Ministry for Primary Industries
Manatū Ahu Matua

Name of business:

Food Control Plan

Food Service and Food Retail

Consultation

Specialist Food Service and Catering – Serve Safe

For food service businesses that prepare or manufacture and serve food for immediate consumption.

Add to the food service and retail *management and basics* section.

New Zealand Government

Growing and Protecting New Zealand

Serve Safe

Contents

Serve Safe

Defrosting frozen food

Goal

To ensure that thawing is done in ways that minimise contamination of other foods and food surfaces and prevent the growth and spread of microorganisms.

To ensure that defrosted food is thawed thoroughly before processing or sale.

To ensure that previously frozen food is not refrozen.

Act requirements:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevents food containing unexpected or unreasonable substances.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Juices containing harmful microbes from thawing food that directly contaminate other foods and surfaces used for other foods could make people ill.
- Food that is still frozen or partially frozen when cooked might not reach cooking temperature needed to destroy harmful microbes.
- Toxins from harmful organisms may have formed in defrosted products that are refrozen before further processing.

How this is done

Food is thoroughly defrosted before cooking (unless the manufacturer's instructions state otherwise).

This is done by:

- planning ahead and allowing enough time and space to defrost food in the fridge or chiller;
- defrosting food in a way that prevents dripping and contamination of other foods or surfaces (e.g. defrosting in a dish or container and never defrosting food above ready-to-eat food);
- making sure food thawed at room temperature is refrigerated or used as soon as possible once it's thawed.

When it's not possible to defrost food in the fridge or chiller, the following procedure(s) will be followed:
[tick as appropriate]

- ☐ food is thawed in the microwave (if using this method, then use the food as soon as it's defrosted)
- ☐ food is put into an air-tight container and then placed under cold running water
- ☐ food is defrosted on a bench for a period not exceeding four hours.

Check defrosted food before cooking, to make sure that the centre has thawed.

Do not refreeze thawed ready-to-eat food.

What if there is a problem?

If food has not fully defrosted, continue to defrost the food until no ice crystals are left. Check again before cooking.

Speed up the defrosting process (e.g. divide the product into smaller portions).

Write it down

You must write down in the Diary what action you took if food was not properly defrosted.

Thawing tips

If you regularly thaw the same type/size/weight of food, calculate how long it takes to do this so that you'll be able to allow the right amount of time in the future.

Note down the time you start to thaw the food, the temperature of the refrigerator it's being thawed in and the time when the centre of the food has defrosted.

Serve Safe

Preparation

Goal

To prevent food from contamination during preparation from:

- microbes, e.g. bacteria and viruses;
- physical, e.g. hair, packaging;
- chemical, e.g. cleaning chemicals, pesticides.

To prevent the growth of harmful microbes that may be present in food from multiplying to harmful numbers.

Act requirements:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevents food from containing any biological or chemical agents or other substance that would be unexpected and unreasonable in food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food along with the criteria and reason for each criterion.
- Packaging and anything else in contact with food must be able to maintain food safety and suitability.
- Food must be safe and suitable.

Why?

- Harmful microbes will grow rapidly at temperatures between 5ºC to 60ºC (the temperature danger zone).
- Harmful microbes can contaminate food through unclean people, equipment and utensils.
- Food contaminated by chemicals can cause illness.
- Objects can fall into uncovered food affecting its suitability and/or safety.

How this is done

Food preparation surfaces must be clean and if necessary sanitised before use (see *Cleaning and sanitising*).

Good personal hygiene practices must be followed (see *Hand hygiene and Personal hygiene*).

Avoiding cross-contamination

Ready-to-eat food must be protected from contamination from surfaces (including equipment and utensils) that have come into contact with raw or uncooked food by:

☐ using a defined area in the kitchen to prepare raw food that is separate from cooked or ready-to-eat food; or

☐ preparing raw and ready-to-eat food at different times with thorough cleaning and sanitising in between.

(see *Food Basics - Preventing cross-contamination*)

Using different cutting boards and/or surfaces that are dedicated to a particular food is one way to help prevent cross-contamination. You can either clearly mark what each surface is used for or use a colour-code system.

The following cutting boards are used for each of these foods:

- _____ *raw meat
- _____ *raw poultry
- _____ *raw fish
- _____ *fruit and vegetables
- _____ *cooked meat/poultry.

*Write down what cutting board is used for which food (e.g. red for raw meat).

All staff who prepare food must know which preparation surface is to be used with which foods.

How this is done

Fruit and vegetables

The outer surfaces of fruit and vegetables must be washed before cutting or serving to remove any chemicals or harmful microbes present.

Eggs

Whole eggs must be free from cracks and clean.

When using egg pulp it must be pasteurised when being used for uncooked or lightly cooked foods.

Piping bags [tick as appropriate]

☐ Disposable single-use piping bags are used.

☐ Reusable piping bags are used; and

- ☐ they are cleaned and sanitised between tasks;
- ☐ separate piping bags are used for different purposes;
- ☐ piping bags are replaced as appropriate.

Time, temperature and food safety

- The time readily perishable food is left at room temperature (the temperature danger zone) during preparation must be kept to a minimum (this also includes batter mixes etc).
- When not in use, readily perishable food and ingredients must be kept at 5°C or below.

What if there is a problem?

You must throw away any ready-to-eat food that has been contaminated and change any practices and/or retrain staff where necessary.

Glass breakage

If a glass object or window breaks in the kitchen you must:

- clean up the broken glass immediately;
- throw away any uncovered food in the surrounding area;
- check the area carefully for glass;
- dispose of glass fragments in an outside rubbish bin (not the kitchen).

Write it down

Write down in the Diary what action you have taken if food has not been prepared correctly.

Never use the same equipment or utensils (e.g. knives, plates, containers etc) for raw and ready-to-eat foods – unless they have been thoroughly cleaned, sanitised and dried between tasks.

Dehydrated products – Once milk or water is added to products such as potato flakes/granules, custard powder etc they should be used immediately, or either kept chilled (at or below 5°C) or hot (at, or above, 60°C).

Break eggs into a clean container before adding to other ingredients. This will prevent the possibility of the ingredients becoming contaminated by pieces of broken egg shell.

Serve Safe

Cooking poultry

Goal

To ensure that poultry (including liver) and dishes containing poultry are thoroughly cooked to the centre.

Act requirements:

- Food is produced or processed and handled in a way that minimises the contamination or deterioration of the food;
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level
- Food must be safe and suitable.

Why?

Thoroughly cooking poultry will kill the harmful microbes that can make customers ill.

How this is done

- Poultry and poultry products must be thoroughly defrosted before cooking (unless otherwise directed by the manufacturer's instructions).
- The oven must be pre-heated before cooking starts.
- Poultry (including liver) must be cooked so that the centre of the thickest part either exceeds 75°C or reaches one of the temperature/time combinations below.

Internal temperature	Time
65°C	for 10 minutes
70°C	for 2 minutes
75°C	for 15 seconds

Checking poultry is cooked

A thermometer (probe or Infra-red (IR)) must be used to check that the thickest part of the meat (usually the breast or the innermost part of the thigh) has reached at least 75°C or one of the time/temperature combinations above. This is done in one of the following ways:

- the temperature is measured each time the poultry item is cooked; or
- one item in the batch is temperature probed each time a batch of the same poultry item is cooked; or
- one dish is temperature probed each week when a standard (proven) cooking procedure is followed, – see *Proving that a time/temperature setting cooks poultry*.

It is not necessary to temperature probe diced or thinly sliced poultry (such as in a stirfry). This is because smaller pieces are more likely to cook through to the middle more easily and it's difficult to get a representative reading.

When using a temperature probe, follow the procedure *Checking temperatures*.

What if there is a problem?

If poultry does not reach a high enough temperature, you must keep cooking until it does!

When poultry that is being cooked using a standard time/temperature setting is found not to have been cooked properly, you must take action to find out why. Here are examples of questions to ask.

- Was the procedure followed correctly?
- Does the equipment (e.g. oven) need repairing?
- Have the recipe ingredients changed (different cuts of meat)?

Write it down

You must write down in the **Checking poultry is cooked** procedure each of the poultry dishes that are served and select which option will be used to check that they are thoroughly cooked.

Standard time/temperature setting

When a standard time/temperature setting is being used, you must write down the checks that have been made to prove that the time/temperature setting will either:

- cook the food to at least 75°C; or
- cook the food for the correct length of time at the temperature determined (e.g. for 10 minutes at the internal temprerature of 65°C) see **Proving that a time/temperature setting cooks poultry procedure**.

For poultry items that are cooked using a standard time/temperature setting, you must check the temperature of the poultry in one dish every week. Write this down in the **Once a week poultry temperature checks** record in the Diary.

Poultry dishes with no standard time/temperature setting

For poultry dishes that aren't cooked using an established standard time/temperature setting, you must write down the temperature of each poultry item or one item from a batch in the **Cooking poultry temperature record**. This must be done every time the food is cooked.

You must write down in the Diary any action taken if food doesn't reach a safe temperature.

Poultry is always cooked thoroughly and is never served medium or rare.

Serve Safe

Proving that a time/temperature setting cooks poultry

This is what you must do if you regularly cook a poultry item or poultry dish and don't want to check its temperature each time you cook it. You will need to use the same equipment and same standard ingredients (type, weight, size etc) each time you cook the item or dish. The following process will enable you to demonstrate that a standard cooking procedure (such as a particular temperature for a set time) properly cooks the poultry item.

Act requirements:

- Food is produced or processed and handled in a way that minimises the contamination or deterioration of the food;
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level;
- Food must be safe and suitable.

1. You must cook the food using the standard cooking procedure.
2. You must check the thickest part of the poultry item with a thermometer (probe or Infra-red (IR)) to ensure it has either reached more than 75°C or one of the time/temperature combinations from the table below.

Internal temperature	Time
65ºC	for 10 minutes
70ºC	for 2 minutes
75ºC	for 15 seconds

3. You must repeat the standard cooking method in steps 1 and 2 on at least three separate occasions until you are confident a safe temperature will be consistently reached.

   If the food does not reach a safe temperature on three occasions, you will need to increase the cooking time and/or cooking temperature and repeat steps 1 to 3 above.

4. You must write down the results of your time/temperature checks below.

Poultry item:

Select the temperature the poultry item will be cooked to: [tick as appropriate]

☐ Cooked to higher than 75ºC ☐ Cooked at _____ ºC for _____ minutes

Cooking details

Method (How was the food cooked?) What equipment was used? What temperature setting was used?	Date	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
	1st						
	2nd						
	3rd						

* If the temperature is higher than 75ºC, it isn't necessary to probe a second time.

Poultry item:

Select the temperature the poultry item will be cooked to: [tick as appropriate]

☐ Cooked to higher than 75ºC ☐ Cooked at _____ ºC for _____ minutes

Cooking details

Method (How was the food cooked?) What equipment was used? What temperature setting was used?	Date	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
	1st						
	2nd						
	3rd						

* If the temperature is higher than 75ºC, it isn't necessary to probe a second time.

Serve Safe

Proving that a time/temperature setting cooks poultry (continued)

Poultry item:

Select the temperature the poultry item will be cooked to: [tick as appropriate]

☐ Cooked to higher than 75°C ☐ Cooked at ______ °C for ______ minutes

Cooking details

Method (How was the food cooked?) What equipment was used? What temperature setting was used?	Date	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
	1st						
	2nd						
	3rd						

* If the temperature is higher than 75°C, it isn't necessary to probe a second time.

Poultry item:

Select the temperature the poultry item will be cooked to: [tick as appropriate]

☐ Cooked to higher than 75°C ☐ Cooked at ______ °C for ______ minutes

Cooking details

Method (How was the food cooked?) What equipment was used? What temperature setting was used?	Date	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
	1st						
	2nd						
	3rd						

* If the temperature is higher than 75°C, it isn't necessary to probe a second time.

Poultry item:

Select the temperature the poultry item will be cooked to: [tick as appropriate]

☐ Cooked to higher than 75°C ☐ Cooked at ______ °C for ______ minutes

Cooking details

Method (How was the food cooked?) What equipment was used? What temperature setting was used?	Date	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
	1st						
	2nd						
	3rd						

* If the temperature is higher than 75°C, it isn't necessary to probe a second time.

Serve Safe

Checking poultry is cooked

All poultry and dishes containing poultry must be thoroughly cooked. The table below identifies what checks you must carry out for each poultry item or dish to ensure that it is properly cooked.

The Act requires that:

- Food is produced or processed and handled in a way that minimises the contamination or deterioration of the food.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.
- Food must be safe and suitable.

Write it down

Use the table below to identify and record which checks are used to make sure each poultry dish you serve is property cooked.

Step 1 – in column A write down all the poultry dishes that you cook that need checking.

Step 2 – in column E tick a box to show the temperature (and time) the dish will be cooked to. This will either be an instant temperature above 75°C or one of the temperature/time combinations below.

Step 3 – in columns B to D identify how you check that each dish is properly cooked.

- If you temperature probe the dish every time it is cooked, tick the box in **column B**. Each time you cook this dish, you must write the temperature it has been cooked to on the *Cooking poultry temperature record*.
- If you cook a number of the same dishes together (batch cook) and temperature probe one dish in each batch, tick the box in **column C**. Each time you cook a batch of this dish, write the temperature of the probed item on the *Cooking poultry temperature record*.
- If you have a proven time/cooking setting for the dish (you have completed the *Proving that a time/temperature setting cooks poultry procedure* for the dish), tick the box in **column D**. Each week, the temperature of one dish cooked from **column D** must be checked. You must write this temperature in the space that is provided each week in the Diary. If you have identified more than one dish in **column D**, you will need to choose a different dish to check each week to ensure all dishes consistently meet the proven procedure.

Internal temperature	Time
65ºC	for 10 minutes
70ºC	for 2 minutes
75ºC	for 15 seconds

A	Temperature probe (tick as appropriate)			E
Poultry item (list each dish)	B Every dish, every time	C One dish in every batch	D One dish once a week	Temperature poultry dish must reach in thickest part (tick as appropriate)
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins
				☐ 75ºC or ☐ _____ ºC for _____ mins

Serve Safe

Cooking

Goal

To ensure food is properly cooked.

Act requirements:

- Food is produced or processed and handled in a way that minimises the contamination or deterioration of the food.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.
- Food must be safe and suitable.

Why?

- Harmful microbes are present in many foods. Cooking (and reheating) can kill harmful microbes.
- Microbes are invisible to the human eye and cannot be physically removed from food.

How this is done

Processed meat, such as rolled joints, tenderised or injected meats, minced meats and meat products (e.g. sausages, burgers) and livers, must be thoroughly cooked because microbial contamination can be throughout the meat.

Poultry

See *Cooking poultry*.

Processed meat

Follow the manufacturer's cooking instructions, if any.

- Processed meat products are checked that they are steaming hot through to the centre with no red or pink meat remaining.
- Rolled joints are checked by inserting a skewer into the centre until juices run out. Juices must show no pink or red when properly cooked.

Whole cuts and whole joints of meat

The surface of the meat is thoroughly sealed to kill the microbes present.

Whole cuts and whole joints of meat can be cooked to preference and can be served rare, if properly sealed (any contamination will only be on the outside surface of the meat).

Livers

Livers and liver patés are thoroughly cooked – see *Cooking poultry*. There is guidance on the safe cooking of livers at **www.mpi.govt.nz**

Liquid dishes (e.g. soups, sauces, gravies)

- Cold spots must be avoided by stirring frequently so that an even temperature is reached throughout.
- Dishes must be brought to a simmer.

Shellfish

- Look for change in colour and texture. Prawns will turn from blue–grey to pink and scallops become milky white and firm when cooked.
- Any mussel or clam with an open or damaged shell must be thrown out before cooking as it may not be safe to eat.
- To check that a mussel or clam is cooked, make sure the shell is open and that the mussel or clam has shrunk inside the shell. If the shell has not opened during cooking, you must throw it away.

How this is done

Customer self-cook

The following steps must be taken when food is provided for customers to cook their own meals (e.g. hot stone, steamboat, hotpot, grill, barbeque etc).

- Sufficient and appropriate utensils and tableware must be provided to enable customers to avoid cross-contamination.
- Cooking equipment (e.g. hot stone, grill etc) provided must be capable of cooking food safely.

What if there is a problem?

If food isn't cooked thoroughly you must consider:

- cooking the food for longer; or
- looking at recipes and change cooking times and/or temperatures; or
- dividing the food into smaller quantities when cooking; or
- using different equipment;
- retraining staff as necessary.

Write it down

If food does not cook properly when following set recipes and procedures, record in the Diary:

- what you did with the food that was not cooked properly; and
- what action was taken to prevent this happening again.

Tasting dishes *– When tasting food, always use a clean spoon or utensil each time. Don't put any food left from the tasting back into the dish.*

Helpful information *– Customers may be given appropriate instructions on how to cook and handle the food safely.*

Serve Safe

Hot holding prepared food

Goal

To reduce the time that prepared ready-to-eat food is held in the temperature danger zone (5°C to 60°C).

Act requirements:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Food in the temperature danger zone (5°C to 60°C) will encourage harmful microbes to grow rapidly.

How this is done

You must always reheat food first before putting it in a bain-marie or hot cabinet – neither are able to thoroughly reheat food.

Hot holding

The *Reheating prepared food* procedure is followed when food is to be reheated before being hot held.

- Equipment such as bains-marie and warming cabinets must be cleaned and preheated before food is put into them.
- Bains-marie must not be overloaded.
- Food must be held at 60°C or hotter.
- Food is stirred to make sure it's kept hot right through.
- Existing batches of food must not be topped up with new batches.

You must use a thermometer (probe or Infra-red (IR)) to check the temperature of food that has been hot held for two hours – see *Checking temperatures*.

! Use a probe thermometer to check the temperature of food that has been hot held for two hours – see *Checking temperatures*.

What if there is a problem?

If hot food has been held at a temperature below 60°C but higher than 21°C for more than two hours, it must be thrown away.

If hot food has been held at a temperature below 60°C for less than two hours, it can either be:

- thoroughly reheated and served hot (above 60°C); or
- cooled to below 5°C within four hours and kept at this temperature until it is eaten.

Write it down

You must write down

- in the Two-hour hot-held food record the temperature of foods that have been hot held for two hours.
- any problems that you have had in hot holding food at an internal temperature of 60°C or above and what action you took.

Make a note in the Diary of any items that you have had to throw away, and why.

Also write down any matters that might need following up (e.g. maintenance, training, review cleaning schedule etc).

Serve Safe

Cooling hot prepared food

Goal

To cool hot, ready-to-eat food quickly to minimise the length of time it spends in the temperature danger zone.

Act requirements:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.
- Food must be safe and suitable.

Why?

- Food in the temperature danger zone (5°C to 60°C) will encourage harmful microbes to grow rapidly.

How this is done

You must cool hot foods quickly

Readily perishable food must be cooled:

- from 60°C to 21°C within two hours; and
- from 21°C to below 5°C in another two hours (maximum time between 60°C and 5°C = four hours).

Cooked readily perishable food must be protected from contamination during cooling.

Methods for chilling hot food dishes

1. Use a blast chiller.
2. Put the food into a tray or larger dish (preferably metal) to increase its surface area.
3. Divide food into smaller portions.
4. Place on a rack to improve air circulation around the food.
5. Move hot food to a colder area.
6. Place vacuum packed foods into iced water.
7. Stand pans of hot food in cold or iced water.
8. Stir hot liquid as it is chilling.
9. Use the "cool setting" on the oven (the oven must be cool first!).
10. Place the food in the chiller once it has cooled to 21°C.

You must regularly check that food has cooled within the required time frame by using a thermometer (probe or Infra-red (IR)) – see *Checking temperatures*.

What if there is a problem?

If hot prepared food has not been cooled from 60°C to 21°C in two hours and then from 21°C to below 5°C in a further two hours (total of four hours maximum) it must be thrown away.

You will need to try out alternative cooling methods to find one that will cool food to 5°C or below within the required time.

Write it down

Once a week, you must write down in the Diary the temperature check made on one readily perishable item or dish that has been cooled down.

You must also write down any problems that you have had in cooling food to below 5°C in the required time and what action you took and any items you have had to throw away. You will need to include any matters that might need following up (e.g. training, cooling method etc).

Serve Safe

Reheating prepared food

Goal

To reheat food quickly and thoroughly.

To reduce the amount of time readily perishable food is held in the temperature danger zone (5°C to 60°C).

The Act requires:

- Food must be safe and suitable.

Why?

- Microbes can survive in food that is not thoroughly reheated to the centre.
- Food in the temperature danger zone (5°C to 60°C) will encourage harmful microbes to grow rapidly.

How this is done

Reheat food well

- Manufacturer's instructions (if any) must be followed for reheating food.
- Equipment that reheats food effectively must be used.
- Bains-marie and warming cabinets must not be used to reheat food, because they can't reheat food quickly enough.

The following methods must be used to reheat food: [tick as appropriate]

- ☐ microwave (note: observe standing times)
- ☐ oven
- ☐ pot/pan/wok etc.

- Where possible, stir or mix foods to make sure there are no cold spots and the food is evenly reheated.
- When reheating poultry, a thermometer must be used to check that it reaches an internal temperature of 75°C or more.
- Food must be checked to ensure that it has been reheated properly by using the same checks as when cooking (see Cooking).
- Reheated food must be served quickly or kept at 60°C or hotter.

Use of plastics in microwave ovens

- *Avoid direct contact of plastic film with food when using it to reheat food. Clean, white absorbent kitchen paper may be a preferable alternative to prevent spatter.*
- *Only use plastic containers designed for use in the microwave. Other containers may seem okay but may not have been tested for use at high temperatures (e.g. ice cream containers, which are not designed to be exposed to high temperatures).*
- *As chemical migration is more likely to occur into hot fatty foods, glass containers are a suitable choice for heating these products.*

What if there is a problem?

If the food does not reheat sufficiently increase the temperature and/or reheating time.

Retrain staff as necessary.

Write it down

Once a week you must write down in the Diary the temperature of one poultry item that has been reheated.

You must write down any problems that you have had in reheating food and what action you took.

Serve Safe

Display and self service

Goal

To display and serve food in a manner that minimises the risk of contamination and the growth of harmful microbes.

To reduce the amount of time prepared readily perishable food is held in the temperature danger zone (5°C to 60°C).

The Act requires:

- Food must be safe and suitable
- Food must be processed and handled in ways that minimise the contamination or deterioration of food.

Why?

- Food in the temperature danger zone (5°C to 60°C) will encourage harmful microbes to grow rapidly.
- Poor arrangement of food can lead to contamination when customers reach across displays.
- Self-service displays present a high risk because many people have access to the food.

How this is done

Hot food

When reheating food:

- the instructions in the *Reheating prepared food* procedure must be followed;
- the instructions in the *Hot holding prepared food* procedure must be followed.

Chilled food

- Ready-to-eat readily perishable foods must be: [tick method used]

☐ held at 5°C or below

☐ displayed unrefrigerated for no longer than four hours.

- The time ready-to-eat food is left on display above 5°C is indicated by: [tick method used]

☐ time written on stickers stuck on wrapping or next to the food

☐ coloured stickers that can be matched to the time food was put on display stuck on wrapping or next to the food

☐ other _____.

Display and serving

- Food must be put out for display or service as soon as possible after preparation.
- Clean serving utensils must be provided for each food item or dish, and handles do not touch the food.
- Food must be protected from contamination by the use of: [tick method used]

☐ sneeze guards

☐ covers over food

☐ other _____.

- When unwrapped displays (e.g. self-service salads, hot foods etc) need more food they must be replaced with completely new batches of food rather than the previous batch being "topped-up".
- Left-over self-service food must not be reused (e.g. it is not carried over to the next day for use).
- Serving spoons must be replaced whenever they have become contaminated – e.g. dropped on the floor or misused – e.g. food is on handles.
- Single-use items must be thrown away after use (e.g. paper plates, cups, plastic cutlery etc).
- Self-service displays must be appropriately supervised.

What if there is a problem?

You must replace food and/or serving utensils that could have become contaminated through poor food-handling practices or misuse.

You must throw away any food that may have been contaminated by customers or others.

Hot food

If hot food has been held at less than 60°C but higher than 21°C for more than two hours, it must be thrown away.

If hot food has been held at a temperature below 60°C for less than two hours, it must either be:

- thoroughly reheated and served hot (above 60°C); or
- cooled to below 5°C within four hours – see Cooling hot prepared food.

Chilled food

Ready-to-eat readily perishable food that has been held at temperatures between 5°C and 60°C:

- for a total of less than two hours must be refrigerated or used immediately; or
- for a total of between two and four hours must be used immediately; or
- for a total of four hours or longer must be thrown out.

Write it down

You must write down in the Diary any problems that you've had keeping food at the correct temperature and what action you took to fix it.

You must make a note in the Diary of any items that you have had to throw away, and why.

Also write down any matters that need follow up (e.g. training, review cleaning schedule etc.).

Serve Safe

Displaying food for retail sale

Goal

To display all retail food for customer self-selection safely and appropriately.

The Act requires:

- Food must be safe and suitable
- Food must be processed and handled in ways that minimise the contamination or deterioration of food.

Why?

- Readily perishable food in the temperature danger zone (5°C to 60°C) can allow harmful microbes to grow.
- Food that is on display after its "use-by" date could result in consumers becoming ill.
- Food that is not displayed properly could become contaminated.

How this is done

Food on display

- Ready-to-eat food on display must be wrapped or covered to protect it from contamination (e.g. self serve from a closed cabinet).
- Readily perishable food must be displayed under temperature control.
- Pre-packaged food must be displayed in accordance with any manufacturer or supplier's storage instructions.
- Raw foods must be stored so they can't contaminate cooked or ready-to-eat foods.
- Repackaged bulk food must be correctly labelled for retail sale.
- Food in packaging must be thrown away if its wrapping has been damaged to the extent that the food is exposed, or no longer contained in, the wrapping.
- Food cans that are bulging, corroded or damaged must be thrown away or returned to the supplier.

Stock rotation

- A "first in first out" policy for displayed food must be used. Old stock must be displayed so that it is used or sold first; new stock is placed behind old stock.
- "Use-by" dates must be checked daily. Food dated that day must be used or thrown away at the end of the trading day.
- Food that has reached its "best-before" date must be removed from display or sold clearly marked as past its "best-before" date.

See also:

- *Purchasing and receiving goods;*
- *Storage;*
- *Hot holding prepared food;*
- *Display and self service;*
- *Food labelling.*

What if there is a problem?

If food is displayed past its "use-by" dates, identify why and review staff training; check incoming goods and food storage as needed.

If chilled food is above 5°C, or frozen food has thawed, follow actions in the "What if there is a problem?" section in *Chilled/frozen food storage.*

If packaging has been damaged, identify why and review staff training, handling activities and incoming goods checks as needed.

Write it down

You must write down in the Diary any problem that you had with retail food and what action you took to fix it.

Tips for increasing the effectiveness of a chilled/frozen food display cabinet to keep food cold (and reducing running costs). See also Design and use of food premises and Maintenance sections).

- *Use display cabinets with doors, plastic curtains or other ways of containing cold air. Open display cabinets have to work harder to keep food chilled.*
- *Keep the temperature of the retail area cool, so the display cabinet motors will not have to work as hard to keep food cool.*
- *Situate open display cabinets away from strong drafts as they remove cold air from the unit, affect the temperature of food and make the motor work harder.*
- *Keep air vents clear of stock. This will help the unit operate as intended by the manufacturer.*
- *Display food within the load lines. This will help keep it at the intended temperature and prevent food wastage.*
- *Keep door seals free from ice build-up and defrost regularly. This will stop cold air leaking out and mean the motor does not have to work as hard.*
- *Regularly clean dust from heat exchange and motor surfaces to help display cabinets run more effectively.*

Serve Safe

Off-site catering

Goal

To ensure that off-site events are properly resourced and organised in advance.

The Act requires:

- Food must be safe and suitable
- Food must be handled in ways that minimise the contamination or deterioration of food and prevents food from containing any biological or chemical agents or other substance that would be unexpected and unreasonable in food.

Why?

- The lack of appropriate off-site facilities may result in food becoming contaminated.

How this is done

Pre-event check

Before each off-site catering event, the extent of the food preparation and handling activities to be undertaken off site must be determined and relevant procedures and record-keeping requirements of this plan identified.

The following checks are made.

- What facilities will be available at the venue or site for:
  - food storage (including chilled and frozen food);
  - preparation;
  - cooking;
  - changing areas for staff;
  - toilets;
  - hand washing;
  - cleaning equipment etc.
- What services are on-site:
  - water;
  - electricity (if needed);
  - solid and liquid waste disposal.
- When appropriate facilities or services are not available off site, arrangements must be made to provide them. If this is not possible, and an alternative venue is not an option, catering must not be provided for the event.

All of the procedures in this FCP continue to apply and are followed when catering off-site.

Staffing

- Sufficient staff are available, and casual staff must be appropriately trained and supervised.

Transportation

- Sufficient and appropriate food transport must be available – see *Transporting food*.
- Equipment, utensils and food supplies etc. must be checked on arrival at the off-site venue to ensure that they are still appropriate to use – see *Purchasing and receiving goods*.

What if there is a problem?

You must throw away any ready-to-eat food that becomes contaminated.

You must throw away readily perishable food that has been kept between 5°C and 60°C for longer than four hours.

If there has been an equipment breakdown or failure, you must make arrangements to replace or repair equipment. Review the adequacy of the maintenance schedule and make changes as appropriate.

Write it down

You must use the Off-site catering pre-event checklist to record what arrangements are needed.

You must follow the record-keeping requirements in the procedures relevant to the event such as Transporting food, Reheating prepared food, Display and self-service, Hot holding prepared food etc.

Serve Safe

Sushi made using acidified sushi

Goal

To make acidified sushi rice that has a pH of 4.6 or below to enable sushi rice and sushi to be held at temperatures between 5ºC and 15ºC for a period of up to eight hours for nigiri pieces, and up to 12 hours for nori rolls.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food.
- Food must be safe and suitable.

Why?

- Adding vinegar solution to rice makes the rice acidic
- Harmful microbes cannot grow well in acidic food (pH 4.6 or below).

How this is done

This procedure provides for requirements on the safe preparation of sushi (nigiri pieces and nori rolls) using sushi rice.

It does not replace the need to follow other relevant procedures in the Food Control Plan e.g. *Displaying and self service*.

Non-acidified rice and sushi made with non-acidified rice can be kept between 5°C and 15°C for no more than 4 hours – see *Display and self service*.

Sushi Rice

- This procedure does not cover sushi made with brown rice.
- Cooked rice must be cooled from 60°C to 21°C in the first 2 hours and to 15°C, or colder, in another 4 hours.
- The pH of the sushi rice must be at a pH of 4.6 or lower. To do this a vinegar solution must be added to the rice as soon as it is cooked.
- To measure the pH, you must take a sample of the acidified rice and mix it with a little bit of water. pH is measured using:

☐ pH strip

☐ pH paper

☐ calibrated pH meter

- Acidified rice must only be stored outside of temperature control for up to 8 hours after which it must be discarded.
- Acidified rice must be protected from contamination when not being used to make sushi.
- Leftover (refrigerated) rice must not be mixed with a newly prepared batch of rice.

Preparation

- You must ensure all ingredients are clean and free from contamination. This is done by (tick the boxes as it applies):

☐ purchasing readily perishable ingredients in sealed packaging;

☐ fruit and vegetable ingredients are thoroughly washed before use;

☐ separate raw and ready-to-eat ingredients (to minimise cross-contamination).

- Ingredients are handled as little as possible.
- All utensils used are clean and if necessary sanitized.

How this is done

Display

- Nigiri pieces must be held at a temperature of no more than 15°C for no longer than 8 hours. Nigiri pieces that have not been eaten within 8 hours must be thrown away.
- Nori rolls must be held at a temperature of no more than 15°C for no longer than 12 hours. Nori rolls that have not been eaten within 12 hours must be thrown away.
- Onigiri must be stored under refrigeration at or below 5°C at all times, as the rice is not acidified.

The following table shows the shelf-life when sushi rice, and rice combined with sushi ingredients, is kept at between 5°C to 15°C.

	Acidified rice	Sushi assembly	Display
Nigiri	Up to a combined total of 8 hours Example: nigiri pieces are assembled straight after the rice has been acidified. These may be kept for up to 8 hours at between 5°C and 15°C.		
	Example 2: the acidified rice is kept at between 5°C and 15°C for 2 hours before the nigiri pieces are assembled. The pieces may be kept for up to 6 hours at between 5°C and 15°C.		
Nori	Up to a combined total of 12 hours Example: The acidified rice is kept at between 5°C and 15°C for 6 hours before nori rolls are assembled. The nori rolls may be kept for up to 6 hours at between 5°C and 15°C.		
Onigiri	Stored under refrigeration (at or below 5°C).		

'Nigiri' is a piece of raw or cooked ingredient placed on top of sushi rice.

'Nori' is sushi rice, raw or cooked seafood, vegetables or other ingredients rolled in seaweed sheets.

'Onigiri' is sushi rice (not acidified) and shaped into a triangle or oval shape. Onigiri can be plain or contain a filling in the middle.

Write it down

You must write down the pH of each batch of rice that is tested in the Sushi Rice pH Record.

What if there is a problem?

If the pH of the rice is above 4.6, the volume of vinegar solution being added must be increased. You must then re-test the pH of the rice until the correct pH is reached.

Keep a note of the amount of vinegar solution required to achieve the correct pH in one kilogram of rice

Make sure everyone who prepares the sushi rice knows the correct amount to use each time.

Re-train staff in correct food handling procedures if necessary.

You must throw away any sushi products, or their ingredients, that may have been contaminated through poor handling.

You must write down what you did in the daily page of the Diary.

Record

Sushi rice pH record

1. You must check the pH of the rice mix to make sure it has been acidified to pH 4.6 or lower once a month or more frequently if there are problems.
2. If pH is above 4.6 increase the amount of vinegar solution added per kg of rice.
3. You must record the total amount of vinegar solution that needs to be added to 1 kg of rice to ensure that the pH is no more than 4.6.

You must keep this with your records in the Diary

Date	pH of rice	Amount of vinegar added per kg of rice to ensure pH below 4.6

Serve Safe

Chinese style roast duck

Goal

To prepare Chinese style roast duck so that it can be safely held within the temperature danger zone (4ºC – 60ºC) for up to 22hrs. To reduce harmful microbes on the surface of the duck and their ability to grow or produce toxins.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food along with the criteria and reason for each criterion.
- Food must be safe and suitable.

Why?

- Harmful microbes will grow rapidly at temperatures between 4ºC – 60ºC (the temperature danger zone).
- The boiling water will kill harmful microbes and the vinegar will help stop them from growing while the duck is hung to dry.
- Keeping the skin intact will prevent harmful microbes from getting onto, and growing on, the meat.

How this is done

This procedure does not replace the need to follow other relevant procedures in the Food Control Plan.

Preparation

- Frozen ducks must be thoroughly defrosted.
- The duck must be dipped in boiling water containing vinegar and other ingredients (as used in the recipe).
- The duck must be hung to dry in a cool area for no longer than six hours. (After six hours of hanging, the growth rate of microbes increases. Some microbes release toxins that will not be destroyed during roasting).
- At the start and half way through the drying process the internal temperature of the duck is checked using a thermometer (probe or Infra-red (IR)) to make sure that internal temperature of the duck doesn't get any higher than 25ºC throughout the drying process.

Cooking

- The duck is roasted (follow *Cooking poultry*).

Display/storage

- After cooking, the duck must be carried using the hanging hook and must not be directly handled.
- Care must be taken to make sure the duck's skin remains intact and isn't broken during display and storage. This is because if harmful microbes get onto the duck's flesh, they will grow quickly.
- Ducks must be displayed or stored in a well ventilated area to prevent moisture build up (ie, not in an enclosed glass cabinet).
- ducks must not touch each other or any other products on display or during storage.
- Ducks must not be on display at ambient conditions for any longer than 22 hours. (After 22 hours on display harmful microbes grow more quickly on the surface of the duck's skin.)
- Wrapping the duck will increase condensation and decrease the shelf life to 5 hours at ambient conditions

What if there is a problem?

Drying

You must:

- re-boil any water that's used to dip the ducks if the mixture has cooled down;
- move any ducks that have a core temperature higher than 25ºC during the drying process to the chiller until the temperature drops below 25ºC;
- throw away any ducks that have been hung to dry for a period longer than six hours.

Display

If ducks are found to be touching each other or any other meats on display, you must move them away immediately.

If ducks have been in contact with each other for a long time, you must remove them from the display, cut them up, and reheat the meat to 75ºC. Then either:

- keep the meat at or above 60ºC until it's served; or
- cool the meat from 60ºC to 21ºC within two hours, and from 21ºC to 4ºC in four hours and store at or below 4ºC.

When the duck's skin is broken or has been handled by someone, cut up the duck – you must keep it at or above 60ºC until it's served.

You must remove and dispose of any ducks that have been on display for longer than 22 hours.

Record your actions in the daily page of the Diary.

Write it down

You must write down in the drying record:

- the temperature of each duck at the time it was hung up to dry and the time that drying started (see Chinese style roast duck drying record).
- the temperature of the duck halfway through the drying process and what you did to bring it down if it was higher than 25°C.
- the time the duck was taken from the drying area to be cooked.

Serve Safe

Proving a drying method for Chinese style roast duck

This is what you can do if you regularly cook Chinese style roast duck and don't want to check its temperature each time during the drying process. You must use the same equipment and same standard ingredients (i.e. same size ducks, same ingredients) each time. The following process will enable you to demonstrate that the duck is dried safely.

1. Follow the serve safe Chinses style roast duck.
2. During the drying process, you must make sure that the internal temperature of the duck doesn't get any higher than 25°C. Move any ducks with an internal temperature of more than 25°C during the drying process to the chiller until the temperature drops below 25°C.
3. Repeat the drying and cooking methods in steps 1 and 2 on at least three separate occasions until you are confident a safe drying method will be able to achieve consistent temperatures.

   If the duck does not reached the selected internal product temperature on three occasions, you must move the ducks with internal temperature of more than 25°C to the chiller until the temperature has dropped below 25°C.

   The time the ducks can be held at ambient conditions is no more than 6 hours. It is cumulative – if the ducks were placed in refrigeration to drop the internal temperature, then the time they had already been hung to dry before being put into refrigeration must be added onto the time they are hung to dry again once they are removed from refrigeration.
4. Write down the results of your time/temperature checks below.

Food item:

Drying details

What equipment was used? What temperature setting was used (for the chiller and oven?)	Date	Time started drying	Core Temperature		Time taken from drying area for cooking	Action taken to correct drying if core temperature is greater than 25°C	Initials
			Start	Halfway			
	1st						
	2nd						
	3rd						

Food item:

Drying details

What equipment was used? What temperature setting was used (for the chiller and oven?)	Date	Time started drying	Core Temperature		Time taken from drying area for cooking	Action taken to correct drying if core temperature is greater than 25°C	Initials
			Start	Halfway			
	1st						
	2nd						
	3rd						

Record

Chinese style roast duck drying record

1. Duck can be hung to dry in a non-refrigerated area for up to 6 hours, provided the core temperature is no higher than 25°C.
2. Record the start time that ducks are hung to dry and the core temperature of ducks.
3. Record the core temperature of ducks halfway through drying.
4. If the core temperature is above 25°C, record the action you took to bring the temperature down to below 25°C.
5. Record the time ducks are taken from the drying area to be cooked.

Keep this with your records in the Diary.

Date	Time ducks started to dry	Core temp at start °C	Core temp half way through drying °C	Action taken to correct drying if core temperature is greater than 25°C	Time ducks taken from drying area for cooking

Serve Safe

Doner Kebab

Goal

To prevent the raw meat used to make the doner kebab from contaminating cooked and ready-to-eat foods.

To cook the doner kebab thoroughly.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food.
- Food must be safe and suitable.

Why?

- The raw doner kebab meat may contain harmful microbes that could contaminate ready-to-eat food.
- To ensure that harmful microbes are killed by cooking.

How this is done

This procedure doesn't replace the need to follow other relevant procedures in the Food Control Plan.

Preparing a kebab spit

- Only fresh meat from an approved supplier must be used.
- Meat must be kept chilled at or below 5°C until needed.
- Spits must be prepared away from areas where salads, dips, sauces and cooked food is kept.
- Thin cuts of meat must be used when forming the spit.
- Prepared spits must be protected against dirt and other contamination and kept chilled below 5°C until needed for cooking.
- Frozen spits must be defrosted in the fridge prior to cooking.
- The length of the formed block of meat must not be longer than the length of the burners.

Cooking/Serving

Cooking of the doner kebab on the vertical grill must be started well before serving the first customers.

The outside of the doner kebab must be thoroughly cooked before thin slices of meat are shaved from the outside surface.

Shaved meat must be collected and must not be allowed to fall into the drip tray.

Once the doner kebab starts cooking the heating elements must be kept on and not turned down.

Minced meat spits may be cooked from frozen but shaved meat must undergo further cooking on a griddle/hot plate prior to use.

Best Practice is a second cook step via a griddle/hot plate to further cook the shaved meat before it is placed in the pita bread. This is done because the meat may not have had time to properly cook through on the spit to kill harmful microbes.

What if there is a problem?

If the shaved meat has not been cooked thoroughly you must continue cooking it by using a hotplate/grill.

If the doner kebab has not been completely used at the end of service you must:

- throw it away; or
- carve off any part cooked meat from the skewer. Cook thin slices on the grill/hotplate. Cool the cooked shaved meat, cover it and store in the fridge. The next day it may be reheated and served to your first customers.

You must cool the raw meat that remains on the skewer to 21°C in two hours and to below 5°C in four hours.

Write it down

You must write down in the diary what action you took if there was a problem.

Check whether the specific record keeping requirements contained in the following procedures apply (tick as appropriate):

- ☐ Cooking poultry
- ☐ Hot-holding prepared food
- ☐ Cooling hot prepared food
- ☐ Reheating prepared food

Serve Safe

Cooking using the sous vide technique (cook-serve)

Goal

To ensure food served immediately is safe to eat when prepared using the sous vide method.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food.
- Food must be safe and suitable.

Why?

- Lower temperature cooking takes longer to kill harmful microbes.
- Food can be held within the temperature danger zone (5°C to 60°C) for a maximum of 4 hours.
- Harmful microbes will grow when held within the temperature danger zone for longer than 4 hours.

How this is done

Sous vide is a method of cooking vacuum packed food at precise (and often low) temperatures. This process only applies to sous vide cooking of meat and poultry cuts (excluding whole birds, minced, chopped or diced meats).

This procedure provides information on cook-serve sous vide cooking. It doesn't replace the need to follow other relevant procedures in the Food Control Plan.

Preparation

- Ingredients must be handled hygienically.
- Equipment must be cleaned and, where necessary, sanitised before use – see *Cleaning and sanitising*.
- Food must be prepared into serving portions of equal size that can be cooked and chilled quickly.
- Food must be vacuum packed in sous vide specific vacuum packs.
- The vacuum-sealed product for sous vide cooking must be refrigerated at 5°C or lower if not used immediately.

> Once opened, do not reseal the vacuum bag. Exposing the food product to air will introduce microbes which may affect the shelf life or safety of the food.

Cooking

- Cooking equipment must have the adequate heating capacity for the intended volume of food, and accurate and consistent temperature control.
- Water bath must be pre-heated to a temperature that will ensure the food reaches the desired cooking temperature (minimum 55°C for all meats except poultry and 60°C for poultry – selected from the holding time and temperature combinations table).
- The water bath temperature must be monitored regularly during cooking.
- Vacuum-sealed food must be completely submerged in the water, packs must be evenly distributed in the water bath and not touch the sides of the water bath or other foods.

> Chilled foods must not to be added to the water bath part way through a cook, as this will cause the water bath temperature to drop.

How this is done

- The temperature at the centre of the thickest part of the food must be measured from the pack that is the slowest to heat (e.g. the thickest piece of meat located at the coolest part of the water bath).
- Once the centre of the thickest part of the food has met the selected internal product temperature, it must be held constant for the holding time corresponding to the selected internal product temperature.
- For every batch of food, the meat must be probed at the end of the cook.

> When checking the internal temperature of the food, the vacuum seal must not be broken.

- At the end of the holding time food must be removed from the water bath and seared and served immediately.
- Inform your customers that the product can still be rare in the centre.
- The total time the food to be cooked (from when it is first placed in the water bath to when it is removed from the water bath) must not exceed 4 hours. Discard the product if it is held within the temperature danger zone for longer than 4 hours.
- When a proven sous vide procedure is followed, one vacuum-sealed pack must be temperature probed each week – see *Proving a cooking method for sous vide*.

Time and temperature combinations

Cook-serve time and temperature combinations must only be applied to foods that are served immediately after sous vide. Poultry products must be held in a water bath temperature of 60°C or higher. Cook-serve food products must be seared before serving.

How this is done

Internal product temperature (°C)	Holding times (minutes)	
	Cook-serve	
	All meats except poultry	Poultry
55	89	Poultry must not be sous vide at temperatures lower than 60°C
56.1	71	
57.2	36	
58.4	23	
59.5	15	
60	12	16.9
61.1	8	13.9
62.2	5	10.8
63.3	169 seconds	7.8
64.4	107	4.7
65	85	3.2
66	54	1.7
67	43	1.4

What if there is a problem?

If a vacuum cannot be made (too much air in the vacuum bag), or the food leaks in the water, the process must be stopped and the vacuum machine checked to see if it is working properly and that the vacuum bags do not have holes.

If the food is taking a long time to reach the selected internal product temperature you must check for the following:

- The water bath temperature is at the selected temperature.
- The water bath is not overfilled with water and/or product.
- Good circulation of water after the food has been placed in the water bath.

If the internal product temperature has dropped during the cooking and the final product temperature is not at the required internal product temperature at the end of the cook, the product must be cooked for the length of holding time that is required for the measured internal product temperature to be reached.

Write it down

You must write down in the Sous vide control sheet the checks made to confirm that food has been cooked including:

- Water bath temperature
- Time taken for the food to reach the selected internal product temperature
- Length of holding time
- Centre temperature of the product at the end of holding time

You must write down your actions when something went wrong with the cooking process (e.g. when the product was not up to temperature at the end of the holding time).

Serve Safe

Cooking using the sous vide technique (cook-chill)

Goal

To ensure food is safe to eat when prepared using the sous vide method.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food.
- There must be procedures in place that prevent, eliminate or reduce hazards during the production, processing and handling of food.
- Food must be safe and suitable.

Why?

- Lower temperature cooking takes longer to kill harmful microbes.
- Harmful microbes are likely to survive and grow if food is cooked at a temperature that is close to the temperature danger zone (5°C to 60°C).
- Harmful microbes will grow in the absence of air in vacuum packaged products.

How this is done

Sous vide is a method of cooking vacuum packed food at precise (and often low) temperatures. The cook-chill method is when sous vide products are chilled after cooking. This process only applies to sous vide cooking of meat and poultry.

This procedure provides information on sous vide cooking. It doesn't replace the need to follow other relevant procedures in the Food Control Plan.

This page provides the requirements for a business operating with this FCP template. Additional pages provide further explanation about safe sous vide practices and must be used together.

Preparation

- Ingredients must be handled hygienically.
- Equipment must be cleaned and, where necessary, sanitised before use – see *Cleaning and sanitising*.
- Food must be prepared into serving portions of equal size that can be cooked and chilled quickly (refer to guidance for more information).
- Food must be vacuum packed in sous vide specific vacuum bags.
- The vacuum-sealed product for sous vide cooking must be refrigerated at 5°C or lower if not used immediately.

> Once opened, do not reseal the vacuum bag. Exposing the food product to air will introduce microbes which may affect the shelf life or safety of the food.

Cooking

- Cooking equipment must have the adequate heating capacity for the intended volume of food, and accurate and consistent temperature control and monitoring.
- Water bath must be pre-heated to a temperature so the food will reach the desired cooking temperature (minimum 60°C - selected from the holding time and temperature combinations table).
- Place the vacuum-sealed food in the water bath. is The food must be completely submerged in the water bath, packs must be evenly distributed and must not touch sides of the water bath or other foods.

How this is done

> Chilled foods must not to be added to the water bath part way through a cook, as this will cause the water bath temperature to drop.

- The temperature at the centre of the thickest part of the food must be measured (the time for the food product to reach the required internal product temperature is the come-up time).
- Once the centre of the thickest part of the food has met the selected internal product temperature, it must be held constant for the holding time corresponding to the selected internal product temperature.
- For every batch of food, the meat must be probed at the end of the cook.

> When checking the internal temperature of the food, the vacuum seal must not be broken. See *Additional food safety information for sous vide procedure*

- At the end of the holding time food must be removed and cooled – see *Cooling hot prepared foods*.
- When a proven sous vide procedure is followed, one vacuum-sealed pack must be temperature probed each week – see *Proving a cooking method for sous vide*.

Holding time and temperature combinations table

- The come-up time for the centre of the product to reach the internal product temperature must not be included in the following holding times. The holding times specify the minimum time requirements, the product can be held for longer if required.

Internal product temperature (°C)	Holding times for cook-chill sous vide (minutes)
60	44
61	33
62	24
63	18
64	13
65	10
66	7
67	6

How this is done

Storing sous vide product

- Food must be kept in its vacuum sealed packaging until it is ready to be used.
- Chilled, cooked sous vide food must be kept at or below 5°C.
- Chilled, cooked sous vide food must be used within 7 days of cooking.

What if there is a problem?

If a vacuum cannot be made (too much air in the vacuum bag), or the food leaks in the water, the process must be stopped and the vacuum machine checked to see if it is working properly and that the vacuum bags do not have holes.

If the food is taking a long time to reach the selected internal product temperature, you must check for the following:

- The water bath temperature is at the selected temperature.
- The water bath is not overfilled with water and/or product.
- Good circulation of water after the food has been placed in the water bath.

At the end of the holding time, if the internal product temperature has dropped from the selected internal product temperature, the product mustbe cooked longer in the water bath (refer to guidance for more details).

During chilled storage, if the vacuum-sealed bags bloat up, do not open the bag and discard it.

Write it down

You must write down in the **Sous vide control sheet** the checks made to confirm that food has been cooked including:

- Water bath temperature
- Time taken for the food to reach the selected internal product temperature
- Length of holding time
- Centre temperature of the product at the end of holding time

You must write down your actions when something went wrong with the cooking process (e.g. when the product was not up to temperature at the end of the holding time).

Serve Safe

Proving a cooking method for sous vide

This is what you can do if you regularly sous vide food products and don't want to check its temperature each time you cook it. You must use the same equipment (i.e. water bath filled with same amount of water) and same standard ingredients (type, weight, size, number of packs in water bath etc) each time you sous vide the food products. The following process will enable you to demonstrate that a standard sous vide cooking procedure will properly cook the food product.

1. Follow the serve safe Cooking using the sous vide technique.
2. You must check the thickest part of the food item with a probe thermometer to ensure it has reached the selected internal product temperature and the respectively holding times.

Internal product temperature (°C)	Cook-chill holding times (minutes)
60	44
61	33
62	24
63	18
64	13
65	10
66	7
67	6

3. You must repeat the cooking method in steps 1 and 2 on at least three separate occasions until you are confident a safe temperature will be consistently achieved.

   If a food product has not reached the selected internal product temperature on three occasions, you must increase the holding time and/or water bath temperature and repeat steps 1 to 3 above. Refer to guidance for more details.

4. You must write down the results of your time/temperature checks below.

Food item and details (i.e. weight, ingredients etc):

Water bath temperature is set at _____ °C	Water bath temperature (recorded every 20 minutes)	Time						
		Temp						

Cooking details

What equipment was used (water bath loading)? How many vacuum packs were placed in the water bath? Is the product cook-serve or cook-chill?	Date	Time food placed in water bath	Time to reach selected internal product temp		Holding period		2nd probe*		Initials
			time	temp	time	temp	time	temp	
	1st								
	2nd								
	3rd								

Food item and details (i.e. weight, ingredients etc):

Water bath temperature is set at _____ °C	Water bath temperature (recorded every 20 minutes)	Time						
		Temp						

Cooking details

What equipment was used (water bath loading)? How many vacuum packs were placed in the water bath? Is the product cook-serve or cook-chill?	Date	Time food placed in water bath	Time to reach selected internal product temp		Holding period		2nd probe*		Initials
			time	temp	time	temp	time	temp	
	1st								
	2nd								
	3rd								

* The second probe is only required if the internal temperature measured at the end of the holding time has dropped from the internal temperature measured at the end of 'time to reach selected internal product temp

Guidance

Additional food safety information for sous vide procedure

The guidance material includes recommendations for food businesses to follow to ensure food safety hazards are controlled. The guidance material should be used in conjunction with the "serve safe" procedures for sous vide cook-chill procedure.

Sous vide is not suitable for all food products

Whole birds (chicken or duck) have cavities inside which prevents even cooking.

1. Vacuum sealing

- A vacuum sealer used for raw food must not be used for cooked ready-to-eat foods, unless there is a cleaning and sanitation step in-between to minimise cross-contamination.
- Sous vide specific vacuum bags must be single use, heat resistant and thaw resistant. They must be thick enough to be resistant to punctures from bones and sharp food edges.
- Re-sealable sandwich bags must not be used. These bags cannot draw a vacuum so unable to achieve good contact between product and the water bath.
- Test the vacuum seal by submerging the vacuum pack product in water. Air bubbles or bloated bags indicate air is present.
- There must be no creases in the vacuum-sealed pack: creases and air between the foods in the vacuum bag will slow down how quickly the product heats up.

2. Preparation

- **Size of the food product**: ensure the products are similar size and weight per vacuum bag to achieve consistent cooking.
- **Shape of the food product**: ensure the food product is shaped so it can be cooked quickly. For example, a thick slab will take longer to cook than a thin slab, so a quicker come-up time is required.

3. Water bath

- Do not overload the water bath and add more vacuum-sealed packs than you have proven the process can cook in a batch.
- There must be good water circulation in the water bath (there must be no cold spots where water temperature is significantly lower). This can be done by an automated stirrer.
- The water bath temperature can be set a few degrees higher than the desired internal temperature of the product to make sure the target temperature is reached.
- The water bath temperature must be measured with a hand-held, calibrated thermometer. Take temperature readings at various spots of the water bath to confirm it is at constant temperature.
- The water bath temperature must be monitored regularly during cooking. The operator must record the water bath temperature at regular intervals or use an inbuilt data logger.
- Vacuum packed bags must be kept below the water surface. Plates or wire racks can be used to do this.
- Place the largest cut of the meat in the coolest part of the water bath to monitor the temperature of the batch. Once that cut has been held for the required temperature and holding time, then the entire batch will have been cooked.
- If the water bath level drops during a cook and the vacuum sealed products rise to the water surface, add warm water at a temperature that is not less than the set water bath temperature. Adding cold water will lower the water bath temperature and the product will have to be cooked for longer.

4. Cooking process

- You must make sure the food reaches the selected internal product temperature quickly. Follow the recommendations about size and shape of food products.
- You must check the centre of the thickest part of the product has reached the selected internal product temperature prior to the start of holding time.
- The maximum time food product is held within the temperature danger zone (5°C to 60°C) is 4 hours. Discard any product that has been held within 5°C to 60°C for longer than 4 hours.

5. Temperature measurements

- You must ensure hygienic practices when measuring the internal temperature of sous vide products. Refer to *Checking temperatures*.
- The internal temperature must be measured as you will not be able to tell from the look and feel of the product whether it has been thoroughly cooked.
- The internal temperature of the product can be measured by a needle temperature probe, inserted into a vacuum pouch through closed cell foam tape or thermocouple feed-through connector.

6. Holding times and temperatures

- The cook-chill holding time and temperature combinations gives a 6D log reduction in Listeria monocytogenes, which is generally accepted as sufficient to inactivate other vegetative pathogens.
- The holding time specified in the *Holding time and temperature combinations table* is the minimum holding time for the food product. The product may be held longer if required.

How to measure the internal product temperature without breaking the vacuum seal

1. Place some closed cell foam tape on the thickest part of the vacuum sealed food product.
2. Insert the needle temperature probe into the closed foam tape until the tip has reached the middle of the food product.
3. If the temperature reading is not at the required temperature, leave the probe in the food product and place the food product back into the water bath.
4. Check if any juices have leaked from the vacuum sealed bag. If there are signs of leakage you must remove the bag from the water bath.

Guidance

Additional food safety information for sous vide procedure (cont...)

If the internal temperature is not up to the selected internal product temperature at the end of the holding time, the product will need to be cooked longer in the water bath.

For example, a product was held at 65°C for 10 minutes but at the end of the holding time the internal temperature was measured at 63°C. The product needs to be left in the water bath and held for an additional 8 minutes (so the total holding time for the product would be 18 minutes at 63°C).

7. Service, cooling and storage

Searing the sous vide product after water bath cooking can add desirable flavour and colour.

To rapidly cool packaged sous vide products, put them in a half ice half cold water slurry. Check throughout the cooling process that the ice has not fully melted. You must add more ice if all of the has dissolved.

Store the sous vide products at 5°C or lower for no longer than 7 days. This is to control the growth of *Clostridum botulinum*.

8. Labelling of sous vide products

Chilled sous vide products must be labelled with: the date and time prepared, description of food and discard date. This allows for easier identification, stock rotation and record keeping.

9. Informing customers

Sous vide foods that are not fully cooked may pose a risk to certain individuals, including pregnant women, young children, the elderly or immune-compromised.

Customers must be informed when the foods they consume may pose a health risk to themselves, so they are able to make an informed choice.

10. Cleaning and maintenance

You must change the water bath every time you cook sous vide.

The water bath can be cleaned with a water/vinegar solution at 71°C for 25 minutes as required.

You must perform routine maintenance on sous vide equipment as per instructions. Ensure all components are in good working condition.

Record

Sous vide control sheet

This page is for businesses that produce food using the sous vide method. A record of temperature and time as listed below must be kept for every sous vide cook.

Temperature control is extremely important to ensure the product is safe to consume.

		Cooking						
Date	**Item description**	Water bath tempera-ture	Time to reach in-ternal product temp	Holdng time	Centre temperature of the product at the end of holding time	**Comments/ Action taken** (e.g. if core temperature is not high enough)	Served Immediately	Chilled storage
24/6/15	*Chicken breast*	*62°C*	*30 mins*	*27 mins*	*62°C*	*no actions taken*	✓	

Record

Cooking poultry temperature

Dishes containing poultry items that are not cooked using a standard time/temperature setting must be checked with a probe thermometer to ensure that they reach at least 75oC.

The temperature check must be taken in the thickest part of the meat (usually the breast or the innermost part of the thigh). If temperature probing one item in a batch, indicate this by ticking ☑ the “One of a batch” column.

Date	Time	Food	Type of check		Temp		Signed
			Individual	One of a batch	1st probe	2nd probe	
			☐	☐			
			☐	☐			
			☐	☐			
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Record

Two-hour hot-held food temperature

Hot-held food is kept hot at 60°C or above. Any food that has been held for two hours is checked with a temperature probe to ensure that it is still at, or above, 60°C (this temperature check is repeated for every two hours that the food is hot held).

Date	Time*	Food items	2hr temp	Time of check	Comments/action	Initials

* Time the food commenced hot-holding.

What if food is below 60ºC?

If hot food has been held at a temperature below 60ºC for two hours or less, it must be either:

- thoroughly reheated to 60ºC or above, and served hot (above 60ºC); or
- cooled to below 5ºC and kept at this temperature until it's eaten. Continued cooling needs to ensure that the food has spent no more than four hours between 60ºC and 5ºC.

If hot food has been held at a temperature below 60ºC for more than two hours it must be thrown away.

Record

Off-site catering pre-event checklist

The procedures in the FCP must be followed when catering off site. This includes any record-keeping requirements.

Function	
Name of function:	
Client:	Client telephone:
Venue:	Date:
Style of function:	
Food service: Cocktail/served meal/buffet meal ☐ hot food ☐ cold food	
What food preparation/cooking will be carried out on site?	
Event: Indoor/outdoor (e.g. tent) [specify]	Duration: One day/other [specify]
Catering facilities: In building/other [specify]	
Guest number(s):	Serving time(s):
Special dietary needs (e.g. allergies):	
What is the access to the venue?	

Check that the following facilities, equipment and services are available at the venue or site and that they will be suitable and sufficient for the catering activities to be undertaken.

Venue	Yes	No	What needs to be provided
Facilities and equipment			
Dry goods storage			
Catering area (size, construction etc)			
Benches			
Sinks/wash-hand basins			
Hot water			
Fridge storage			
Freezer storage			
Oven(s)			
Number of hotplates			
Hot-holding (bain-marie etc)			
Clearing zone for used/dirty dishes etc			
Staff changing area			
Toilet facilities			
Services provided			
Electricity supply (and sufficient electrical points)			
Water (potable water supply)			
Waste			
Staff			
Sufficient trained staff available			
Transportation			
Suitable means of transporting food			