulations 2006 (UK FSA 2007).

The guidance is largely based on scientific modelling and food experiments conducted in the US. This research included looking at worst-case scenarios, to predict the growth of target pathogens in food allowed to sit at ambient temperatures, and in hot foods removed from 60°C control. FSANZ conducted modelling on pathogen growth in foods brought out of refrigeration. Details are provided below.

A. Cold foods held out of refrigeration:

- US modelling simulated *Listeria monocytogenes* growth in food held constantly at a range of temperatures including ambient (23.9°C) and warmer (35°C). Results showed that growth of this pathogen is slow enough over 4 hours to not adversely affect the food's safety.
- FSANZ modelling simulated *Salmonella* growth in chilled food exposed to a range of temperatures from 5°C up to 30°C, for 2 hours and for 4 hours. For most temperature scenarios the growth was considered slow and low risk. However, as temperatures rose and times extended, the growth of *Salmonella* significantly increased. These results indicate some high-risk foods may need to be treated with extra caution when applying the 4-hour limit at warmer temperatures.
- The US and FSANZ worst-case modelling scenarios were based on liquid broths held constantly at warm temperatures, so the results exaggerate the pathogen growth rate in actual food. In most cases, foods would equilibrate more gradually with the surrounding environment's temperature, so generally pathogen growth is likely to be slower than modelling suggests.

B. Hot foods held below 60°C:

- The US Food and Drug Administration conducted in-house laboratory experiments with *Clostridium perfringens* as the pathogen of concern in cooked foods allowed to cool to ambient conditions.
- *C. perfringens* spores were inoculated into foods that were cooked and then cooled to temperatures that promote rapid pathogen growth. The growth data indicated that food should remain safe in these conditions over 4 hours.

The 2-hour component of the 2-hour/4-hour rule in Safe Food Australia has been incorporated to allow for the practicalities of businesses displaying refrigerated ready-to-eat food for short periods. It provides a safe, science-based option of re-refrigerating the food for later use.

Further information

Information on the US scientific work is available in Annex 3 of US Food Code 2013. Enquiries on the FSANZ modelling work may be made by contacting FSANZ.

For recommendations on the use of eggs, refer to AECL 2015 *The Culinary Uses of Eggs. Identification of Raw/Low-Cooked Egg Dishes that May be of Food Safety Concern*.

Appendix 3: Limits for food processes

The following table is intended as a quick guide to limits to be achieved for some food processes based on the control of commonly associated foodborne pathogens[1]. The nature of the food and the full process used to produce it, as well as how it is packaged and stored should be taken into consideration.

Process	Critical limit	Comment
Acidification	pH < 4.6	Prevents the growth of pathogenic microorganisms such as *Clostridium botulinum* and *Bacillus cereus*. Standard 2.3.1 — Fruit and Vegetables specifies that fruit and vegetables in brine, oil, vinegar or water (other than commercially canned) must not have a pH greater than 4.6. NSW Food Authority's Food Safety Guidelines for the Preparation and Display of Sushi provides guidance on the acidification of sushi rice.
	pH ≤4.2	Prevents the growth of *Salmonella*. NSW Food Authority's Food Safety Guidelines for the Preparation of Raw Egg Products provides guidance on the acidification of raw egg products such as mayonnaise and aioli.
Canning low-acid food (pH >4.6)	121°C for 3 mins (or equivalent)	Required for the elimination of *C. botulinum* spores (12 D process for proteolytic strains).
Confit	See sous vide.	
Cooking	Core temperature of at least 75°C for poultry	Recommended to eliminate *Salmonella* and *Campylobacter*.
	Core temperature of at least 75°C for stuffed, rolled, reformed or minced meat products	6D heat process for *Listeria monocytogenes.* See Meat and Livestock Australia's Guidelines for the Safe Manufacture of Smallgoods.

Process	Critical limit	Comment
Cook/Chill[2]		The combination of heat treatment, rapid chilling (to ≤ 5°C) and packaging should ensure the product is safe for the given shelf life. See Cox and Bauler's Cook Chill For Foodservice and Manufacturing: Guidelines for Safe Production, Storage and Distribution (Cox & Bauler, 2008) or PrimeSafe's Shelf Life and Labelling Requirements for Meat Products.
	Heat process of 70°C for 2 minutes or heating to 75°C (for refrigerated food with a short shelf life < 10 days)	6D heat process for *Listeria monocytogenes.*
	Heat process of 90°C for 10 minutes (or equivalent) — for refrigerated foods with an extended shelf life >10 days	6D heat process for non-proteolytic *C. botulinum.*
	Chilling to ≤ 3°C	The growth of non-proteolytic *C. botulinum* is prevented at 3°C and below. This temperature may be required for storage of extended shelf life cook chill foods where processing and package conditions can support *C. botulinum* growth.
Cooling[2]	60°C to 21°C within 2 hrs, then 21°C to 5°C within the next 4 hrs	As per Standard 3.2.2 subclause 7(3). Alternative cooling limits for cooked bulk processed meat products are provided in Appendix 5.
Drying	a_w < 0.85	Growth of pathogenic bacteria controlled (a_w 0.85 limit of growth of *Staphylococcus aureus* in salt conditions). Standard 2.2.1 — Meat and Meat Products requires food that is sold as dried meat to have a water activity of no more than 0.85. Spoilage by most xerophilic fungi prevented at a_w 0.70–0.75.

Process	Critical limit	Comment
Fermenting	pH limits will depend on the particular food and starter culture used. May need to be combined with other hurdles, such as a_w or refrigeration to achieve required preservation.	Fermentation process may use bacteria, yeasts or moulds. Starter culture used should result in adequate production of acid to prevent growth of other organisms present. Standard 2.5.3 — Fermented Milk Products requires the pH of fermented milk or yoghurt to be ≤4.5. Requirements for uncooked comminuted fermented meat are specified in Standard 4.2.3 – Primary Production and Processing Standard for Meat.
Pasteurising (thermal)	Temperature/time limits depend on the food and target microorganism.	Pasteurisation temperature and time equivalents for a 6D reduction of non-proteolytic *C. botulinum* and for *L. monocytogene*s are provided in Cox and Bauler (2008).
	72°C for 15 sec (or equivalent) for milk	See Standard 4.2.4 — Primary Production and Processing Standard for Dairy Products.
	64°C for 2.5 minutes for whole egg pulp 60°C for 3.5 minutes for liquid egg yolks 55°C for 9.5 minutes for liquid egg white	See Standard 4.2.5 — Primary Production and Processing Standard for Eggs and Egg Products.
Refrigeration	≤ 5°C	
Sous vide	55°C minimum water temperature	Effective pasteurisation or cooking is achieved by holding food at relatively low temperatures for an optimum time. A minimum temperature of 55°C is recommended to prevent growth of *Clostridium perfringens*. See NSW Food Authority's Sous Vide — Food Safety Precautions for Restaurants.

Process	Critical limit	Comment
Sugar concentration	a_w < 0.85	Concentrated sugar foods include jams, confectionery and fruit concentrates. Final a_w of ≤ 0.75 inhibits mould growth.
Vacuum and MAP packing	As per validated process — details will depend on the application. See above for cook chill foods.	Packaging materials should have good gas barrier properties.

a_w = water activity

1. Factors affecting pathogen growth, survival and toxin production are described in the International Commission on Microbiological Specifications for Foods (ICMSF 1996).
2. Useful practical guidance for controlling foodborne pathogens, particularly in cook-chill foods, is provided in Cox and Bauler 2008.

See Resources and References section for full reference information.

Appendix 4: Foods requiring special care

Some foods can pose a higher risk of causing foodborne illness and need to be handled with special care to manage food safety risks. Some general information and best practice tips for food safety are provided below for the following foods:

- aged meat
- doner kebabs
- eggs
- fish
- kombucha
- poultry
- raw and rare meat dishes (including uncooked fermented meats)
- rockmelons
- sous vide foods
- sprouting seeds
- sushi
- vacuum-packed and modified atmosphere-packed chilled food
- vegetables and fruits in brine, oil or vinegar.

Aged meat

Aging (dry or wet) meat is a process that uses certain microorganisms and enzymes to tenderise and flavour the meat over time. Dry aging generally involves encouraging the growth of certain moulds in a temperature- and humidity-controlled environment. Wet aging is generally done by vacuum sealing the meat in plastic and leaving it to mature in its own juices.

Food safety risks must be carefully managed, since the aging process can take a number of weeks, and if the conditions allow for pathogenic microorganisms to grow or produce toxins they will reach dangerous levels in this time.

Steps that can be taken to reduce risks include:

- using high-quality fresh meat from reputable sources
- not using thawed or frozen meat (as this will not have the required enzymes to break down the tissue)
- exercising strict hygiene at all handling stages
- ensuring the meat is kept under correct temperature and humidity conditions
- for dry aging meat specifically:
  - » separating the aging meat from other foods to prevent cross contamination
  - » confirming that any mould growing on the meat is the correct mould (*Thamnidium*)
  - » aging at –0.5°C to 1°C, relative humidity 75-85% (or other validated process)
- for wet aging specifically:
  - » ensuring meat is vacuum packed in food-grade plastic under hygienic conditions
  - » aging at <5°C

- monitoring the meat over the period to ensure it remains wholesome, indicated by the absence of dryness, discoloring, sliminess, odour
- conducting shelf-life and microbiological testing at the end of the maturation process to ensure microbiological specifications are met.

See also PrimeSafe *Aging of Beef* in Resources and References.

Doner kebabs

Doner kebabs are a potentially hazardous food that under certain conditions can permit rapid growth of disease-causing bacteria. Food safety issues can result from the meat being handled with poor hygiene practices, or being held at temperatures that are favourable for microorganism growth. Repeatedly cooking and chilling a large kebab block over multiple days also poses a high food safety risk.

To minimise the risks:

- Assemble the kebab block using high-quality meat and under strict hygienic conditions to minimise the chance of meat being contaminated from dirty hands or surfaces.
- Kebab meat should be thawed before cooking, as otherwise the cooking process can result in sections of meat being warmed and held at temperatures that allow pathogenic microorganisms to grow. Frozen kebab meat should be covered and thawed in the refrigerator or coolroom.
- When cooking kebab meat, it is recommended that the meat reaches a temperature of 75°C to kill pathogens that may be present.
- After cooking, the kebab meat should be kept at 60°C or above until it is served, to prevent growth of any surviving microorganisms.
- To further reduce risk, a second cook step of placing the sliced kebab meat on a grill immediately before serving is recommended.
- To prevent cross contamination, avoid touching raw and cooked meat with the same utensils or hands. Routinely disassemble shaving blades to clean and sanitise.
- Potentially hazardous foods served with kebab meat, such as dairy-based sauces and salads, should be held at or below 5°C until serving.
- Cooked kebab meat that is to be chilled and used later must be cooled rapidly to ensure the meat is safe: cool within two hours from 60°C to 21°C and then from 21°C to 5°C within a further four hours. Then refrigerate the meat at 5°C or less until ready to use.
- Kebab meat, cooked or raw, that has been held between 5°C and 60°C (the temperature danger zone) for four hours or more should be thrown out as it may be unsafe.
- It is not recommended to place uncooked kebab meat remaining on the spit/roaster at the end of the day back in the cooler for cooking the next day. This is because the meat has likely been between 5°C and 60°C for too long. Rather, it is good practice to make smaller batches of kebab meat to minimise the amount of left overs.

See also regulatory agency websites in Resources and References:

- NSW Food Authority - Doner Kebabs
- Queensland Health - Spit Roasts.

Eggs

Raw and low-cooked eggs have been linked to a significant number of foodborne illness outbreaks in Australia and are considered high risk for *Salmonella* (Astridge et al 2011, OzFoodNet 2012b, Moffat et al 2016). Egg products most commonly implicated in food poisoning include sauces and spreads (e.g. mayonnaise, aioli and hollandaise), desserts (e.g. tiramisu, mousse and deep-fried ice cream) and drinks (e.g. untreated eggnog and high-protein smoothies).

To avoid these issues, the use of safer alternatives such as commercially made products (e.g. commercial mayonnaise or aioli) or pasteurised egg pulp (readily available in 10L) is highly recommended. If foods can only be made with raw or low-cooked eggs, the following steps could be taken to minimise risks:

- Ensure eggs are sourced from a reputable supplier, are clean and uncracked.
- Use a clean and sanitised egg separator to separate eggs (not the broken shell).
- Acidify the yolk to pH 4.2 or below before blending with other ingredients (e.g. during preparation of aioli and mayonnaise), to prevent growth of pathogenic microorganisms that may have transferred from the egg shell.
- For foods that cannot be acidified to pH 4.2 or below (e.g. desserts such as mousse and tiramisu), a sous vide or in-house pasteurisation process should be used, such as the combination of time and temperature outlined below (see clause 21 of Standard 4.2.5 – Primary Production and Processing Standard for Eggs and Egg Products).

Time and temperature combinations to pasteurise egg product:

Egg product	Retention temperature to be no less than (°C)	Retention time to be no less than (minutes)	Maximum temperature to be immediately rapidly cooled to (°C)
Egg pulp (without any sugar or salt)	64	2.5	≤ 7
Liquid egg yolk	60	3.5	≤ 7
Liquid egg white	55	9.5	≤ 7

Minimise the time the product is held at ambient temperatures: refrigerate the egg product immediately after preparation, and keep it refrigerated until it is consumed.

- For egg products that are to be held warm (e.g. foods with a hollandaise or béarnaise sauce, or one of their derivatives) it is recommended that the product is prepared just before service and held only for that service period (generally up to 2 hours) (Australian Egg Corporation Ltd, AECL 2015).
- The AECL generally recommends to only prepare enough product to be used on the same food service day, keeping the product under strict temperature or time control and discarding it within 24 hours of manufacture (AECL 2015).

See also in Resources and References:

- Australian Egg Corporation Ltd The Culinary Uses of Eggs. Identification of Raw/Low-Cooked Egg Dishes that May be of Food Safety Concern
- NSW Food Authority Food Safety Guidelines for the Preparation of Raw Egg Products.

Fish

Fish is susceptible to rapid growth of pathogenic and spoilage bacteria if not handled correctly. Certain fish may also contain toxins that can cause foodborne illness (see 'Histamine poisoning' below). Exercising hygienic handling and temperature control will generally minimise food safety issues. Steps that can be taken include:

- Keep fresh fish chilled to restrict bacterial growth: refrigerated or on ice between 0°C and 4°C, or hard frozen.
- Avoid fluctuations in temperature once the fish is chilled or frozen.
- Thaw fish in a refrigerator in a container and/ or on the bottom shelf to avoid contaminating other food with raw fish juices. Fish can be thawed submerged in water-tight packaging in cold water, changing the water every 30 minutes so that it stays cool.
- Fish should not be held at ambient temperatures — if this is unavoidable during processing, the time should be kept to an absolute minimum.
- Fresh or thawed fish are best used within two days.

Histamine poisoning

- Certain fish contain bacteria that convert the amino acid histidine in fish flesh to histamine. If these fish are kept unrefrigerated for too long and start to decompose, the levels of histamine produced can be toxic and cause foodborne illness (known as histamine or Scromboid poisoning).
- Fish of the *Scombridae* and *Scomberesocidae* family (e.g. tuna, mackerel, bonito, butterfly kingfish, sardines, marlin and saury) are commonly associated with histamine poisoning.
- Cooking or freezing does not destroy the histamine and fish containing unsafe levels of histamine will not necessarily appear spoiled.
- It is important that freshly caught fish capable of producing histamine are placed on ice immediately, and kept under strict temperature control until eaten.

Kombucha

Kombucha is a fermented beverage made from brewed tea and sugar and a symbiotic culture of bacteria and yeast (SCOBY). This beverage can present food safety issues if not produced with proper care, including excessive acid or alcohol levels from incorrect fermentation, and contamination from the SCOBY or dirty equipment. Steps that can be taken to avoid these issues include:

- Use proven (e.g. commercial) SCOBY starter cultures that are known to be uncontaminated and able to safely ferment.
- Use clean and sanitised equipment and strict hygiene throughout the process.
- The initial tea infusion is around pH 5 and suitable for potential contaminants to grow, so should be cooled quickly (from 60°C to 20°C within 2 hours). The SCOBY should then be added as soon as possible to begin the fermentation and subsequent acid production.
- Food-grade non-metallic containers should be used to avoid chemicals leaching from the container into the beverage.

- Since fermentation is at room temperature it is important to ferment in the presence of air for rapid acetic acid production, and to monitor the pH level during fermentation and in the final product. The production of acetic acid during fermentation needs to:
  - » be quick enough to transform the initial tea from a potentially hazardous food to a more acidic (pH 4.2 or less) non-potentially hazardous food that does not support pathogen growth or toxin production
  - » cease at the end-product stage so the final kombucha does not become too acidic to consume safely (final pH of ≥2.5 is typical).
- Check that the alcohol levels in the final product are within safe limits (typically less than 1% alcohol). Standard 2.6.2 – Non-alcoholic Beverages and Brewed Soft Drinks specifies alcohol contents for non-alcoholic and brewed soft drinks.
- The final product can be pasteurised by hot filling to avoid spoilage with moulds or yeasts.
- Kombucha is not recommended for consumption by the immunocompromised.

See also Nummer (2013) in Resources and References.

Poultry

Raw poultry has a high likelihood of being naturally contaminated with the pathogenic bacteria *Salmonella* and *Campylobacter*. Care should be taken when handling raw poultry to avoid cross-contaminating other foods and food contact surfaces. The following steps are recommended to reduce food safety risks:

- Utensils, chopping boards and other equipment used for handling raw chicken should not subsequently be used with any ready-to-eat foods (e.g. salads) and should be cleaned and sanitised after use to prevent cross contamination issues. Hands should be washed thoroughly with soap and warm water before and after handling poultry.
- Raw poultry should not be washed before cooking as this will not eliminate the microorganisms and may result in contamination of the sink and other food.
- Poultry should always be cooked thoroughly. An internal temperature of 75°C in the thickest part of the meat is recommended (it can be checked with a probe thermometer).
- If cooked poultry is to be held hot for serving it should be kept at a minimum of 60°C to prevent microorganism growth.
- If the cooked poultry is to be chilled for later use, it should be cooled from 60°C to 21°C within two hours and then from 21°C to 5°C within a further four hours to ensure it is safe.
- Poultry should be stored at or below 5°C to prevent growth of pathogenic microorganisms.

Pâté

- Poultry livers should be cooked at 70°C for at least two minutes (or equivalent) to ensure the target pathogenic microorganisms (*Campylobacter*) are destroyed (Merritt et al 2011). The livers may still appear slightly pink but should never be raw or bloody.
- If cooked pâté is cooled for subsequent use, it should be cooled rapidly (as above) to prevent growth of spore-forming bacteria such as *Clostridium perfringens*.

Raw and rare meat dishes

Raw meat can be contaminated with pathogenic bacteria including *Salmonella*, *Campylobacter* and pathogenic *E. coli*. Cooking meat will generally destroy these microorganisms; however, raw/ rare meat dishes such as ceviche, kibbe, steak tartare and some burgers may not undergo a pathogen control step. The onus is on the food business to ensure the microbiological safety of the meat.

Precautions to be taken when preparing raw and rare meat dishes include:

- Only select raw meat that it is high quality (e.g. whole muscle primal cuts) and very fresh from a reputable supplier.
- Refrigerate raw meat at or below 5°C before it is prepared and served. It should be stored on the bottom shelf of the refrigerator or in sealed containers to avoid juices dripping onto other foods.
- To prevent contamination of the meat during handling, wash hands thoroughly with warm water and soap both before and after touching raw meat. Ensure clothing and work spaces are kept clean.
- To avoid raw meat juices cross-contaminating other food and food contact surfaces:
  - » Prepare raw meat dishes away from other foods, especially ready to-eat foods.
  - » Trim the exterior of the meat, then use another knife and board for further chopping (or clean and sanitise the trimming knife and board before further use).
  - » Use a separate chopping board and utensils for other foods, or thoroughly clean and sanitise all equipment used with raw meat before using it for other foods.
- Raw meat dishes should not be served to vulnerable people, such as children, the elderly or ill.
- Minced meat, such as in hamburger patties and sausages, should generally not be served rare or raw. It should be cooked right through, as the mincing process distributes surface pathogens throughout the meat. High-quality mince made on-site from whole muscle and used immediately may, however, pose a lower risk.

Uncooked fermented sausages

Uncooked fermented sausages such as salami, pepperoni and mettwurst require special care to ensure they do not contain or support the growth of pathogenic microorganisms to dangerous levels. These products typically rely on processing that results in low water activity and/or pH to make them safe. Standard 4.2.3 — Primary Production and Processing Standard for Meat sets out requirements for producers of ready-to-eat meat to manage food safety risks. Standard 1.6.1 —Microbiological Limits for Foods sets microbiological specifications for these types of products.

See also in Resources and References:

- Australian Standard AS 4696-2007 *Hygienic Production and Transportation of Meat and Meat Products for Human Consumption*
- Meat and Livestock Australia's Guidelines for the Safe Manufacture of Smallgoods.

Rockmelons

Rockmelons contaminated with *Salmonella* and *Listeria monocytogenes* have been implicated in food poisoning cases in Australia (e.g. see Munnoch et al 2009). Evidence from overseas suggests that contaminated water, fertiliser, contact with pests or animals and insufficient cleaning of the fruit before sale could be sources of contamination. *Salmonella* or other pathogenic microorganisms (e.g. *E. coli*) that may be present in rockmelon skin can transfer to the flesh when the fruit is cut. The rockmelon's flesh can then support the growth of the pathogen.

To minimise food safety risks:

- Thoroughly wash and dry hands before and after handling fresh rockmelons.
- Select high-quality melons that are not bruised or damaged.
- Use clean cutting boards and utensils when handling fresh produce.
- Thoroughly clean and sanitise cutting boards, utensils and counter tops that have been in contact with rockmelons after use.
- Refrigerate fresh produce within 2 hours of peeling or cutting. Leftover cut produce should be discarded if left at room temperature for more than 2 hours.
- Display the cut fruit chilled (surrounded by ice or refrigerated at or below 5°C), or use time as a control (see Appendix 2).

Sous vide foods

Sous vide (French for 'under vacuum') is a cooking method where food is sealed in vacuum packaging and heated in a water bath, often at low temperatures for long periods. The reduced-oxygen environment created by the vacuum packaging can allow the growth of pathogens such as *Clostridium botulinum* and *Clostridium perfringens* and pose a risk to food safety.

Steps that can be taken to minimise food safety risks include the following:

- Ensure equipment is adequate for the cooking process; that is:
  - » it is capable of reaching and maintaining the required water temperature for the whole cooking time
  - » it circulates water properly to ensure even heat distribution
  - » the temperature gauge correctly measures and displays the water temperature.
- Avoid cross contamination when handling raw food to be cooked, by exercising correct hand hygiene, etc.
- Do not use mechanically minced, tenderised, rolled or reformed meats.
- Preparing thinner slices will allow portions to heat and cool more rapidly than thick cuts, reducing risks of pathogens growth and toxin formation.
- Ensure vacuum sealing does not cross contaminate food e.g. use separate equipment for raw and ready-to-eat foods.
- Cook using water bath temperatures of at least 55°C, so that the meat surface reaches at least 54.5°C.
- Limit the time that the food temperature is below 54.5°C during cooking to 6 hours.
- Check the food and water temperature with an accurate probe thermometer.

- Eat the cooked product immediately or rapidly chill it, for example in an ice slurry.

For further information, including times and temperatures for cooking different thicknesses of meat, see regulatory agency websites (e.g. NSW Food Authority's Sous Vide — Food Safety Precautions for Restaurants) in Resources and References.

Seed sprouts

Seed sprouts such as alfalfa, mung bean and clover sprouts can become contaminated with pathogens such as *Salmonella* and pathogenic *E. coli* resulting from contamination of seeds, contamination during sprouting or subsequent processing. The warm, humid and nutritious environment provided for seeds to sprout can create an ideal environment for food poisoning bacteria to grow. Sources of contamination include fecal matter from animals in the field, fertilisers, soil and contaminated water used during growth and processing. As with any fresh ready-to-eat produce, contamination can also occur from poor handler hygiene and use of unsanitary equipment.

To reduce the risks of foodborne illness from sprouting seeds, it is important to:

- Source good quality seed from a reputable supplier.
- Decontaminate seeds (for example with a bleach solution) before sprouting.
- Use good hygienic practices throughout production.
- Store and transport sprouted seeds at ≤ 5°C.

Standard 4.2.6 — Production and Processing Standard for Seed Sprouts contains requirements for sprout processers.

Sushi

Sushi as a whole is considered a potentially hazardous food, regardless of whether or not it contains rice acidified with vinegar. This is because:

- Even if rice is acidified enough to inhibit the growth of pathogenic bacteria (i.e. to a pH of 4.6 or lower), added fillings are not generally acidified and so could support bacterial growth.
- If vinegar has not been thoroughly mixed through the rice or has been used only as a flavouring, the rice may not be acidic enough to prevent growth of pathogens to dangerous levels.

To minimise food safety risks with sushi, particularly sushi displayed at ambient temperatures, the following steps are recommended:

- Select high-quality ingredients, especially if using raw meat, raw fish or raw or lightly-cooked egg fillings or sauces. (See also Eggs, Fish and Raw meat sections above.)
- Protect all ingredients from contamination during receipt, preparation and storage.
- Keep ingredients under temperature control, ideally refrigerated at 5°C or below.
- Acidify the sushi rice to a pH of 4.6 or less. Rice that is not acidified to this pH or lower may still able to support the growth of pathogenic bacteria.
- Avoid cross-contamination during sushi preparation, by washing vegetables before use, thoroughly cooking fillings, employing good hand hygiene and cleaning and sanitising utensils and equipment. As above, extra care is required with ingredients such as raw fish and raw meat.

- Once made, sushi should be kept under temperature control, preferably refrigerated at 5°C or below. If the sushi is displayed for sale at temperatures above 5°C, the **total** time the sushi is above 5°C should not exceed 4 hours.
- Exposed sushi on display should be protected from the likelihood of contamination, for example in display cabinets or on covered plates on a conveyor belt.

See also regulatory agency websites (e.g. NSW Food Authority's Food Safety Guidelines for the Preparation and Display of Sushi) in Resources and References.

Vacuum-packed and modified-atmosphere-packed chilled food

Packaging food under vacuum or in a modified atmosphere can extend its shelf life by limiting growth of food spoilage microorganisms. However, it can also create a favourable environment for certain pathogens that can grow in low-oxygen conditions.

In refrigerated vacuum-packed ready-to-eat products (e.g. sandwich meats and cheeses) *Listeria monocytogenes* is of particular concern, because it can readily grow at low temperatures and in the presence of salt. In vacuum-packed cook-chilled foods (e.g. some meat products), *Clostridium botulinum* is the main concern, as *Clostridium* spores that may have been activated by the cooking process can then multiply in the packaged food. Food poisoning caused by *Listeria* or *Clostridium* can be fatal. Technical expertise is needed to ensure the risks are strictly managed.

Some general steps that may be taken to prevent food safety issues include:

- using high-quality ingredients
- using strict hygiene practices to minimise the chance of any cross-contamination from handling
- ensuring food contact surfaces of packaging and packaging machines are clean and sanitary
- ensuring strict temperature control to minimise the opportunity for bacteria to grow: (e.g. *C. botulinum* does not grow or produce toxins below 3°C)
- correctly using processes or additives to reduce the water activity and/or pH of packaged foods to create unfavourable conditions for bacterial growth and toxin production (e.g. pH <4.6 throughout the food)
- heat treatment after packaging to kill remaining bacteria
- ensuring nominated shelf life is validated.

See also the following in Resources and References:

- Cox and Bauler — Cook Chill for Food Service and Manufacturing
- NSW Food Authority — Sous Vide - Food Safety Precautions for Restaurants
- SA Health — Vacuum Packing Ready-To-Eat Meat Food Safety Requirements
- UK Food Standards Agency and Food Standards Scotland — Vacuum packed chilled food guidance

Vegetables and fruits in brine, oil or vinegar

Vegetables and fruits packed in oil, vinegar or brine, other than commercially canned products, can provide a favourable environment for anaerobic pathogens such as *Clostridium botulinum* to grow and produce dangerous toxins if they are not correctly processed to reduce pH.

To minimise food safety risks:

- fruit and vegetables should be acidified to a pH of 4.6 or below before covering with oil, vinegar, brine or water
- jars, bottles, plastic pouches, etc. must be suitable for use with the food, and should be sterile or cleaned and sanitised before use
- unless processed to be shelf stable (e.g. hot packed into hermetically sealed containers) products should be considered to be perishable and stored and distributed under refrigeration
- shelf life should be validated.

Standard 2.3.2 — Fruit and Vegetables requires fruit and vegetables in brine, oil, vinegar or water (other than commercially canned products) to have a pH of 4.6 or below.

Appendix 5: Cooling of meats after cooking

Whole cooked bulk meat products such as hams and processed sausages are inherently slow to cool due to their size and shape. Standard 3.2.2 clause 7(3) allows for alternative cooling processes to be used if the business can demonstrate that the process used will not adversely affect the microbiological safety of the food, as outlined under clause 25. It is important that alternative cooling processes are checked with the relevant enforcement agency.

Australian Standard AS 4696:2007 *Hygienic Production and Transportation of Meat and Meat Products for Human Consumption* specifies alternative cooling requirements for cooling cured and uncured meat products. These cooling regimes have been based on scientific evidence that showed that the growth of *Clostridium perfringens* can be controlled to safe levels.

Cooling requirements for cooked meat products (AS 4696: 2007)

Temperature	Maximum time (hours) to achieve temperature specified	
	Uncured products	Cured* products
52°C to 12°C	Within 6 hours	Within 7.5 hours
12°C to 5°C	Within 24 hours$	Within 24 hours$

* A product is cured if curing salts have been added at a level that preserves the product, being a minimum 2.5% salt on water phase and 100 ppm nitrite in-going.

$ the cooling to 5°C must be within 24 hours of completion of cooking and is in addition to cooling from 52°C to 12°C within the specified time.

Businesses should monitor the cooling process to make sure it meets the specified requirement.

If a producer of ready-to-eat meats is unable to meet these cooling requirements, it must be able to validate the alternative process it wishes to use. Meat and Livestock Australia provide guidance on documenting alternative arrangements for cooling in Guidelines for the Safe Manufacture of Smallgoods — see Resources and References.

Appendix 6: Cleaning and sanitising surfaces and utensils

This appendix includes information on cleaning and sanitising eating and drinking utensils and food contact surfaces. It is for information only and businesses are not legally obliged (under the food safety standards) to clean and sanitise at the temperatures or times specified below.

Cleaning and sanitising are separate procedures, and sanitising is distinct from sterilising.

Cleaning is a process that removes visible contamination such as food waste, dirt and grease from a surface, usually using water and detergent. During the cleaning process, microorganisms will be removed but the cleaning process is not designed to destroy microorganisms.

Sanitising is a process that destroys microorganisms, reducing the numbers present on a surface to a safe level. This is usually achieved by the use of both heat and water, or by specific sanitising chemicals (detergents are generally not sanitisers).

Sterilising is a process designed to destroy all microorganisms including microorganisms that have formed a protective coat (spores). The standards do not require eating and drinking utensils and food contact surfaces to be sterilised.

Cleaning and sanitising should usually be done as separate processes. A surface needs to be thoroughly cleaned before it is sanitised, as sanitisers generally do not work well in the presence of food residues and detergents.

The six recommended steps for effective cleaning and sanitising are:

1. Pre-clean: scrape or wipe food scraps and other matter off surfaces and rinse with water.
2. Wash: use hot water and detergent to remove grease and food residue. (Soak if needed.)
3. Rinse: rinse off detergent and any loosened residue.
4. Sanitise: use a sanitiser to destroy remaining microorganisms (refer to manufacturer's instructions.
5. Final rinse: wash off the sanitiser if necessary (refer to manufacturer's instructions).
6. Dry: allow to drip dry or use single use towels.

Cleaning and sanitising can be done manually (e.g. using spray bottles or sinks), or using dishwashers or other specialised equipment, depending on the size and number of items to be cleaned and sanitised. An example of a simple double sink arrangement that may be suitable for small amounts of utensils or small equipment is illustrated below.

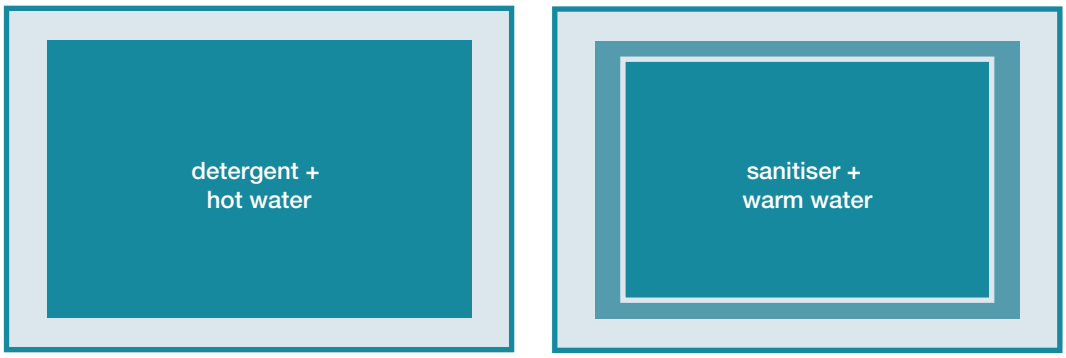


Figure: Example of cleaning and sanitising using a double sink. (The 2nd sink could alternatively have waterat 77°C or hotter if no sanitiser chemical is used.)

Cleaning

The thorough cleaning of eating and drinking utensils and food contact surfaces is a critical step before sanitising. Food businesses must use a cleaning process that ensures the utensil or food contact surface looks clean, feels clean and smells clean.

Effective cleaning

For effective cleaning, the following factors should be considered:

- Warm to hot water is generally needed — Heated water will help remove grease or fat but the temperature should not be so hot that it bakes food residue onto the surface. For example, 54°C to 60°C has been recommended (Mallman et al 1947) for washing utensils as higher temperatures tend to bake on food residues.
- Detergents should be appropriate for the task — For example, household detergents may suffice for small-scale manual washing, but specialised detergents may be needed depending on the residue to be removed and the equipment being used.
- Detergents containing sanitisers are not required — If such a detergent is used, advice on whether it can clean and sanitise to the required standard should be sought from the manufacturer or supplier.
- The use of a mechanical washer for large volumes of washing up is preferred — Studies have found that mechanical washing is consistently more effective than washing up by hand (e.g. Sigua et al 2011).
- Cleaning without water may be necessary in some situations. Whatever method is used it must achieve the intended outcome: that is, that the utensil or surface looks clean, feels clean and smells clean.

Sanitising

Sanitation of eating and drinking utensils and food contact surfaces should only be done after they have been thoroughly cleaned; otherwise it may not be effective. Sanitising can be achieved through the use of hot water, chemicals or other processes. Some examples are:

- soaking items in very hot water (see below)
- soaking items in diluted bleach (see below)
- saturating items with 70% alcohol
- applying a commercial food-grade sanitiser according to the manufacturer's instructions, with particular attention to the required concentration and contact time.

Effective sanitation

For effective sanitation, the following factors are important:

- All surfaces to be sanitised must be clean, since sanitisers generally do not work well in the presence of food residues or other soil.
- Sanitisers should be used at the correct concentration (too low or too high is not effective) and temperature and for the correct contact time. Ideally, details will be specified by the sanitiser's manufacturer. Using products with informative labels or product specification sheets will enable details of use to be easily checked.
- Some sanitisers require extended contact time to ensure pathogens are reduced to a safe level.
- Diluted sanitisers often have a shorter shelf life than the concentrated form, so this should be checked before use, and a fresh batch made if needed.
- All surfaces to be sanitised should be completely covered with the sanitising solution, using a dip or spray. Special attention should be given to equipment with surfaces that are difficult to get at, such as stab mixers, blenders, meat slicers and can openers. Equipment may need to be dismantled to gain proper access to the surfaces that need to be sanitised.
- After sanitising, utensils and surfaces should be thoroughly dried. If used while still wet, there is a greater chance that they could pick up dirt or other contaminants. Air drying is preferable. If towels are used they should be clean, dry and ideally single use, because if they become contaminated they may then transfer pathogenic microorganisms between items. Tea towels should not be repeatedly used without washing and drying between uses.
- Care should be taken not to re-contaminate sanitised utensils and equipment; for example by ensuring they are packed away with clean hands and stored in a clean and sanitary place.

Hot water

Sanitation using hot water can be achieved manually (e.g. in a sink) or mechanically (e.g. with a dishwasher). The decision to use hot water should consider whether the items to be sanitised can withstand the sanitation temperature and whether the equipment used can produce the intended outcome. Whatever the method used it should be able to sanitise the utensil or surface so that it does not permit the transmission of infectious disease.

Manual sanitation

The method used for manual sanitation needs to ensure that utensils or food contact surfaces are exposed to a time–temperature combination that ensures they are sanitised. For example, the US Food Code 2020 requires utensils and food contact surfaces to be immersed in water at a minimum temperature of 77°C for at least 30 seconds. To achieve this, the sink may need to have a heating element or hot water delivered at a higher temperature. Australian Standard AS 4674-2004 *Design, Construction and Fit-Out of Food Premises* recommends that sinks used for sanitising deliver hot water of at least 80°C.

The water temperature may need to be monitored with a thermometer to confirm it remains hot enough for the whole sanitation period. Care should be taken to avoid scalding hands.

Commercial dishwashers

Businesses may choose to sanitise using a commercial dishwasher or glasswasher. There is no prescribed method for sanitation by dishwasher; however the information below is provided for consideration.

AS 4674-2004 generally recommends that dishwashers and glasswashers:

- are capable of washing and rinsing in one continuous operation
- when used for sanitising:
  - » do not contain brushes
  - » where hot water is used to sanitise, only operate on the sanitising cycle when the water is at sanitising temperature
  - » the water temperature used in the sanitising 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 sanitising rinse and/or drying cycles) is sufficient to ensure that the utensils are sanitised.

International standards that specify temperatures include:

- the US Food Code 2020 and associated standard NSF 3: Commercial Warewashing Equipment (NSF International 2012), which require:
  - » a minimum wash and rinse temperature of 74°C for stationary rack, single temperature dishwashers
  - » minimum 66°–71°C wash temperature and 82°C rinse temperature for other dishwasher types

(a list of certified dishwashers is available at www.nsf.org — search Certified Products and Systems)

- the European standard for commercial dishwashing with one-tank dishwashers (DIN Standard 10512), which requires 60–65°C wash (in the wash water tank) and 80–85°C rinse (in the rinse tank or boiler) where there is no sanitiser chemical used.

Generally, commercial dishwashers should be able to use high temperatures (greater than 80°C) in their sanitation rinse cycles. The program results in the cumulative buildup of heat in the item that affects sanitation. Businesses should use the program that the manufacturer has specified for sanitising. See also Best practice use of dishwashers, below.

It may be useful to monitor the surface temperature of utensils and equipment. The US Food Code requires that the food utensils and equipment being sanitised reach a final **surface** temperature of 71°C if hot water mechanical operations are used for sanitising.

The surface temperature of items in the dishwasher could be checked, for example, using the following methods:

- indicator temperature-sensitive tape applied to items in the dishwasher — these tapes change colour irreversibly once exposed to certain temperatures and can be easily applied to plates or utensils
- a maximum-registering thermometer attached to items with tape or an elastic band
- a laser thermometer directed at items as soon as the dishwasher is finished and opened.

Domestic dishwashers

Domestic dishwashers may be used by small food businesses (e.g. some home-based businesses) where only small volumes of dirty eating and drinking utensils are generated. Domestic dishwashers consistently perform better than washing dishes by hand.

Generally, while domestic dishwashers use lower rinse temperatures than commercial dishwashers, the cycles are longer to compensate for these lower temperatures.

While there is no prescribed method for sanitation with domestic dishwashers specified in the standards, the hottest and longest dishwasher program is recommended (e.g. 'hygienic wash' or equivalent heavy-duty, high-intensity settings). Lighter settings may not reach a hot enough temperature for long enough to sufficiently reduce microorganism levels.

Factors affecting dishwasher effectiveness

A Canadian study (Sahai et al 2015) showed that the rinse temperature and amount of food residue on utensils placed in the machine significantly affect the efficacy of domestic dishwasher sanitation:

- hotter rinse temperatures (especially 55°C or above) resulted in fewer bacteria remaining on utensils
- if utensils were 'somewhat' or 'very' soiled before washing, they were less likely to be effectively sanitised due to the presence of food residue protecting bacteria.

For best sanitising outcomes with domestic dishwashers the study recommended that:

- cutlery should be loaded with handles down and utensils and equipment should not nest closely together
- the manufacturer's recommended cycle should be used – e.g. the sanitation setting or heavy duty/ pots and pans cycle (rather than lighter/eco cycles)
- incoming water should be at the temperature specified by the manufacturer for the machine used.

Best-practice use of dishwashers

As with any food handling task, people responsible for using a dishwasher should have and apply the appropriate skills and knowledge. Operators should know how the machine works, what on-site variables affect operation, and what action (e.g. monitoring and maintenance) is needed to ensure its effective operation. Manufacturers' instructions on dishwasher use should be followed, regardless of the type of dishwasher.

Some general best-practice tips include:

- using the correct detergent/ chemical (if applicable) in the washer
- scraping/rinsing off excess food from utensils and crockery before loading
- loading the utensils and crockery to allow space around each item for water to reach their surfaces
- using effective temperatures for both washing and rinsing —the longest, hottest cycle available is recommended (particularly if heat is being used to sanitise: use the program designed by the manufacturer for sanitation), rather than lighter cycles or economy settings
- visually checking that equipment and utensils are clean and dry once the dishwasher is finished
- using clean hands to unpack the items
- cleaning the dishwasher regularly (including filters) and avoiding repeatedly re-using the wash water, to ensure there is no build-up of food residues
- maintaining and servicing the dishwasher regularly and correctly to ensure it is working properly.

Chemical sanitisers

Chemicals may be used to sanitise food utensils and equipment manually or in dishwashers that have been designed for use with chemical sanitisers. The chemicals used should be suitable for use with food contact surfaces and eating utensils (food grade).

Traditionally used chemical sanitisers include chlorine-based compounds (e.g. hypochlorite or bleach), quaternary ammonium compounds, alcohol, iodophors (iodine), organic acids (e.g. peracetic acid) and hydrogen peroxide.

Other chemicals may be just as effective as traditional chemicals if correctly prepared and used. However, alternatives such as vinegar, lemon juice and methylated spirits are not generally recommended unless specific methodology (including concentration, pH, temperature, contact time, etc.) has been validated and verified to be effective. Non-commercial products often do not come with specific instructions for use as sanitisers, and variations in solution strength and application procedures may make these alternatives less effective than commercial sanitisers. Some chemicals may leave residues that taint food.

Disinfectants and cleaning agents designed for use on floors and toilets are generally not suitable for use with food contact surfaces.

Bleach

Bleach (sodium hypochlorite, NaOCl) is one of the most commonly used chemical sanitisers in the food industry. Plain bleach that is free from fragrances and other additives is generally recommended to minimise possible contamination or tainting from added chemicals. The table below lists various bleach dilutions and illustrates how the concentration of bleach required for effective sanitising depends on the temperature of the water. For example, 100 ppm chlorine is generally recommended in cold water (using the 13°C option below) and 50 ppm is effective in warm water. The contact time required may vary depending on the product used (see manufacturer's instructions) but, as a general indication, is about 10–30 seconds. Diluted bleach solutions should be discarded after 24 hours because the active ingredient breaks down and becomes ineffective.

Dilutions of bleach using commercial (10% chlorine) or household bleach (4% chlorine)

Final chlorine concentration required	25 ppm	50 ppm	100 ppm
Minimum water temperature	49°C	38°C	13°C
Volume to add to 10 litres of water	2.5 ml commercial bleach **or** 6.25 ml household bleach	5 ml commercial bleach **or** 12.5 ml household bleach	10 ml commercial bleach **or** 25 ml household bleach

Best-practice use of chemical sanitisers

General points on effective sanitation are provided at the start of this section. To ensure the sanitiser is suitable for use and is used correctly, manufacturer's instructions should always be followed. The user should be sure about:

- what the sanitiser can be used for (whether it is safe to use for the utensils and food contact surfaces the business needs to sanitise)
- what the sanitiser can achieve in destroying microorganisms
- how to correctly use the sanitiser, including dilution rate, exposure/contact time, rinsing and shelf life (of concentrated and diluted solutions).

If instructions are not clearly provided with the product, further advice should be sought from the supplier or manufacturer. Note that the temperature, pH and hardness of the water can all affect a sanitiser's effectiveness (US Food Code 2020). In addition, different brands of sanitisers may vary in the details of how they should be used; for example, what dilution to use or whether rinsing is needed. Some manufacturers may provide kits that can be used to check the concentration of diluted sanitisers.

To avoid microorganisms building up resistance to any one active agent, it is a good idea to regularly change the type of sanitiser used.

Other sanitising methods

Other methods may be used to sanitise eating and drinking utensils and food contact surfaces (e.g. dry steam cleaning, ultraviolet irradiation and microwaving), as long as the business can demonstrate the method is effective.

Cleaning and sanitising procedures and records

All food businesses should consider every piece of equipment on their premises that needs to be cleaned and sanitised, and develop a plan that includes details on:

- what the equipment is
- how often it should be cleaned and sanitised (dependent on the utensil or equipment; for example 4-hourly may be appropriate for meat and salad slicers or stick blenders, weekly or monthly may be appropriate for ceiling fans)
- how it should be cleaned (e.g. equipment dismantling instructions, detergents to be used, whether soaking is required, dishwasher or hand scrubbing instructions, etc.)
- how it should be sanitised (e.g. chemical sanitiser instructions including dilutions, contact times, rinsing, shelf life of diluted product, etc.)
- personnel responsible for each cleaning and sanitising duty.

This information could be included in a table, like this example method below:

Item	How often	Method	Products used	Who	Notes
1. Baine marie	Every day after use	1. Drain water, discard food left in trays. 2. Remove trays and grids. 3. Pre-rinse in warm water. 4. Wash in warm water in sink with detergent and scrubber. Soak if needed. 5. Rinse with clean hot water. 6. Mix 5ml concentrated bleach into 10L warm water in sink. Use gloves. 7. Soak trays and grids in bleach solution for 10 mins. 8. Wet clean cloth in bleach solution and wipe inside of bain marie. 9. Allow to air dry.	Scourer, detergent, bleach	Kitchen hand (name)	Bleach, detergent, gloves in cupboard above sink. Double check instructions for using bleach on bottle.

Items that are often forgotten include extraction filters, flues, cool room ceilings, plastic door strips, touch points (switches, handles), refrigerators (inside and outside), toilet doors and ceiling fans.

A monthly roster or checklist listing all the tasks, which days each task needs to be performed, and who is responsible, could be useful for businesses to keep track of cleaning and sanitising. Example templates for cleaning procedures and record keeping are provided in Appendix 8.

It is important to note that Standard 3.2.2A requires certain food service businesses (including caterers) to substantiate their cleaning and sanitising. See the chapter on Standard 3.2.2A.

Further information

See state and territory regulatory agency websites in Resources and References.

Appendix 7: Pest management

A good pest management plan will ensure that food and food contact surfaces are protected from contamination by pests. It will also help food businesses demonstrate that they are taking all practicable measures to eradicate and prevent the harbourage of pests (under Standard 3.2.2 clause 24).

A pest management plan should consider the following factors:

- What pests are to be treated: Common pests are rodents (e.g. rats, mice), insects (e.g. cockroaches, flies, ants, weevils) and birds (e.g. pigeons).
- What areas are to be inspected and treated: Pests are generally attracted to water, food and shelter in dark places. Common pest hiding places include under and behind appliances and equipment, under washing facilities, inside wall cavities and cupboards, under and inside boxes and packaging. It may be useful to have a checklist of areas to inspect.
- The types of treatment to be used (e.g. baits, sprays, traps, etc.): Include safety and shelf-life information on the chemicals used, ensuring that chemicals are suitable and approved for use in food premises.
- Locations of pest control devices (such as rat bait stations, insect attractants, zappers, spray dispensers, flyscreens) and of pesticide storage: Ensure they are placed in areas that minimise the risk of pesticides or killed pests coming in contact with food or food contact surfaces (e.g. do not place ultraviolet insect killers directly above food preparation or packaging areas). It may be useful to draw up a site map marking the locations of pest control devices and storage areas.
- The frequency of inspections and pest treatment: The frequency and timing will depend on individual circumstances, such as the premises' location, climate, type of food, type of pest, season and signs of pest activity (droppings, fur, etc.). Inspections and treatments should occur regularly and often enough to ensure chemicals are not used beyond expiration dates, used baits and traps are replaced or reset, and killed pests are removed, so that the premises and vehicles remain free from pests.
- Hiring a professional pest controller is not a requirement under these standards, but it can be useful to have a professional visit the premises regularly as they must meet relevant legislative requirements.

Ensuring the food premises and food transport vehicles are kept clean, tidy and well maintained will also help prevent problems with pests. Measures to prevent the entry and nesting/breeding of pests include keeping food and equipment off the floor, storing food and waste in sealed containers, promptly disposing of rubbish and regularly checking pest-prone hiding areas such as behind equipment, under sinks and so on.

See also Standard 3.2.2 clause 24 and regulatory agency websites in Resources and References.

Written reports of any pest inspections and eradication treatments (conducted by the business or a professional pest controller) are useful documents to keep, including details on dates of inspections and treatments, any pest activity observed, chemicals/controls used and recommended remedial actions. Ensure that any recommended actions are seen to as soon as practicable.

Appendix 8: Template examples

The following templates are provided for information and can be adapted or combined to suit specific business needs. Blank templates are also available on our website and from jurisdictional food regulatory agencies.

Examples of what you might record are provided in each template in this chapter.

Template	Description
1 – Supplier details	Used to record your suppliers' details and the products they supply.
2 – Food receipt	Used to record the condition of received goods.
3 – Cooking and cooling food	Used to monitor the cooking and cooling times and temperatures.
4 – Temperature record sheet: e.g. for food display	Used to monitor the temperature of foods, for example, being displayed.
5 – Log for 2-hour/4-hour rule	Used to monitor food temperatures while they are in the 'danger zone'.
6 – Cleaning and sanitising procedure	Used to show what needs to be cleaned, the method, and who is responsible for cleaning and sanitising.
7 – Cleaning and sanitising record	Used to record your cleaning schedule (2 weeks). It may be useful to adapt this template for daily, weekly, fortnightly and/or annual cleaning and sanitising schedules and checklists.
8 – General temperature record	Can be adapted for multiple activities to record food temperatures (reheating, cooking, transport).

Template 1 — Supplier Details

Date	Time	Product (Name and Lot)	Corrective action/Notes	Checked by
3/2/13	08:00	Cheese – 007 Frozen spinach - POP13	Package intact, 5°C Frozen hard	MR

Check:

- » Goods received under agreed conditions. Frozen food must feel hard frozen with no evidence of thawing.
- » (e.g. clean, packaging intact, correctly labelled, correct temperature, date markings within 'Use by' or 'Best Before' date).
- » Cold foods should be kept at 5°C or below (unless validated alternative).
- » Hot foods should be kept at 60°C or above (unless validated alternative).
- » Supplier's details included in shipment.
- » Product name and lot identified.
- » Determine if the received goods should be accepted (then stored correctly), returned, or disposed.

Template 2 — Food receipt

Date	Time	Supplier	Product (name and lot)	Condition/Temp	Corrective action / Notes	Checked by
3/2/23	08:00	FS Food Delivery	Cheese – 007 Frozen spinach - POP13	Package intact, 5°C Frozen hard	Truck inspected – clean, temp OK	MR

Check:

- Goods received under agreed conditions. Frozen food must feel hard frozen with no evidence of thawing. (e.g. clean, packaging intact, correctly labelled, correct temperature, date markings within 'Use by' or 'Best Before' date).
- Cold foods should be kept at 5°C or below (unless validated alternative).
- Hot foods should be kept at 60°C or above (unless validated alternative).
- Supplier's details included in shipment.
- Product name and lot identified.
- Determine if the received goods should be accepted (then stored correctly), returned, or disposed.

Template 3 — Cooking and cooling food

Date	Food	Cooked food core temp (≥75°C or equiv.)	Cooling start time (when food temp is 60°C)	Time within 2 hrs / Temp	≤21°C within 2 hrs? (Yes — continue cooling)	Time / Temp	Time / Temp	5°C or below within 4 hrs? (6 hrs after start)	Corrective action/ note	Staff initials
3/11/22	Spinach and cheese pies	80.9°C	8:30 am / 60°C	10:30am / 19°C	Yes	12:30 pm / 5°C		Yes	<5°C in 4 hrs, no 6 hr test required	MR
3/11/22	Tuna Mornay	96°C	11:00 am / 60°C	1:00 pm / 20°C	Yes	3:00 pm / 17°C	5:00 pm / 3.8°C	Yes		AC
3/11/22	Roast chickens	90.4°C	11:30 am / 62°C	1:30 pm / 21°C	Yes	3:30 pm / 16°C	5:30 pm / 8°C	No	Discard product, reviewed cooling process, chop up chicken before cooling.	SN
4/11/22	Rice	Boiling	10:10 am / 61°C	12:10 pm / 35.2°C	No				2 hr limit not met, discarded. Reviewed SOP. Cool under cold running water or portion to small containers to cool.	KF

- Use a clean, sanitised probe thermometer.
- Ensure food is thoroughly cooked to ≥75°C (or equiv.) by checking the thickest part.
- Potentially hazardous food must be cooled from 60°C to 21°C within 2 hours, then cooled from 21°C to 5°C within the next 4 hours
- Some tips to rapidly cool food include: dividing big batches into smaller portions, using blast chillers, and using ice water baths.

Template 4 – Food temperature record sheet (multi use): e.g. for food display

Date	3/2/23												Notes
Time	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Cold unit 1 e.g. Fridge 1	4.5°C	4.8°C											Pies were 'probed' – temperature good but fridge is making a funny noise*
Cold unit 2													
Cold unit 3													
Hot unit 1 Bain marie 1	off	60°C											
Hot unit 2 pie warmer	62°C	61°C											
Hot unit 3													
Staff initials	MR	WH											

Date	Corrective action taken (e.g. bain marie temperature turned up, refrigeration unit checked by technician, food discarded, etc.)	Signed
3/2	* Called fridge technician to check Fridge 1	MR

Use a clean, sanitised probe thermometer to check food temperature (or e.g. a jar of water, if checking refrigeration).
» Cold foods should be kept at 5°C or below (unless validated alternative).
» Hot foods should be kept at 60°C or above (unless validated alternative).
» If food is not at correct temperature, add notes on corrective actions take

Template 5 — Log for 2-hour/4-hour rule

Food	Date	Time out of refrigeration (above 5°C)	Activity (e.g. food prep, display, transport.)	Time back in temp control (≤5°C)	Total time out	2-hr/4-hr action (re-refrigerate/ use/ or discard see below)	Staff initials
Meat & salad sandwiches	3/11/22	10:30am	Sandwich prep	11:00am	30 min	Back in fridge 1	MR
		12 noon	Display for lunch on top of lunch counter	1:30pm	1 h 30 + 30 prep= 2hr	Put 10 sandwiches back in fridge 1	DC
		3:30pm	Remain on display on top of lunch counter		3 h 30 + 30 prep=4hr	4 h limit, discarded left overs	DC
		4pm	10 saved from lunch, display for quick sale at end of the day -placed on top of counter	6:00pm	2 h + 2h = 4 hours	Only one left, discarded	DC
Fresh cream filled buns	4/11/22	11am	Buns from fridge to display table front of shop for quick sale	3pm	4 h	Discarded remaining	AC
Sliced ham for croissants	5/11/22	8:00am	Placed ham on bench for use for breakfast croissants	10:00am	2 h	Wrapped portion left, marked with today's date & noted 2 hours left for tomorrow, put back in coolroom	SN
Sliced ham for croissants	6/11/22	8:00am	Placed ham on bench for use for breakfast croissants – day 2	10am	2 h	Discarded remaining	SN

- If food is kept between 5°C and 60°C, this temperature must be monitored and recorded.
- Each time period that food is kept between 5°C and 60°C, add up to reach a total time.
- Potentially hazardous food that has been kept between 5°C and 60°C for less than two hours must be refrigerated or used immediately.
- Potentially hazardous food that has been kept between 5°C and 60°C for longer than two hours but less than four hours must be used immediately and not put back in the refrigerator.
- Potentially hazardous food that has been kept between 5°C and 60°C for longer than four hours must be discarded.

Template 6 — Cleaning and sanitising procedure

Item/ equipment	How often	Cleaning method	Sanitising method	Responsibility	Comments
e.g. Bain marie	Daily	Turn off power, drain out water, discard food left in trays. Remove trays and grids and pre-rinse them with warm water. Wash in warm soapy water (use "Super-soap" detergent and scrubber). Rinse in clean hot water. Wipe inside of bain marie.	Mix 5ml concentrated bleach in 10L warm water in sink (use gloves). Soak trays in sink for 5 mins. Wet a clean cloth in bleach solution and wipe inside of bain marie.Place trays on clean tea towel on bench to air dry.	Kitchen hand - MR	Chemicals, cloths, and gloves in cupboard under sink. Make fresh bleach solution daily

- Use warm to hot water to help remove grease etc.
- Use an effective detergent for your application (depends on residue/equipment).
- Ensure that the surface looks, feels, and smells clean.
- Use a sanitiser after cleaning, for all food contact surfaces.
- Follow the manufacturer's instructions for all chemicals.
- Take care to not re-contaminate surfaces and equipment after cleaning and sanitising.

Template 7 — Cleaning and sanitising record (2 weeks)

Area/ equipment	Frequency	Person(s) responsible	Week starting date: 14/11/22							Week starting date: 21/11/22						
			Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Meat slicer	Daily or after each use	WH, LK	LK	WH	LK	LK	WH	WH	LK	LK	LK	LK	LK	WH	WH	WH
Bain marie	Weekly	AC				AC								AC		
Stick blender	After each use	KF	KF	X	KF	X	KF	KF	X	KF	X	KF	X	KF	X	KF
Benches	Daily	KF														
Food processor	Daily when used	KF, WH														
Supervisor to initial when task completed to satisfaction. Use X when not used.			NG	NG												

- Ensure that food preparation areas/ equipment are free from food waste, dirt, grease, and odours.
- Follow the manufacturer's instructions when cleaning specific equipment.
- Ensure staff have the knowledge and skills to effectively clean and sanitise.
- Don't forget less obvious areas like extraction filters, cool room ceilings, plastic door strips, toilet doors, ceiling fans, and light switches.

Template 8 – General temperature record (multi-use)
e.g. cooking, reheating, refrigeration

Date	Time	Activity / Food / Appliance	Food temp. °C	Corrective action / Notes	Checked by
2/3/23	9:00	Fridge 1 check	5°C		MR
" "	9:30	Cook small quiches (200°C, 20 mins)	79°C		MR
" "	11:00	Reheat meat pies to hot hold	53°C, 63°C	Didn't reach 60°C after reheating 40 mins – turned oven up by 10oC and will recheck in 20 min, ok at 11:20	MR

Temperature checks

- Cold foods should be kept at 5°C or below (unless validated alternative).
- Hot foods should be kept at 60°C or above (unless validated alternative).
- Frozen foods are 'frozen hard'.
- Cook to internal temperature of ≥75 (or equivalent).
- If food is not at correct temperature, add notes on corrective actions.

Appendix 9: Temporary and mobile food premises

This appendix provides information on food businesses using temporary and mobile premises. It is not intended to be stand alone and should be read in conjunction with other sections in this guide.

See also regulatory agency websites in Resources and References.

A 'food business' operation includes the handling of food for sale or the sale of any food, even if it occurs only once. 'Sale' includes any gain to the business from providing the food, not just the direct exchange of money for food.

What are temporary food premises?

- Typically, temporary premises are used to sell food at an occasional event, such as a fete, fair, festival, market or show, usually lasting a matter of hours or days. The food business usually operates from a temporary structure set up for the event, such as a market stall, tent or barbeque stand and it may include parts of structures and land. The structure is usually dismantled after the event.
- Temporary food premises can be a permanent structure that is not owned or leased by the community group and from which food is sold or handled for sale on an occasional basis only (e.g. a group using a community hall for an event at which food is sold).
- Food vehicles that are permanently equipped to prepare and sell food and which may move from site to site are not considered to be temporary premises.

Note: For the purposes of notification, regular temporary premises, which operate weekly, monthly, or at any other regular interval, should be treated as permanent food operations. See clause 4 below.

What are mobile food premises?

- Mobile food premises are any food premises designed to be movable from place to place that are used for selling food on land, sea or air. This definition includes food vending vehicles (or means of transport), whether self-propelled or not or otherwise such as food vans, caravans, trucks, trailers, bicycles, boats, ships and planes. It can include movable buildings such as demountable buildings or containers that have been purpose-built for food handling and sale.
- These food premises are generally considered to be permanent premises, where their lay out does not change yet the premises can be moved between locations.
- They include vehicles used for on-site food preparation (e.g. hamburgers, hot dogs and kebabs), one-step food preparation (e.g. coffee, squeezed or blended juices, popcorn and fairy floss), and the sale of any type of food including prepackaged food.
- Vehicles used to transport food only are not considered to be mobile food premises.

Note: food vending machines may be considered as food premises in state or territory legislation. For example, in Queensland vending machines are defined as mobile premises as they can be stand-alone premises moved between locations. For further information, refer to the relevant food authority.

What requirements apply to temporary and mobile food premises?

Regardless of the scale or type of operation, temporary and mobile food operations must comply with all relevant parts of the Food Standards Code, including the food safety standards Standard 3.2.2, Standard 3.2.2A, Standard 3.2.3, and Part 1.2 — Labelling and Other Information Requirements. All temporary and mobile food premises are subject to inspection by local council or food safety officers to ensure they are complying with the Code.

Because of the nature of some temporary events (i.e. they may operate in remote areas or for very short periods of time) exemptions to some requirements can be provided to temporary premises (e.g. under Standard 3.2.2 clause 3, 14 and 17, and Standard 3.2.3 clauses 10 and 14).

To balance practicality with the management of food safety risks, the application of food safety requirements to temporary and mobile premises should take an outcomes-based approach; that is, the ultimate aim is to ensure food safety. Risks posed to food safety will depend on the scale and complexity of each business's activities; for example, a business handling unpackaged potentially hazardous foods (such as kebabs or salads) at ambient temperature could pose a higher risk than a business selling pre-packaged non-potentially hazardous food (such as canned soft drinks or confectionery).

Temporary food premises may pose a higher risk to food safety, due to their lack of permanent cleaning, storage, refrigeration and heating facilities.

Mobile premises may pose a higher risk to food safety because of size and weight restrictions, and the need to be self-sufficient for water supplies and waste disposal.

Specific information on particular clauses in the food safety standards is provided below.

Information on specific requirements

Standard 3.2.2

3 Skills and knowledge

All food businesses are generally required by clause 3(1) to ensure that everyone who handles food for sale in their business has skills and knowledge appropriate to their activities, in both food safety and food hygiene.

3(2) Subclause (1) does not apply to a food business in relation to persons undertaking food handling operations for fundraising events, that is, events:

(a) that raise funds solely for community or charitable causes and not for personal financial gain; and

(b) at which only food is sold that is not potentially hazardous or which is to be consumed immediately after thorough cooking.

However, clause 3(2) recognises that community or charitable events are often run with the help of volunteers who might only ever assist once or twice. Volunteers are not expected to have the same level of skills and knowledge as employed food handlers, but should still exercise basic food safety and hygiene. This subclause only applies if

the event is solely for community or charitable causes and is only selling food that is not potentially hazardous or is immediately consumed after cooking (e.g. a stall selling cakes without fresh cream/custard fillings, or a sausage sizzle). Further information and examples are in the main text. All food handlers must comply with the remaining provisions of the standard.

Note that depending on the food handling activities of the business and the jurisdiction in which it operates, the business may be required to have a trained food safety supervisor or a food safety program.

4 Notification

Notification requirements in clause 4 apply equally to all food businesses, except for some not-for-profit fundraising events — councils should be contacted for details on notification requirements. For example, Victoria has an online registration tool, Streatrader, designed for community groups and mobile businesses.

For some temporary events or mobile businesses food might be handled off-site and if so, these off-site food premises must be approved by the appropriate enforcement agency (where that food premises is located) and comply with food safety standards. Note that a licence to operate may also be required by the jurisdiction.

Mobile business operating in multiple jurisdictions may only be required to notify once, in the jurisdiction where the business is garaged. However, the business should check details with the specific jurisdictions they propose to operate in. Mobile businesses may be inspected in any council they are operating in and are encouraged to keep their latest inspection record on site.

6 Food storage

When storing food, the business must organise storage space to ensure food is safe, regardless of whether it is stored on-site or at a different location (e.g. a business owner's home) before or after being transferred to a temporary or mobile premises. To prevent food from becoming contaminated during storage, for example:

- food could be sealed in food-grade wrapping or containers
- raw food should be stored separately to ready-to-eat products (e.g. raw meats in one esky and salads in another)
- food should be stored separately to personal belongings (clothing, phones, etc.) and chemicals
- food should not be stored directly on the ground.

In addition, all potentially hazardous food must be stored at or below 5°C, at or above 60°C, unless the business can demonstrate another practice is safe (e.g. the 2-hour/4-hour rule — see Appendix 2). Refrigerators, ovens or similar equipment could be provided by temporary or mobile premises connected to power. For premises without power, food could be kept cold using covered ice buckets, eskies with ice/bricks, camp refrigerators or cold rooms provided by the event organisers, for example. Hot food could be kept hot using, for example, barbeque hot plates, gas-heated chafing dishes, or insulated containers or bags.

All storage facilities should be capable of storing the food at the required temperature and used correctly (e.g. ensure enough ice in eskies, avoid overstocking refrigerators, etc.). The temperature of potentially hazardous food should be checked with a thermometer.

7 Food processing (related to cooling and reheating food)

Food must be kept safe and suitable during all processing stages, regardless of whether processing occurs on-site at temporary or mobile premises or at a different location (e.g. at someone's home). If cooked potentially hazardous food is cooled or reheated (e.g. for service from a temporary food stall), these processes must comply with subclause 7(3) and 7(4) respectively, to avoid foodborne pathogens growing to unsafe levels. For example, if food is cooked in preparation to sell or serve cold at a catered event, it must be cooled to 5°C within the timeframes specified in subclause 7(3).

If cooked food is to be served or sold hot at an event:

- if served immediately after cooking, it can be served at any temperature
- if the food is to be held hot, it must be either:
  - » kept hot (60°C or above) from the time it was cooked, or
  - » if the cooked food has been chilled and needs to be reheated, it must be rapidly reheated to 60°C or above according to subclause 7(4) (e.g. on a hot plate or in a microwave) **before** it is placed in hot-holding equipment such as a bain marie, unless the business can show an alternative process is safe.

8 Food display

All food on display must be protected from contamination. Extra care should be taken with unpackaged food, ready-to-eat food and potentially hazardous food. Examples of practicable measures a business could take to protect displayed food include covering or wrapping food, placing food out of reach of animals and young children, separating raw and ready-to-eat foods and using appropriate signage (see main text).

Ready-to-eat food displayed for self-service (including taste testing) must be effectively supervised, have separate serving utensils provided and have protective barriers to prevent contamination by customers. For example, convenient options to prevent customer contamination at temporary stalls could include the use of:

- chafing dishes, lidded containers and cling wrap covers for dishes of self-service food — covers need to remain available to be placed back on food once customers have served themselves
- squeeze-type condiment dispensers and individually sealed condiment packs
- for taste testing samples, single use utensils (e.g. toothpicks, disposable spoons), a disposal container and signage to prevent double dipping.

All potentially hazardous food must be displayed under temperature control. Temporary and mobile premises not connected to power could, for example, use eskies or ice buckets covered with plastic wrap for displaying cold food. Food that is to be kept cold should not be left in direct sunlight. Condiments that are potentially hazardous foods (e.g. some mayonnaise sauces) should not be placed in direct sunlight or left at ambient temperatures for long periods (e.g. see Appendix 2). It may be useful for businesses to

have pre-prepared filled condiment bottles in refrigeration and to bring these out only as they are needed by customers.

For displaying hot food, equipment such as barbeques, portable hot plates or gas-heated chafing dishes may be convenient. If no suitable display equipment is available, the business could display a sample (i.e. not for sale) of potentially hazardous food (e.g. pavlova) at ambient temperature, while holding the food that is to be sold in cold- or hot-holding equipment nearby.

The temperature of displayed potentially hazardous food should be checked with a thermometer to make sure cold food is 5°C or below, and hot food is 60°C or above.

10 Food transport

Food transported to temporary or mobile premises must be kept safe regardless of the transport arrangements (e.g. use of professional transporters versus volunteer drivers for a temporary event). For example:

- food should be transported in clean, sealed food-grade containers or wrapping
- raw foods such as meat should be transported in separate containers from ready-to-eat foods such as salads and bread
- all potentially hazardous food must be transported under temperature control (e.g. in a refrigerated truck, on ice in eskies or in thermally insulated bags)
- the transport vehicle must be clean
- food must not be transported in the same compartment as animals.

15 Hygiene of food handlers

Subclause 15(1)(h) requires that food handlers at temporary or mobile premises use toilets provided by the business. See 3.2.3 clause 16 below on the requirement for businesses to provide access to toilets, which applies equally to temporary and mobile premises.

15(5) A food handler who handles food at temporary food premises does not have to clean his or her hands with warm running water, or comply with paragraph (4)(c)[on hand drying], if the appropriate enforcement agency has provided the food business operating from the temporary food premises with approval in writing for this purpose.

A written exemption may be provided for food handlers working in a temporary food premises to not have to wash their hands under warm running water or dry them using single use towels (or similar method). However, wherever running water (cold or warm) is available for hand washing, soap and single use towels must be provided and food handlers must use these facilities for hand washing. Where water is not provided for hand washing, food handlers must still use an appropriate alternative method provided by the business (e.g. alcohol-based gel, see 17 below).

Food handlers must use hand wash facilities if exposed food or food contact equipment is being handled. The use of hand wash facilities may not be required where food is delivered fully packaged and sold in the same packaging.

17 Hygiene of food handlers — duties for food businesses (related to hand washing)

Food business must provide hand wash facilities where exposed food or food contact equipment is handled. Mobile businesses are generally expected to provide permanent facilities dedicated for hand washing that are easily accessible and have warm running water, liquid soap, single use towels and a disposal container. Warm running water is usually around 40°C, and can be provided as a mixture of hot and cold water or water heated for direct supply, preferably directed through a single-lever type tap.

17(3) With the approval in writing of the appropriate enforcement agency, a food business that operates from temporary food premises does not have to comply with any of the requirements of paragraphs 17(1)(b)(i) [on warm running water] or (1)(d) [on hand drying] that are specified in the written approval.

For **temporary** premises, subclause 17(3) allows enforcement agencies to provide an exemption from the requirement of 17(1)(b)(i) or (1)(d) that warm running water for hand washing and single use towels or other effective means of hand drying is provided.

Based on the food safety risks posed by their activities, some businesses that operate at temporary premises may be allowed to:

- provide cold water for hand washing if warm water is not available, or
- provide alternative methods for hand washing if running water or sufficient water for hand washing is not available.

However, most temporary food premises should have access to running water for hand washing, and may be able to provide warm running water. For example, if not connected to a mains water supply, a business could provide running water by using filled urns or other water containers fitted with a tap. Commercially available portable hand wash stands may be appropriate. The water must be potable (under Standard 3.2.3 clause 4) and should preferably be warm. The container's size should be appropriate to the business's needs (based on its activities and the number of food handlers on-site) but as a guide for a small stall, a minimum of 20-25 litres is generally recommended for each day.

Where running water is available for hand washing, the business must provide soap and single use towels (or equivalent) (see clause 15 above).

Where temporary premises cannot provide running water for hand washing (e.g. on camping trips or in remote areas), the business must provide an appropriate alternative system for hand washing, such as alcohol-based hand gels or single use wipes. If water is not being used for hand washing, single use towels are not required for hand drying.

In certain circumstances, temporary or mobile businesses may not be required to provide hand wash facilities; for example, where food is delivered fully packaged and sold in the same package.

20 Cleaning and sanitising of specific equipment

All businesses must have clean and sanitary utensils and food contact equipment (cutting boards, serving platters, etc.). Temporary and mobile premises must have washing and sanitising facilities on-site unless the business has made other arrangements. For

washing, the business should provide potable water; a dish washing sink, bucket or equivalent; and detergent. Where there is no access to a mains water supply, premises could for example use filled urns, tanks or other containers with a tap valve to provide running water for washing. The volume of water should be appropriate to the business's needs (based on its activities and the number of food handlers on-site), but for a small stall a minimum of 20-25 litres for each day is generally recommended. For sanitising, chemicals such as bleach solution, alcohol wipes, or very hot water should be used.

Equipment washing and sanitising facilities must be entirely separate from the hand washing facilities. If space is insufficient or food safety would be compromised by washing utensils/equipment on-site, the business could use disposable utensils or secure dirty utensils/equipment in bags or containers for washing off-site later. The business must make arrangements for cleaning any large pieces of equipment (e.g. offsite after the event).

Equipment used with potentially hazardous foods (e.g. hand-held and stand-alone blenders, liquidisers, can openers, meat tongs and slicers), especially if it is used at ambient temperatures, should be frequently cleaned and sanitised (e.g. every 4 hours) to prevent food-poisoning bacteria growing to dangerous levels in food residues. Further information on cleaning and sanitising is provided in Appendix 6.

24 Animals and pests — see 3(d) on the following page.

Standard 3.2.2A

For food service, catering or retail businesses that handle unpackaged, potentially hazardous food that is ready to eat, Standard 3.2.2A will apply. This standard contains additional requirements for food handler skills, knowledge, and substantiating food safety controls (food receipt, storage, display, reheating, cooling, cleaning and sanitising). See the chapter on Standard 3.2.2A.

Standard 3.2.3

Application

The application of Standard 3.2.3 to temporary food premises should recognise that temporary premises set up for a short time generally might not be as spacious or secure as permanent premises, nor subjected to the same extent of cleaning and sanitising. Mobile businesses are often restricted by space and the need to have self-sufficient water and power supplies and waste disposal.

There are specific exemptions in Standard 3.2.3 from certain requirements based on practicalities (e.g. in relation to hand washing facilities and flooring). For other requirements, a risk-based approach should be taken to assessing compliance with standards. The main priority is meeting the outcomes of Standard 3.2.2 on food safety practices. Where Standard 3.2.3 is not complied with, food operations may be changed to overcome food safety issues arising from structural defects. It is suggested that changes to premises should only be required where there is a direct food safety risk posed.

An example of best practice set up for a temporary food stall is in the figure at the end of this appendix.

3 General requirements

The setup of temporary and mobile premises should minimise opportunities for food to become contaminated. For example, the premises could be located:

- away from nearby toilets or garbage areas to prevent airborne contamination
- on sealed or covered ground to prevent dirt and dust
- facing open sides away from prevailing winds to prevent entry of windblown insects, dust, spray, etc.

Subclause 3(b) requires food premises to have enough space to keep food safe while conducting all activities. The adequacy of mobile and temporary premises will depend on the business operations and the volume and type of food handled. To prevent food contamination, adequate space should be provided, for example, to:

- separate food and food contact equipment from chemicals
- separate food handling activities (e.g. sufficient bench space/table area so that prepared ready-to-eat foods are separated from raw meats)
- fit, use and clean all equipment needed for preparing food (e.g. blenders, barbecues), displaying food (e.g. containers, display units) and dispensing food (e.g. utensils, cups, plates)
- separate food from waste materials
- ensure there are enough facilities for washing hands or equipment and to ensure these facilities are unobstructed, so that washing and/or sanitising tasks can be done properly and whenever needed.

Subclause 3(c) requires the food premises to be able to be effectively cleaned and, if necessary, sanitised. The intended outcome is that premises are easy to clean and so are more likely to be kept clean and therefore provide fewer opportunities for food to be contaminated by dirt, insects, grease, food scraps, etc. For example, hoses, pipes and wiring should be placed out of the way of exposed food and if they cannot be readily concealed in walls, could have dust covers that are easy to wipe clean. For temporary premises, practical consideration should be given to the duration of the event and risks to food safety over this time period. See also clause 10 on floors and clause 11 on walls and ceilings, below.

Subclause 3(d) requires that contaminants and pests should be excluded ‘to the extent that is practicable’. It is recognised that temporary and mobile premises exposed to the outdoors are unlikely to be able to exclude all dust, dirt and flies, so the risk to food safety should be assessed. Examples of practicable measures the business could take to protect food include:

- sheltering the food preparation area from draughts
- using barriers to restrict access to food preparation areas by passing customers and animals
- using flyscreens on doors, windows and other openings
- covering holes or gaps (e.g. using weather strips on door bases and filling material

around pipes coming through walls) where pests could enter premises, particularly at night when most pests are active
- covering exposed food using plastic wrap, lidded containers, mesh or other covers
- keeping food scraps and other waste in covered containers and regularly removing waste to avoid attracting or harbouring pests.

Regularly inspecting and treating the premises for pests will also help.

4 Water supply

The business must provide potable (drinking quality) water for all activities that water or ice is needed for on the premises, unless they can demonstrate that use of non-potable water will not affect food safety. Options for temporary and mobile premises not connected to piped town water include providing potable water in water storage tanks or other containers (e.g. see 3.2.2 clauses 15 and 17 above for hand washing facilities). Note that containers or pipes used for water should be suitable for use with food (e.g. garden irrigation pipes are generally not food-grade), as per clause 12 on fixtures fittings and equipment.

There may be some instances where non-potable water must be used for practical reasons (e.g. in remote areas). If the water is to be used with food and food contact surfaces, the business will need to treat it (e.g. with filters and chemical purifiers and/or by boiling the water) to prevent food from being contaminated.

4(3) If a food business demonstrates that the use of non-potable water for a purpose will not adversely affect the safety of the food handled by the food business, the food business may use non-potable water for that purpose.

An exemption from using potable water for some tasks may be provided if the business demonstrates that food will remain safe; for example if the water will not come in contact with food or food contact surfaces, such as when cleaning floors or firefighting.

For further information on water (e.g. on use of non-reticulated supplies and re-use of water), see Standard 3.2.3 clause 4 and regulatory agency websites in Resources and References.

5 Sewerage and waste water disposal

Temporary and mobile premises must have suitable equipment to collect waste water. For example, for a temporary outdoor event this could be a sealable bin or large bucket. For a mobile business a dedicated tank external to the vehicle could be used — although the appropriate size to use will depend on the business's activities, as a guide, 50 litres' capacity is recommended for waste water. The business must arrange for the safe disposal of sewerage and waste water into a toilet or other council-approved location. Waste containing grease and fat should not be disposed down toilets. Waste water must not be tipped on the ground or into a storm-water drain as it might contaminate the soil or water with dangerous chemicals or microorganisms.

6 Storage of garbage and recyclable matter

The business must provide equipment large enough and of suitable material to collect all garbage and other waste (e.g. waste oil). It must arrange for the safe disposal of all waste from the site in a council-approved location. Garbage and other waste must not be left behind once a temporary event is over or a mobile business has moved, as it might attract pests, or contaminate the soil or water with dangerous chemicals or microorganisms.

10 Floors

Floors must generally comply with clause 10; that is, be able to be effectively cleaned, unable to absorb grease, food particles and water, unable to harbour pests, and laid so there is no ponding of water. However, businesses using a temporary food premises may use any flooring provided the surface would not pose a food safety hazard:

10(3) The following floors do not have to comply with subclause (2):

(a) floors of temporary food premises, including ground surfaces, that are unlikely to pose any risk of contamination of food handled at the food premises;

For a temporary food premises, this includes the existing ground surface (e.g. grass, concrete, paving or dirt) or other flooring (e.g. groundsheets and sealed timber boards).

For example, subclause 10(3) would generally allow businesses to sell packaged foods and food directly from the barbecue at fetes, markets, sporting events and similar functions.

11 Walls and ceilings

Walls and ceilings are required at any food premises where they are needed to protect food from contamination, for example if the business is handling unpackaged food or handling packaged food that could be damaged by weather, insects, animals, sprays, etc. The required outcome is that food is prevented from becoming contaminated. The practicalities of setting up temporary premises should be recognised and the risks should be assessed in relation to food safety. For example, a stall constructed using plastic tarpaulins tied to posts could effectively protect food from weather, dirt and pests even if the walls and ceilings do not have perfectly sealed junctions.

13 Connections for specific fixtures, fittings and equipment

Subclause 13(1) requires that fixtures, fittings and equipment that use water for food handling or other activities and are designed to be connected to a water supply must be plumbed in.

- This includes sinks, basins, dishwashers, hose connections, ice-making machines and any other water-using equipment that is designed to be connected to a water supply.
- This subclause applies to any business using these types of fixtures, fittings and equipment including mobile premises, for example, using sinks and basins for washing.
- This subclause does not apply to equipment such as bowls, buckets or other stand-alone or portable equipment, for example, used in temporary market stalls for

washing utensils or hands.

Subclause 13(2) requires all fixtures, fittings and equipment designed to be connected to the drainage system, and which discharge sewage or waste water, to be connected to the drainage system of the premises.

- Equipment such as bowls, buckets or other portable equipment, for example used at temporary premises for washing, is not required to be connected to a drain. The businesses must, however, still arrange for responsible waste disposal (see clause 5 above).
- This subclause includes mobile premises using sinks and basins for activities that generate waste water — these sinks and basins must be directly connected to a waste water tank or sewer.
- Vehicles only selling pre-packaged foods (e.g. canned drinks) are unlikely to need a connected waste water disposal system.

14 Hand washing facilities

Businesses must provide easily accessible hand washing facilities immediately adjacent to toilets, and where food handlers' hands are likely to become a source of food contamination. Generally these facilities must be permanent fixtures, have warm running potable water, be large enough and clearly identified for only washing hands, arms and face. Mobile premises are expected to comply with all these requirements.

14(3) Paragraph (2)(a) [requiring hand washing facilities to be permanent fixtures] does not apply to temporary food premises.

14(4) With the approval in writing of the appropriate enforcement agency, food premises that are specified in the approval do not have to comply with any requirement of this clause that is also specified in the approval.

14(5) Only food premises that are used principally as a private dwelling or are temporary food premises may be specified in an approval for the purposes of subsection (4).

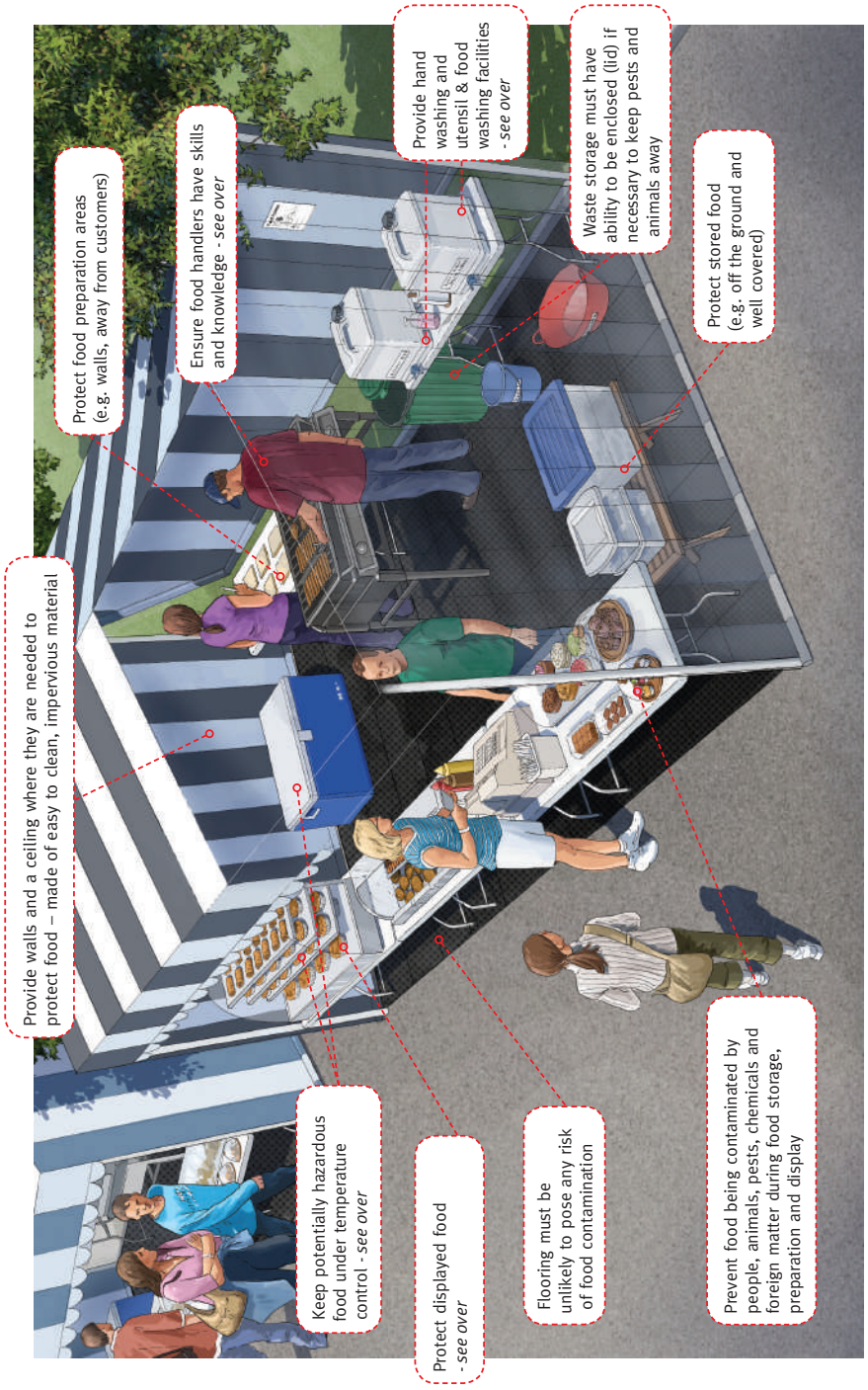
Exemptions for **temporary** premises for some or all of the requirements for hand wash facilities may be granted under subclauses 14(3)–(5). Examples of alternative facilities that could be used include water containers with taps and commercially available portable hand wash stands.

See also Standard 3.2.2 clauses 15 and 17, above.

16 Toilet facilities

Food handlers in temporary and mobile premises must be provided with toilets. Businesses may provide their own toilet facilities (e.g. a portaloo) or arrange for access to nearby toilet facilities (e.g. a service station or shopping mall). The location and design must not present any food safety issues; for example, they must be well separated from food preparation areas and have hand wash facilities.

GUIDE FOR THE DESIGN AND OPERATION OF A TEMPORARY FOOD PREMISES (STALL)



This document is for guidance only and is not legally binding. Each premises will be assessed on its own individual food safety risks by the relevant local enforcement agency. Other requirements may also apply (e.g. LPG use, fire control, waste disposal) – seek advice from your local enforcement agency.

image provided courtesy of City of Gold Coast

image provided courtesy of City of Gold Coast

Appendix 10: Home-based food businesses

This appendix provides information on home-based businesses. It is not intended to be stand alone and should be read in conjunction with other sections in Safe Food Australia.

What is a home-based food business?

Home-based businesses typically use their home (domestic premises) to handle food for sale. They include, for example: preparing food for sale at local markets or school canteens in a home kitchen; home-based catering businesses; bed-and-breakfast and farm home-stay accommodation; home-based child-care businesses that provide food; restaurants with accommodation for the owner, family or staff.

The handling of food intended for sale includes all activities that may take place in relation to food including cooking, preserving, processing, preparing, packing, storing and transporting (see the definition of 'handling' for further information). The sale of any food includes any gain to the business from providing the food, not just the direct exchange of money for food (see definition of 'sell' for further information).

'Food premises' in the context of home-based businesses includes land and structures used jointly or in part as a private dwelling that are also used for handling food for sale. It includes food business activities in the business owner's home or in another person's house (see definition of 'food premises' for further information).

What requirements apply to home-based businesses?

Regardless of the scale or type of operation, home-based businesses, like all food businesses, must comply with the relevant parts of the Food Standards Code including Standard 3.2.2, Standard 3.2.2A and Standard 3.2.3, and Part 1.2 — Labelling and Other Information Requirements. Guidance can be sought from local government where the operation will occur.

Because of the nature of a home-based business (i.e. they operate from private dwellings with domestic-style kitchens) exemptions to some requirements may be provided (e.g. under Standard 3.2.2 clause 17, and Standard 3.2.3 clauses 4, 10 and 14).

Depending on the scale and complexity of the activities being undertaken by the business, the application of food safety requirements to domestic premises should take an outcomes-based approach to balance practicality with the management of food safety risks. Specific information on particular clauses is provided below.

Information on specific requirements

Standard 3.2.2

3 Skills and knowledge

All food businesses are required by clause 3 to ensure that everyone who handles food for sale in their business has skills and knowledge appropriate to their activities, in both food safety and food hygiene. For home-based businesses it might only be one member of the household that is involved in food handling operations.

The level of skills and knowledge required should be commensurate with the activities of the food business. For example, a home-based business that handles ready-to-eat potentially hazardous food (e.g. a home-based caterer) should be expected to have a greater level of food safety and food hygiene knowledge than a home-based business that packs and sells non-potentially hazardous food (e.g. jams and preserves). Depending on the food handling activities of the business and the jurisdiction (e.g. local council) in which it operates, the business may be required to have a trained food safety supervisor.

4 Notification

Notification requirements of clause 4 apply equally to all food businesses. As part of notification, information on the 'nature of the food business' is required. This information allows enforcement agencies to gain an understanding of the types of food and food handling operations to be undertaken by the home-based food business and can allow an assessment of the risks posed to food safety and suitability.

Division 4 Health and hygiene requirements applies to home-based businesses and includes appropriate management of sick family members or visitors in the home.

17 Hygiene of food handlers – duties of food businesses (related to hand washing)

17(2) Paragraph(1)(c) does not apply in relation to hand washing facilities at food premises that are used principally as a private dwelling if the proprietor of the food business has the approval in writing of the appropriate enforcement agency

Subclause 17(2) allows enforcement agencies to provide an exemption to home-based businesses from the requirement of 17(1)(c) that hand washing facilities in the premises are used solely for washing hands, arms and face. This exemption recognises that designated hand washing facilities are not usually provided in domestic-style kitchens. Guidance should be sought from the council where the operation will occur as, depending on risks posed by the food products or processes, exemptions are not always granted.

It is important that hand washing facilities are always available while food is being prepared and that they do not become contaminated. In a domestic kitchen this can be achieved by:

- having only one or two people at most using the kitchen so that a sink should always be available
- organising food handling activities so that the use of the sink can be separated by time (i.e. the sink is only used for one purpose at a time) and it is available when required
- cleaning and sanitising the sink between uses if there is risk of food contamination occurring (for example between using a sink for hand washing and washing food).

See also Standard 3.2.3 clause 14, below, for exemptions for hand washing facilities.

18 General duties of food businesses (related to people on premises)

18(3) A food business must take all practicable measures to ensure all people on the food premises of the food business:

(a) do not contaminate food;

(b) do not have unnecessary contact with ready-to-eat food; and

(c) do not spit, smoke, or use tobacco or similar preparations in areas where there is unprotected food or surfaces likely to come into contact with food.

As home-based food businesses operate from domestic premises, it should be expected that family members and visitors not involved in food handling activities may be on the premises. It is important that the business has measures in place to make sure people in the home do not contaminate food. Practicable measures might include, for example:

- having designated storage areas for food (e.g. in secured containers, cupboards, rooms, refrigerators) to keep family food separate from the business's food
- keeping visitors and family members away from the kitchen or other food preparation area when food is being processed
- preventing young children accessing food handling areas by, for example, using child safety gates or by only handling food at times when children are not present
- not allowing smoking in food preparation areas.

20 Cleaning and sanitising of specific equipment

Information on cleaning and sanitising is available in Appendix 6, including the use of domestic dishwashers and sanitising agents such as domestic-grade bleach.

24 Animals and pests

24(1) A food business must —

(a) subject to subclauses (2) and (3), not permit live animals in areas in which food is handled, other than seafood or other fish or shellfish; and

A home-based food business should have measures in place to make sure pet animals are unable to access areas where food is handled. Practical measures might include, for example:

- physical barriers to prevent animal access to areas where food handling activities are occurring (e.g. self-closing screen doors, child safety gates)
- storing food in secure rooms or cupboards
- making sure pets are not in the vehicle when transporting food, or ensuring there is a suitable physical barrier in place to protect the food from contamination by pets.

Standard 3.2.2A

For food service, catering and retail businesses that handle unpackaged, potentially hazardous food that is ready to eat, Standard 3.2.2A will apply. This Standard contains additional requirements for food handler skills, knowledge, and substantiating food

safety controls (food receipt, storage, display, reheating, cooling, cleaning and sanitising). See the chapter on Standard 3.2.2A.

Standard 3.2.3

Application

The application of Standard 3.2.3 to home-based food businesses should recognise that the business will generally use existing kitchens and facilities that are not designed to commercial-standard specifications, since domestic premises are usually not expected to have to withstand the same amount of use and cleaning as commercial premises. For example, domestic kitchens may have kick plates and false bases to benches, and appliances such as domestic dishwashers, range hoods and refrigerators.

There are specific exemptions in Standard 3.2.3 from certain requirements based on practicalities (e.g. in relation to hand washing facilities and flooring). In relation to other requirements, a risk-based approach should be taken to assessing compliance with standards. It is suggested that structural changes to a home should only be required where there is a direct food safety risk posed that cannot be managed using existing facilities.

3 General requirements (related to adequate space)

The design and construction of food premises must —

(b) provide adequate space for the activities to be conducted on the food premises and for the fixtures, fittings and equipment used for those activities

The adequacy of domestic premises will depend on the operations carried out by the food business and the volume of food it handles. Factors to be considered include:

- adequate space to separate food handling activities to prevent cross-contamination (e.g. sufficient bench space/table area for work flow so that, for the volume of food being handled, prepared ready-to-eat foods are separated from raw foods and ingredients).
- adequate space to safely store ingredients, food packaging and other raw materials (e.g. sufficient cupboards/secure storage areas for the scale of operations)
- adequate space for additional refrigerator/s or freezer/s if required.

4 Water supply

Where water is required for food handling activities conducted by the business, clause 4 requires an adequate supply of water to be available and that only potable water is used for all activities of the food business (see definitions of ‘adequate supply of water’ and ‘potable water’).

Home-based business will generally have domestic hot and cold water systems appropriate to the size of the dwelling (e.g. based on the number of bathrooms). The adequacy of these systems to provide water at an appropriate capacity and temperature when required for food handling activities will depend on the scale and nature of the business and its water needs.

For domestic premises connected to reticulated town water supplies, it can be assumed that the supply is potable. If potable water is supplied from rain water tanks, the storage tanks must be adequately designed and constructed to prevent contamination (see section in main text on clause 4).

Subclause 4(3) states that some businesses may be exempted from using potable water if they can demonstrate there is no risk to food being produced (see section in main text). Non-potable water can be used only where it will not affect food safety (e.g. for some cleaning tasks or extinguishing fires).

6 Storage of garbage and recyclable matter

Subclause 6(a) requires food premises to have facilities for the storage of garbage and recyclable matter that are adequate for the volume and type of garbage and recyclables produced by the business. Domestic premises will generally be provided with garbage and recycling bins to a volume appropriate for general household use. Depending on the operations of a home-based business, additional storage may be required for the waste produced. If more storage is required, additional bins or other waste collection services may need to be organised.

7 Ventilation

Exhaust hoods used in domestic-style kitchens come in a wide range of styles and extraction capacities. Range hoods may be ducted or recirculating, fixed or retractable. If the operations of a home-based business include cooking large volumes of food, particularly where frying is involved, the suitability of the existing exhaust system should be assessed for its ability to cope with the amount of heat, grease and vapours that will be produced.

10 Floors

Floors must be designed and constructed appropriately for the activities conducted by the food business so they can be effectively cleaned and unable to absorb grease, food particles and water (see section in main text on clause 10).

In domestic premises used for food businesses these requirements apply to floors in kitchens, storerooms and personal hygiene areas (e.g. toilets, bathrooms, or other areas where hand washing and other cleaning may occur). In these areas, carpet and other absorbent matting would be unsuitable. The use of matting, such as dust control mats, should comply with the requirements for equipment in clause 12 (see below).

Subclause 10(3) allows for an exemption to specific requirements for floors where the floor is unlikely to pose any risk of contaminating food and the business has written approval:

10(3) The following floors do not have to comply with subclause (2):

(b) floors of food premises that are unlikely to pose any risk of contamination of food handled at the food premises provided the food business has obtained the approval in writing of the appropriate enforcement agency for their use.

12 General requirements (related to fixtures, fitting and equipment)

Subclause 12(1) requires fixtures, fitting and equipment to be adequate for the production of safe and suitable foods and fit for their intended use. Depending on the type and scale of operation carried out by a home-based business, the adequacy of domestic appliances and equipment should be risk assessed.

Refrigeration

For food business operations that include cooling and storing potentially hazardous foods, the refrigerator design and amount of space available should be appropriate for the volume of food intended to be handled, taking into account peak use (e.g. a home-based caterer should have adequate refrigerator space for its largest function). If the space is inadequate, an additional refrigerator may be required. Noting that domestic-style refrigerators generally do not have temperature displays, alarms or data loggers, the business will need to ensure it operates the refrigerator to keep food at 5°C or below. This can be checked using a calibrated thermometer, which should be available on site at all times.

Floor mats

The use of matting, such as dust control mats, should comply with the requirements for equipment in clause 12. For example, they should be designed, constructed and located so that they can be easily cleaned and there is no likelihood that they will cause food contamination.

Dishwashers

See clause 20 Cleaning and sanitising above.

Exhaust hoods

See clause 7 Ventilation above.

14 Hand washing facilities

14(4) With the approval in writing of the appropriate enforcement agency, food premises specified in the approval do not have to comply with any requirement of this clause that is also specified in the approval.

14(5) Only food premises used principally as a private dwelling or are temporary food premises may be specified in an approval for the purposes of subsection (4).

Subclauses 14(4) and 14(5) allow enforcement agencies to approve an exemption for home-based businesses to the specific requirements for hand washing facilities in clause 14. This exemption recognises that a permanent, designated hand basin within food handling areas, and/or immediately adjacent to a toilet is not usually provided in domestic premises.

Approval of an exemption to a requirement under clause 14 should be based on risk assessment. That is, the enforcement agency should be satisfied that the alternative arrangements specified are adequate to manage any food safety risks posed.

Factors that should be considered in assessing whether alternative arrangements do not pose a food safety risk include the food handling operations taking place, the quantity and type of food being prepared and the number of people that will be using the facilities. For example:

- If the operations of the business require several staff to prepare food at the one time in the kitchen and their hands are likely to be a source of contamination of food, a designated hand wash basin should be provided in the kitchen so it can be easily accessed when required.
- If there is only one food handler in the kitchen, the risk of cross contamination might be less likely if a single sink is used for hand washing and other activities as only one task at a time would generally be undertaken (the sink would be used for only one purpose at any one time).
- If the food handling activities of the business involve the preparation of large quantities of ready-to-eat potentially hazardous food at the one time (where handling activities are likely to be a source of contamination and frequent hand washing may be required) then a hand wash basin in the kitchen might be required.
- If the food handling activities of the business are unlikely to be a source of contamination of food (e.g. only packaged food is handled) a hand wash basin might not be required.

Alternative arrangements to having a sink solely available for hand washing in a domestic kitchen include:

- having a washbasin adjacent to the kitchen or easily accessible from the kitchen
- if the kitchen has a double bowl sink, one compartment could be designated for hand washing (if no food safety risk is posed).

An exemption from having a hand basin immediately adjacent to the toilet or toilet cubicle may be approved in domestic premises if other hand washing facilities can be safely used. The outcome required is that food handlers are able to adequately wash their hands before resuming food handling activities or having an opportunity to contaminate surfaces within the kitchen.

See also Standard 3.2.2 clause 17, above, for exemptions for hand washing facilities.

Appendix 11: Food safety culture

'Food safety culture' is about attitudes, behaviours and the priority given to food safety in an organisation. In a food business, it is how everyone (owners, managers, employees) thinks and acts in their daily job to make sure the business's food is safe. In a strong food safety culture, people take both responsibility and care in producing safe food. They understand the importance of making safe food and the consequences of things going wrong. People have the right knowledge and skills and a genuine commitment to doing things the right way, every time.

Food safety culture starts at the top but needs support from everyone across the business. It includes not only food handlers, but also people involved in cleaning, maintenance, purchases, recruitment and other activities, as they contribute to the business's food safety and culture too.

Why is food safety culture important?

In Australia, people expect to enjoy their food with the assurance it is safe to eat. A good food safety culture in your business can protect:

- consumers from illnesses and death from unsafe food
- your brand's reputation
- your business from financial loss.

Preventable problems

Each year in Australia there are approximately:

- 4.7 million cases of foodborne illness, with contaminated food causing about 47,900 hospitalisations and 38 deaths
- 80 food recalls, mostly due to contamination by disease-causing microorganisms or allergens that were not listed on the label.

It's clear that despite having legislation, standards, quality assurance programs and other food safety systems in place, sometimes things go wrong. Problems with unsafe food have been linked to poor hygiene practices or mistakes by people handling food and equipment, even when people are trained and businesses are inspected and audited. These problems are largely preventable, if there is a strong food safety culture in the business.

People are the key to food safety systems working properly. After all, it is people who make the decisions, handle the food, use and maintain equipment and clean things up.

Where to start

The table on the next page shows the basic components of a good food safety culture. You can improve your business's food safety culture through three steps:

1. Know – know what your business's food safety culture is (e.g. assess it with a survey)
2. Do – do something to improve the culture (e.g. improve communications on food safety, allocate funding for equipment); even small steps can make a difference
3. Follow through – monitor food safety progress and commit to continually improving.

FSANZ has some useful resources for food businesses and regulators - visit www.foodstandards.gov.au (see our Food safety culture section).

What does a strong food safety culture look like?

	What?	How? (examples)
Strong leadership	*Senior leaders show the way, openly commit to making safe food the top priority throughout the business*	I make sure there is a regular meeting or get-together where we report and discuss our food safety performance. I personally follow up on things we decided need to be done (e.g. assign time, people or money to specific tasks, make sure corrective actions are done). I review our food safety performance and budget with my team as part of our overall business performance at least once a month.
Committed managers	*Managers show their commitment to food safety through dedicating time and effort*	I exemplify best practice food safety when working in my business. I communicate and follow up on my expectation that all staff spend 10 minutes each week in team meetings discussing and solving our food safety challenges. I schedule and lead a regular event (e.g. team meeting, webinar, safety demonstration) where I personally speak to my teams about food safety. I make sure my leadership team discusses and acts on suggestions about improving food safety at least monthly.
Everyone contributes	*Everyone in the business believes making safe food is important and everyone plays a part*	I speak up and correct anyone's behaviour if I see something wrong. I offer suggestions I think could improve the business's food safety performance. I ask questions if I don't understand why food safety practices are changed.
Everyone's accountable	*Everyone understands that they are held responsible for ensuring food is safe*	I understand my role and responsibilities in food safety and that if I do not take them seriously consumers could become ill or die and the business could be harmed. I help new colleagues and share my pride in what our business expects and achieves when it comes to food safety.
Knowing and acting right	*More than training – making sure everyone knows the risks and does the right thing, every time*	I assign time and budget for staff to receive food safety training, as well as regular updates or refresher sessions. I make sure there is a plan for everybody to be involved in food safety observations (e.g. food temperature, equipment sanitation), so we are all checking that we know and do what is expected. I actively encourage and reward people/ teams who have shown a strong commitment to food safety. I always speak up and/or take action if I see something is wrong (e.g. a food safety observation).
Continual improvement	*Be proactive – monitor what goes on, look for ways to improve, prevent problems happening in the future*	I discuss findings from food safety observations with my team at a pre-set and regular time so we can find better ways to do things and remove obstacles. I am encouraged to bring ideas about improving food safety to my supervisor and often do this. I see my supervisor and the business as a whole taking my comments and suggestions seriously – this makes me feel proud and valued.

RESOURCES AND REFERENCES

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The Resources and References section is available as a separate download from the Safe Food Australia web page, at http://www.foodstandards.gov.au/publications/Pages/safefoodaustralia3rd16.aspx.

Australian Standards

- AS 1668.1:2015 *The Use of Ventilation and Air Conditioning in Buildings — Fire and Smoke Control in Buildings*. Standards Australia, available to purchase at https://store.standards.org.au/product/AS-1668-1-2015
- AS 1668.2-2024 *The Use of Mechanical Ventilation and Air-Conditioning in Buildings*. Part 2 Mechanical ventilation in buildings. Standards Australia, available to purchase at https://store.standards.org.au/product/as-1668-2-2024
- AS 1680.1:2006 [pending revision] *Interior and Workplace Lighting, Part 1: General Principles and Recommendations.* Standards Australia, available to purchase at https://store.standards.org.au/product/as-nzs-1680-1-2006
- AS/NZ 1680.2.4 2017 *Interior and Workplace Lighting, Part 2.4: Industrial Tasks and Processes*. Standards Australia, available to purchase at https://store.standards.org.au/product/as-nzs-1680-2-4-2017
- AS 1731 *Frozen Food Retail Cabinets* and associated updates. Standards Australia, available to purchase at https://infostore.saiglobal.com/en-au/standards/as-1731-1983-126174_saig_as_as_266108/
- AS 4696:2023 *Hygienic Production and Transportation of Meat and Meat Products for Human Consumption*. Standards Australia, available to purchase at https://store.standards.org.au/product/as-4696-2023

Useful websites

Allergy & Anaphylaxis Australia https://allergyfacts.org.au/

Australian Business Licence and Information Service
https://www.industry.gov.au/government-government/australian-business-licensing-and-information-service

Environmental Health Australia

- Professional food safety tools, including I'm Alert Food Safety and FoodSafe training packages
  www.eh.org.au/resources/professional-tools
- National policy of food business grading schemes
  http://www.eh.org.au/about-us/national-policies

National Register of VET (Vocational Education and Training) Australian Government Department of Education and Training
http://training.gov.au

FSANZ

- FSANZ home page
  www.foodstandards.gov.au
- Food enforcement contact details
  www.foodstandards.gov.au/about/foodenforcementcontacts/Pages/default.aspx
- Food recall web page
  https://www.foodstandards.gov.au/food-recalls
- Food safety standards information
  https://www.foodstandards.gov.au/business/food-safety-standards
- Food allergen portal (resources)
  www.foodstandards.gov.au/consumer/foodallergies/foodallergenportal/Pages/default.aspx
- Food Standards Code
  www.foodstandards.gov.au/code/Pages/default.aspx

State and territory food regulatory agencies

ACT

- ACT Health Food safety training and resources for businesses
  https://www.health.act.gov.au/businesses/food-safety-regulation/food-safety-training-and-resources

New South Wales

- NSW Food Authority home page
  http://www.foodauthority.nsw.gov.au
- Resource centre
  https://www.foodauthority.nsw.gov.au/resource-centre

Northern Territory

- Department of Health Food business information – see Accommodation and food businesses
  https://nt.gov.au/industry/hospitality
- Department of Health Food safety and regulations website
  https://nt.gov.au/industry/hospitality/accommodation-and-food-businesses/food-safety-and-regulations

Queensland

- Queensland Health Food safety website
  https://www.qld.gov.au/health/staying-healthy/food-pantry
- Queensland local government https://www.localgovernment.qld.gov.au/for-the-community
- Safe Food Production Queensland Publications and resources
  www.safefood.qld.gov.au/index.php?option=com_content&view=article&id=582&Itemid=73

South Australia

- SA Health Food legislation website
  https://www.sahealth.sa.gov.au/wps/wcm/connect/Public%20Content/SA%20Health%20Internet/About%20us/Legislation/Food%20legislation/Food%20legislation
- SA Health Food safety website
  https://www.sahealth.sa.gov.au/wps/wcm/connect/Public%20Content/SA%20Health%20Internet/Conditions/Food%20safety/Food%20safety
- Food safety guidelines for food service
  https://www.sahealth.sa.gov.au/wps/wcm/connect/Public%20Content/SA%20Health%20Internet/Resources/Food%20Safety%20Guidelines%20for%20food%20service%20to%20vulnerable%20persons

Tasmania

- Department of Health Food safety website
  https://www.health.tas.gov.au/health-topics/food-safety
- Department of Health Food safety resources
  https://www.health.tas.gov.au/health-topics/food-safety/food-safety-resources

Victoria

- Victoria Health Do food safely — online food safety training course
  http://dofoodsafely.health.vic.gov.au/
- Victoria Health Food business information
  https://www.health.vic.gov.au/food-safety/food-businesses
- Victoria Health Food safety website
  https://www2.health.vic.gov.au/public-health/food-safety
- Streatrader online registration tool
  https://streatrader.health.vic.gov.au/

Western Australia

- Western Australia Health Food website
  https://ww2.health.wa.gov.au/Health-for/Licensing-and-industry/Food

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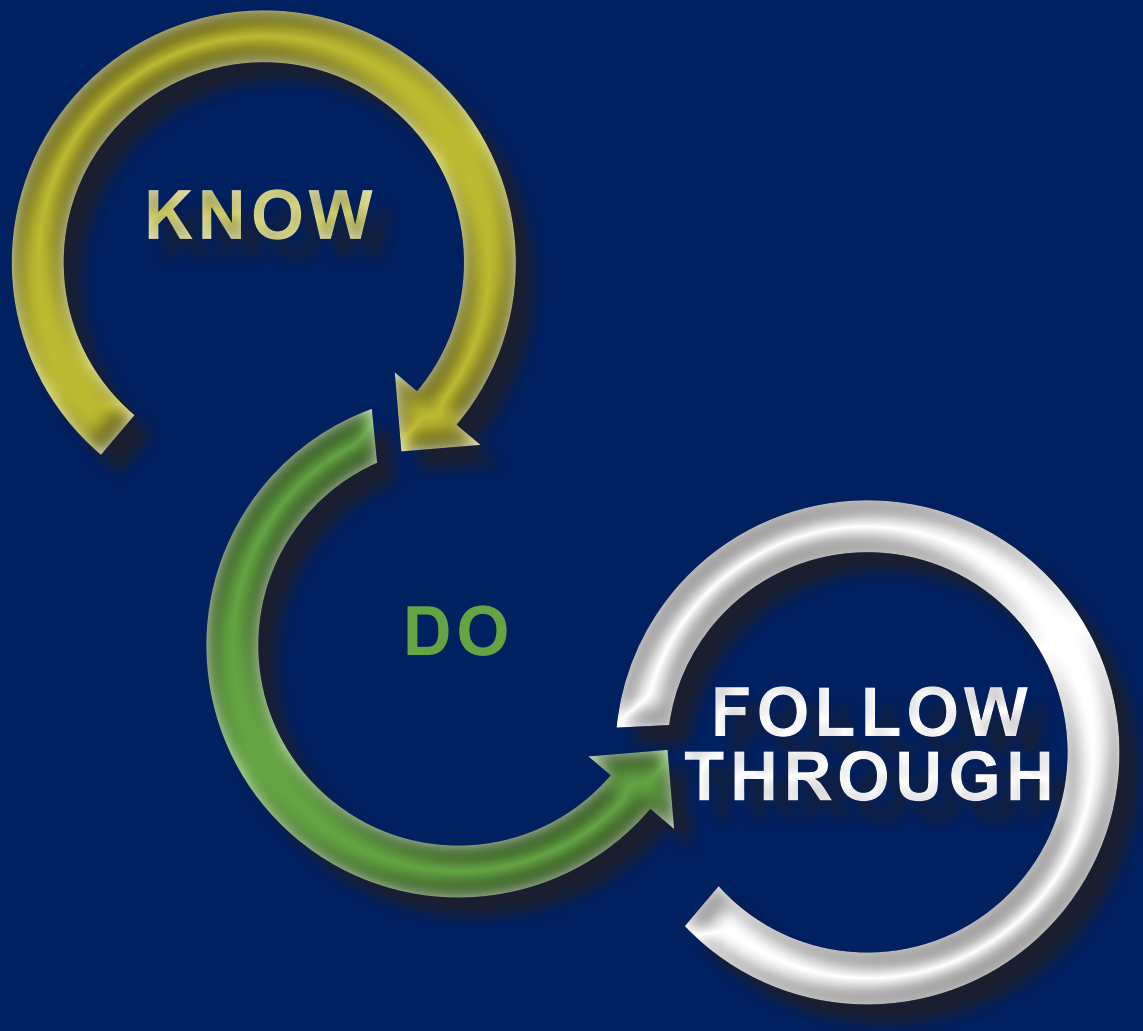
FOOD SAFETY DOESN'T JUST HAPPEN



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